MILLARD PUBLIC SCHOOLS
SCHOOL DISTRICT NO. 17
a/k/a
Millard Public School District
NOTICE OF MEETING

Notice is hereby given of a Board of Education meeting of School District No. 17, in the County of Douglas, which will be held at 6:00 p.m. on **Monday, May 4, 2020**. Pursuant to the Governor's Executive Order No. 20 – 03 and for public health purposes associated with COVID-19, this meeting will be held by videoconference through "ZOOM" with access available to the public and media. The Zoom link for the meeting can be found at www.mpsomaha.org.

Information on how the meeting will be held and how the public and media may access the meeting, as well as the agenda and materials for the meeting, will be posted on the District's website at www.mpsomaha.org. Agenda for such meeting, kept continuously current, is available for public inspection on our website at www.mpsomaha.org.

Stacy Jolley
Secretary

5-1-20

THE DAILY RECORD OF OMAHA

JASON W. HUFF, Publisher

PROOF OF PUBLICATION

UNITED STATES OF AMERICA,
The State of Nebraska,
District of Nebraska,
County of Douglas,
City of Omaha, } **ss.**

J. BOYD

being duly sworn, deposes and says that she is

LEGAL EDITOR

of THE DAILY RECORD, of Omaha, a legal newspaper, printed and published daily in the English language, having a bona fide paid circulation in Douglas County in excess of 300 copies, printed in Omaha, in said County of Douglas, for more than fifty-two weeks last past; that the printed notice hereto attached was published in THE DAILY RECORD, of Omaha, on

May 1, 2020

That said Newspaper during that time was regularly published and in general circulation in the County of Douglas, and State of Nebraska.

GENERAL NOTARY - State of Nebraska
ELLEN FREEMAN
My Comm. Exp. December 11, 2021

Subscribed in my presence and sworn to before me this 1st **day of** May **20**

Publisher's Fee $22.10

Additional Copies $

Total $22.10

Notary Public in and for Douglas County, State of Nebraska

Proud to be Millard PUBLIC SCHOOLS
www.mpsomaha.org

BOARD OF EDUCATION MEETING

May 4, 2020

BOARD OF EDUCATION
MILLARD PUBLIC SCHOOLS
OMAHA, NEBRASKA

BOARD MEETING
MAY 4, 2020
6:00 P.M.

DON STROH ADMINISTRATION CENTER
5606 SOUTH 147TH STREET

AGENDA

Pursuant to the Governor's Executive Order No. 20 – 03 and for public health purposes associated with COVID-19, this meeting will be held by videoconference through "ZOOM" with access available to the public and media. The Zoom link is https://zoom.us/j/96278730747 and can also be found at www.mpsomaha.org/board.

A. **Call to Order**

The Public Meeting Act is posted on the Millard Public School website and available for public inspection

B. **Pledge of Allegiance**

C. **Roll Call**

D. **Public Hearings**
1. Student Fees
2. Parental Access

E. **Public Comments on agenda items** – This is the proper time for public questions and comments on agenda items only. Please use this link to complete a form if you wish to speak. You will be called upon to speak at the appropriate time.

F. **Routine Matters**
1. *Approval of Board of Education Minutes - April 20, 2020
2. *Approval of Bills and receive the Treasurer's Report and Place on File

G. **Information Items**
1. Superintendent's Comments
2. Board Comments/Announcements
3. Report from Student Representatives

H. **Unfinished Business**
1. Second Reading and Approval Policy 4130: Human Resources - Examinations

I. **New Business**
1. Approval of Rule 4130.1: Human Resources - Health Examinations
2. Approval of Rule 4130.2: Human Resources - Examinations - Bus or Small Vehicle Driver
3. Reaffirm Policy 6750: Curriculum, Instruction, and Assessment- Student Fees
4. Approval of Rule 6750.1: Curriculum, Instruction, and Assessment - Student Fees
5. Reaffirm Policy 6800: Curriculum, Instruction, and Assessment- Parental Access
6. Reaffirm Rule 6800.1: Curriculum, Instruction, and Assessment- Parental Access
7. Approval of 9-12 Science Instructional Materials and PK-12 Science Framework: Part II B
8. Approval of 6-12 Skilled and Technical Sciences Instructional Materials and Framework: Part II
9. Approval of Administrator for Hire - Assistant Principal at Russell Middle School - Katharine L. Hadan

10. Approval of Personnel Actions: Recommendation to Hire, Resignation Agenda, Contract Addendum

J. **Reports**
1. Early College High School Program Evaluation
2. Senior Status Report
3. Summer School Report
4. Legislative Report

K. **Future Agenda Items/ Board Calendar**
1. Committee of the Whole Meeting on Monday, May 11, 2020 at 6:00 p.m.
2. Board of Education Meeting on Monday, May 18, 2019 at 6:00 p.m.
3. Board of Education Meeting on Monday, June 1, 2020 at 6:00 p.m.
4. Committee of the Whole Meeting on Monday, June 8, 2020 at 6:00 p.m.

L. **Public Comments - Public Comments -** This is the proper time for public questions and comments on any topic. Please use this link to complete a form if you wish to speak. You will be called upon to speak at the appropriate time.

M. **Adjournment**

All items indicated by an asterisk (*) will comprise the Consent Agenda and may be acted on in a single motion. Items may be deleted from the Consent Agenda by request of any board member.

BOARD OF EDUCATION
MILLARD PUBLIC SCHOOLS
OMAHA, NEBRASKA

BOARD MEETING
MAY 4, 2020
6:00 P.M.

DON STROH ADMINISTRATION CENTER
5606 SOUTH 147TH STREET

ADMINISTRATIVE MEMORANDUM

A. Call to Order

The Public Meeting Act is posted on the Millard Public School website and available for public inspection.

B. Pledge of Allegiance

C. Roll Call

D.1 Public Hearing - Student Fees

D.2 Public Hearing - Parental Access

E. Public Comments on agenda items – This is the proper time for public questions and comments on agenda items only. Please use this link to complete a form if you wish to speak. You will be called upon to speak at the appropriate time.

F.1* Motion by _____, seconded by _____, to approve the Board of Education Minutes from April 20, 2020. (See enclosure)

F.2* Motion by _____, seconded by _____, to approve the bills, receive the Treasurer's Report and Place on File. (See enclosure)

G.1 Superintendent's Comments

G.2 Board Comments/Announcements

G.3 Report from Student Representatives

H.1 Second Reading by _____, Motion by _____, seconded by _____, to approve Policy 4130: Human Resources - Examinations. (See enclosure)

I.1 Motion by _____, seconded by _____, to approve Rule 4130.1: Human Resources - Health Examinations. (See enclosure)

I.2 Motion by _____, seconded by _____, to approve Rule 4130.2: Human Resources - Examinations - Bus or Small Vehicle Driver. (See enclosure)

I.3 Motion by _____, seconded by _____, to reaffirm Policy 6750: Curriculum, Instruction, and Assessment - Student Fees. (See enclosure)

I.4 Motion by _____, seconded by _____, to approve Rule 6750.1: Curriculum, Instruction, and Assessment -

Student Fees. (See enclosure)

I.5 Motion by _____, seconded by _____, to reaffirm Policy 6800: Curriculum, Instruction, and Assessment-Parental Access. (See enclosure)

I.6 Motion by _____, seconded by _____, to reaffirm Rule 6800.1: Curriculum, Instruction, and Assessment-Parental Access. (See enclosure)

I.7 Motion by _____, seconded by _____, to approve the 9-12 Science Instructional Materials and PK-12 Science Framework: Part II B. (See enclosure)

I.8 Motion by _____, seconded by _____, to approve the 6-12 Skilled and Technical Sciences Instructional Materials and Framework: Part II. (See enclosure)

I.9 Motion by _____, seconded by _____, to approve Katharine L. Hadan as the new Assistant Principal at Russell Middle School. (See enclosure)

I.10 Motion by _____, seconded by _____, to approve Personnel Actions: Recommendation to Hire, Resignation Agenda, Contract Addendum. (See enclosure)

J. Reports
1. Early College High School Program Evaluation
2. Senior Status Report
3. Summer School Report
4. Legislative Report

K. Future Agenda Items/ Board Calendar
1. Committee of the Whole Meeting on Monday, May 11, 2020 at 6:00 p.m.
2. Board of Education Meeting on Monday, May 18, 2019 at 6:00 p.m.
3. Board of Education Meeting on Monday, June 1, 2020 at 6:00 p.m.
4. Committee of the Whole Meeting on Monday, June 8, 2020 at 6:00 p.m.

L. Public Comments - This is the proper time for public questions and comments on any topic.
Please use this link to complete a form if you wish to speak. You will be called upon to speak at the appropriate time.

M. Adjournment

All items indicated by an asterisk (*) will comprise the Consent Agenda and may be acted on in a single motion. Items may be deleted from the Consent Agenda by request of any board member.

STUDENT FEES PUBLIC HEARING SCRIPT
By Duncan A. Young, Young & White Law Offices
Monday, May 4, 2020
6:00 pm
Don Stroh Administration Center

(NOTE: The Act requires that the public hearing be held at a special or regularly scheduled meeting of the Board of Education and, therefore, you should open the special meeting and state that the purpose of the special meeting is to hold the public hearing on the Student Fees Policy.)

I. Good evening and welcome to the special meeting of the Millard Public Schools' Board of Education. The purpose of the special meeting is to hold the public hearing on the Student Fees Policy.

Section 79-2,134 of the Public Elementary and Secondary Student Fee Authorization Act requires that annually each school board hold a public hearing at a regular or special meeting for the purpose of addressing the proposed Student Fees Policy.
Prior to holding the public hearing, the act requires the Board of Education to review the amount of money collected from the students and the use of the waivers pursuant to the Student Fees Policy for the prior year. That was provided to the Board.

I would like to introduce the Board members who are present and will participate in this public hearing. They are:

_____ _____ _____

_____ _____ _____

As I understand, the Superintendent and the District's administration are recommending this Policy and the accompanying Rule for adoption and are available to answer questions from the Board members. I also understand that the administration is not going to make a presentation as such.

(If no one is wishing to speak) Seeing no request to speak I will now entertain a motion to close the Public Hearing. Motion, Second, Vote. The Public Hearing is closed

(If public is present and wishing to speak continue)

In order to allow everyone a chance to address the Board on the Student Fees Policy and accompanying Rule, I would like to ask each of you to limit your comments to three (3) minutes. If there is a group of people who collectively would like to address the Board on this issue it might be helpful if you would select one, two or three individuals to speak on behalf of the entire group. Of course, we will allow each of you who wish to address the Board on this subject to do so at this time. The official Board action on the policy and accompanying rule will be acted on during the regular meeting which is scheduled to follow immediately after this public hearing.

I have received (numerous) (_____) requests to address the Board and I will attempt to call you in the order in which the requests were turned in prior to the opening of this public hearing. After everyone has had an opportunity to address the Board on this issue, I will close the public hearing and adjourn the special meeting. The first speaker that has requested an opportunity to address the Board is _____

(*continue calling the individuals until you have gone through all of them*). There is no other person wishing to address the Board.

I will now entertain a motion to close the Public Hearing on the Student Fees Policy and Rule. Motion, Second, Vote.

(Thank you very much for your participation in this public hearing. You have offered valuable information and insight to all of the Board members as well as to the Superintendent and his administrative staff.)

Public hearing is closed.

Millard Public Schools
Fee Fund Receipts-4/1/19-3/31/20

	Field/Other Trips	Extra-Curricular Activities Clubs/Organizations	Participation/Pass	Other Classes/Programs	Exam Fees AP,IB,PSAT	Student Transportation	Total
Elementaries	$882	$0	$0	$5,378	$0	$0	$6,260

	Field/Other Trips	Extra-Curricular Activities Clubs/Organizations	Participation/Pass	Other Classes/Programs	Exam Fees AP,IB,PSAT	Student Transportation	Total
Middle Schools	$3,554	$78,284	$89,488	$257,789	$0	$173,786	$602,901

	Field/Other Trips	Extra-Curricular Activities Clubs/Organizations	Participation/Pass	Other Classes/Programs	Exam Fees AP,IB,PSAT	Student Transportation	Total
High Schools	$12,438	$718,977	$87,506	$0	$26,064	$0	$844,984

	Field/Other Trips	Extra-Curricular Activities Clubs/Organizations	Participation/Pass	Other Classes/Programs	Exam Fees AP,IB,PSAT	Student Transportation	Total
District Wide Totals	$16,874	$797,261	$176,994	$263,167	$26,064	$173,786	$1,454,145

Millard Public Schools
Fee Fund Receipts-4/1/19-3/31/20

	Extra-Curricular Activities			Other	Exam Fees	Student		4/1/2019-3/31/2020
	Field/Other Trips	Clubs/Organizations	Participation/Pass	Classes/Programs	AP,IB,PSAT	Transportation	Total	
Elementaries								
Abbot	$0	$0						$0
Ackerman	$0	$0						$0
Aldrich	$0	$0						$0
Black Elk	$0	$0						$0
Bryan	$0	$0						$0
Cather	$0	$0						$0
Cody	$0	$0						$0
Cottonwood	$0	$0						$0
Disney	$0	$0						$0
Ezra	$0	$0						$0
Harvey Oaks	$0	$0						$0
Hitchcock	$0	$0						$0
Holling Heights	$0	$0						$0
Montclair	$0	$0		$4,530				$4,530
Morton	$0	$0						$0
Neihardt	$0	$0						$0
Norris	$0	$0		$848				$848
Reagan	$0	$0						$0
Reeder	$0	$0						$0
Rockwell	$1,070	$0						$1,070
Rohwer	$0	$0						$0
Sandoz	$0	$0						$0
Upchurch	$0	$0						$0
Wheeler	$0	$0		$0				$0
Willowdale	-$188	$0	$0	$0				-$188
Subtotal Elementaries	$882	$0	$0	$5,378	$0	$0		$6,260

	Extra-Curricular Activities			Other	Exam Fees	Student		4/1/2019-3/31/2020
	Field/Other Trips	Clubs/Organizations	Participation/Pass	Classes/Programs	AP,IB,PSAT	Transportation	Total	
Middle Schools								
Anderson Middle	$0	$13,385	$13,316	$1,455		$30,412		$58,568
Beadle Middle	$420	$19,472	$13,335	$2,250	$0	$47,885		$83,362
Central Middle	$34	$10,810	$15,658	$1,170		$25,980		$53,652
Kiewit Middle	$1,560	$0	$16,499	$100,640		$50,760		$169,459
North Middle	$1,540	$18,835	$15,715	$132,800		$11,580		$180,470
Russell Middle	$0	$15,782	$14,965	$19,474		$7,170		$57,391
Subtotal Middle Schools	$3,554	$78,284	$89,488	$257,789	$0	$173,786		$602,901

	Extra-Curricular Activities			Other	Exam Fees	Student		4/1/2019-3/31/2020
	Field/Other Trips	Clubs/Organizations	Participation/Pass	Classes/Programs	AP,IB,PSAT	Transportation	Total	
High Schools								
Millard North High	$0	$120,893	$34,811	$0	$16,375	$0		$172,078
Millard South High	$725	$201,114	$23,995	$0	$2,934	$0		$228,768
Millard West High	$11,714	$396,970	$28,700	$0	$6,755	$0		$444,138
Horizon High		$0						$0
Subtotal High Schools	$12,438	$718,977	$87,506	$0	$26,064	$0		$844,984
District Wide Totals	$16,874	$797,261	$176,994	$263,167	$26,064	$173,786		$1,454,145
								$1,454,145
								$0

PARENTAL ACCESS PUBLIC HEARING SCRIPT
By Duncan A. Young, Young & White Law Offices
Monday, May 4, 2020
6:05 pm
Don Stroh Administration Center

The next hearing at this special meeting of the Millard Public Schools' Board of Education will be on the District's Parental Access Policy 6800 and Rule 6800.1.

This public hearing is being held because Nebraska Statute 79-533 requires that annually each school board hold a public hearing at a regular or special meeting for the purpose of addressing the proposed Parental Access Policy 6800 and Rule 6800.1.

Please have the record reflect the Board members who are present and will participate in this public hearing. They are:

_____ _____ _____

_____ _____ _____

As I understand, the Superintendent and the District's administration are recommending this Policy and the accompanying Rule for adoption and are available to answer questions from the Board members. I also understand that the administration is not going to make a presentation as such.

The official Board action on the policy and accompanying rule will be acted on during the regular meeting which is scheduled to follow immediately after this public hearing.

(If there is no one wishing to speak) Seeing no requests to speak I will now entertain a motion to close the Public hearing for Parent Access, Policy 6800 and Rule 6800.1 and to adjourn the special meeting. Motion, Second, Vote. If there is no other person wishing to address the Board, I will now close the public hearing and adjourn the special meeting.

(If public is present and wishing to speak continue)

In order to allow everyone a chance to address the Board on the Parental Access Policy and accompanying Rule, I would like to ask each of you to limit your comments to three (3) minutes. If there is a group of people who collectively would like to address the Board on this issue it might be helpful if you would select one, two or three individuals to speak on behalf of the entire group. Of course, we will allow each of you who wish to address the Board on this subject to do so at this time.

I have received (numerous) (_____) requests to address the Board and I will attempt to call you in the order in which the requests were turned in prior to the opening of this public hearing. After everyone has had an opportunity to address the Board on this issue, I will close the public hearing and adjourn the special meeting. The first speaker that has requested an opportunity to address the Board is _____

(*continue calling the individuals until you have gone through all of them*). There is no other person wishing to address the Board.

(Thank you very much for your participation in this public hearing. You have offered valuable information and insight to all of the Board members as well as to the Superintendent and his administrative staff.)

.I will now entertain a motion to close the Public hearing for the Districts Parental Access Police 6800 and Rule 6800.1 and to adjourn the special meeting of the Millard Board of Education.

(Motion, Second; Vote)

MILLARD PUBLIC SCHOOLS
SCHOOL DISTRICT NO. 17

A meeting of the Board of Education of the School District No. 17, in the county of Douglas in the state of Nebraska was convened at 6:00 p.m.,Monday, April 20, 2020. Pursuant to the Governor's Executive Order No. 20 – 03 and for public health purposes associated with COVID-19, this meeting will be held by videoconference through "ZOOM" with access available to the public and media. The Zoom link was https://zoom.us/j/99865267710, and was posted on the district website.

Notice of this meeting was given in advance thereof by publication in the Daily Record on Friday, April 17, 2020 a copy of the publication is being attached to these minutes. Notice of this meeting was given to all members of the Board of Education and a copy of the agenda are attached to these minutes. Availability of the agenda was communicated in advance notice and in the notice of the Board of Education of this meeting.

President Linda Poole announced that the open meeting laws was posted on the Millard Public Schools website and available for public inspection and asked everyone to join in the Pledge of Allegiance.

Roll call was taken. Mr. Kennedy, Mrs. McGill Johnson, Mrs. Poole, Mr. Anderson, Mrs. Jolley, and Mr. Pate were present.

Mrs. Poole announced now the proper time for public questions and comments. There were none.

Motion was made by Mike Kennedy, seconded by Stacy Jolley, to approve the Board of Education minutes for April 6, 2020, approve the bills and receive the treasurer's report and place on file. Voting in favor of said motion was: Mr. Anderson, Mr. Pate, Mrs. Poole, Mrs. Jolley, Mrs. McGill Johnson and Mr. Kennedy. Voting against were: None. Motion carried.

Superintendent's Comments:
Dr. Sutfin said he will be sending the board an invite to a staff retirement zoom celebration. Since the Employee recognition dinner was canceled they wanted to do something to honor these employees, some who have as many as 35 years of service.

Dr. Sutfin said summer school will be modified to be held remotely. A summer school report will be presented at the May 4th board meeting. In the elementary level it will focus on math, reading and writing. The STEAM summer school has been canceled.

Dr. Sutfin said today we served our highest number of meals for a Monday, which was just over 4,500 meals.

Board Comments:

Linda Poole:
Mrs. Poole said the publicity the district has received during this time has all been remarkable. She said one of Millard's beliefs is people are our greatest resource. She feels this has been proven during this difficult time. She has enjoyed seeing the social media posts of things being done in our district.

Stacy Jolley:
Mrs. Jolley thanked our teachers for their continued work. Mrs, Jolley also thanked the Millard Public Schools Foundation for their support of the district. Without their support of devices, much of this work would not be possible.

Dave Anderson:
Mr. Anderson said all feedback he has received has been positive.

Amanda McGill Johnson:
Mrs. McGill Johnson said she has also been very proud of all the work being done in our district. She has loved seeing all the social media posts of the work being done.

Mike Pate:

Mr. Pate also thanked the teachers for all the work they are doing and said they are doing a great job. Mr. Pate said he assisted with the Millard Public Schools Foundation Executive Director interviews of three candidates recently. Interviews went well and a decision has not been made yet.

Mike Kennedy:
Mr. Kennedy said as a parent of a senior, he appreciates all that is being done by our high school principals and staff for our students. He said all feedback he is hearing and seeing on social media is positive.

Unfinished Business:

Second Reading by Stacy Jolley, Motion by Stacy Jolley, seconded by Amanda Mc Gill Johnson, to approve Policy 3641: Support Services - Construction Procedures - Delivery SystemUnfinished Business. Voting in favor of said motion was: Mrs. Jolley, Mrs. McGill Johnson, Mr. Kennedy, Mr. Anderson, Mr. Pate, and Mrs. Poole. Voting against were: None. Motion carried.

New Business:

Motion by Dave Anderson, seconded by Stacy Jolley, to approve Rule 2100.21: Administration - Director of Communications. Voting in favor of said motion was: Mrs. McGill Johnson, Mr. Kennedy, Mr. Anderson, Mr. Pate, Mrs. Poole and Mrs. Jolley. Voting against were: None. Motion carried.

Motion by Amanda McGill Johnson, seconded by Dave Anderson, to approve Rule 3641.1: Support Services - Construction – Construction Management at Risk. Voting in favor of said motion was: Mr. Kennedy, Mr. Anderson, Mr. Pate, Mrs. Poole, Mrs. Jolley and Mrs. McGill Johnson. Voting against were: None. Motion carried.

Mike Pate gave the First Reading of Policy 4130: Human Resources - Examinations.

Motion by Dave Anderson, seconded by Stacy Jolley, to approve Rule 5400.1: Student Services - Student Discipline. Voting in favor of said motion was: Mr. Anderson, Mr. Pate, Mrs. Poole, Mrs. Jolley, Mrs. McGill Johnson and Mr. Kennedy. Voting against were: None. Motion carried.

Motion by Dave Anderson, seconded by Amanda McGill Johnson, to approve Rule 5400.6: Student Services - Standards for Student Conduct. *Director of Student Services Bill Jelkin said students who are suspended for their first offense of vaping have an opportunity to reduce their suspension by completing an online education module. This module was created by ESU#3 with the input of the MOEC group. It provides education on the effects of vaping and how to quit.* Voting in favor of said motion was: Mr. Pate, Mrs. Poole, Mrs. Jolley, Mrs. McGill Johnson, Mr. Kennedy and Mr. Anderson. Voting against were: None. Motion carried.

Motion by Dave Anderson, seconded by Amanda McGill Johnson, that the contracts for the Millard High School Learning Commons Renovations be awarded to KE Flex Contracting in the amount of $722,690.00, Allmakes in the amount of $259,756.61, and Encompass in the amount of $32,687.77 as set forth in the attached architect's recommendations and that the Chief Financial Officer be authorized to execute any and all documents related to such project. *Chief Financial Officer Chad Meisgeier said this project is being funded out of depreciation funds. Mr. Meisgeier said Nancy Novak from Alley Poyner was available to address questions and concerns from the Board.* Voting in favor of said motion was: Mrs. Jolley, Mrs. McGill Johnson, Mr. Kennedy, Mr. Anderson, Mr. Pate, and Mrs. Poole. Voting against were: None. Motion carried.

Motion by Stacy Jolley, seconded by Mike Pate, that the contract for the Millard Bryan Elementary School Paving be awarded to Carley Construction in the amount of $218,820.25 and that the Chief Financial Officer be authorized to execute any and all documents related to such project. *Chief Financial Officer Chad Meisgeier said Joe Zadina Lamp Rynearson was available to address questions and concerns from the Board.* Voting in favor of said motion was: Mrs. McGill Johnson, Mr. Kennedy, Mr. Anderson, Mr. Pate, Mrs. Poole and Mrs. Jolley. Voting against were: None. Motion carried.

Motion by Dave Anderson, seconded by Amanda Mc Gill Johnson, to approve the 9-12 Business, Marketing and Management Framework- Part I. *Associate Superintendent of Educational Services Dr. Heather Phipps said they took a look at today's business and solicited feedback from area business leaders to develop this framework. One change is to the Personal Finance course which is now only offered to 10-12 graders.* Voting in favor of said motion was: Mr. Kennedy, Mr. Anderson, Mr. Pate, Mrs. Poole, Mrs. Jolley and Mrs. McGill Johnson. Voting against were: None. Motion carried.

Motion by Mike Pate, seconded by Stacy Jolley, to approve the K-12 Communication Information Systems Framework- Part I. *Associate Superintendent of Educational Services Dr. Heather Phipps said the name has been changed to Communication Information Systems to mirro what is used in the industry and the Nebraska Department of Education terminology. The framework has been redesigned to offer robust opportunities such as robotics, coding and gaming.* Voting in favor of said motion was: Mr. Anderson, Mr. Pate, Mrs. Poole, Mrs. Jolley, Mrs. McGill Johnson and Mr. Kennedy. Voting against were: None. Motion carried.

Motion by Dave Anderson, seconded by Stacy Jolley, to approve the K-12 World Language Framework- Part I. *Associate Superintendent of Educational Services Dr. Heather Phipps said a team of Millard teachers, administrators and district level leaders have worked this year to update the World Language Standards and Indicators. The Framework is structured around the 5 C's of world language learning: Communication, Culture, Connections, Communities and Cognition.* Voting in favor of said motion was: Mr. Pate, Mrs. Poole, Mrs. Jolley, Mrs. McGill Johnson, Mr. Kennedy and Mr. Anderson. Voting against were: None. Motion carried.

Motion by Mike Pate, seconded by Amanda McGill Johnson, to approve the PK-8 Instructional Materials and PK-12 Science Framework: Part II A and K-8 Field Study Results. *Associate Superintendent of Educational Services Dr. Heather Phipps said the K-8 science framework was approved last year. They are proposing the use of Amplify Science instructional materials for PK-8. This material will help us align with the state standards.* Voting in favor of said motion was: Mrs. McGill Johnson, Mr. Kennedy, Mr. Anderson, Mr. Pate, Mrs. Poole and Mrs. Jolley. Voting against were: None. Motion carried.

Motion by Mike Pate, seconded by Amanda McGill Johnson, to approve Middle School Electives Instructional Materials and Middle School Electives Field Study for 2020-2021. *Associate Superintendent of Educational Services Dr. Heather Phipps said the new middle school course offering was approved in 2018. This is the three year of the new middle school schedule and the final year of elective field studies.* Voting in favor of said motion was: Mrs. Jolley, Mrs. McGill Johnson, Mr. Kennedy, Mr. Anderson, Mr. Pate, and Mrs. Poole. Voting against were: None. Motion carried.

Motion by Dave Anderson, seconded by Stacy Jolley, to approve Personnel Actions: Recommendation to Hire: Megan M. Springer, Steven T. Ponzetti, Emma J. Shaner, Lauren K. Winkler, Elizabeth K. Watts, Ryan A. Shantz, Frederick J. Hellbusch, Audrie M. Goltl, Tawny M. Lockett, Rachel K. Page, Amy C. Eggers, Amanda S. Swolley, Diane B. Freitas, Alessandra C. Walker, Mandy M. Todd, Riley L. Schroeder, Taylor A. Schaeffer, Brooke E. Dowding, Dayna M. Burke, Madison R. Ford, Natalie R. Zook, Brian R. Briggs, Allayna L. Hayden, Kyle P. Parkhill, Tina M. Preuss, Brandon A. Andersen, Jana R. Georgius, Rachel E. Von Kampen, Margaret A. Getzfrid, Blair E. Sommerfeld; Resignation Agenda: Kristen K. McKearney, Amanda N. Prahm, Lori L. Adam, Chloe L. Killpack, Jordan S. Warner, Jennifer N. Stec, Virginia J. Curtiss, Jennifer R. Albert, Holly R. Neville, Brooke A. Theis, Mary K. Hough, Jessica J. Bader, Elizabeth J. Casey, Melanie J. Gibbons, Kaysie Zeches, Jordan K. Lechner, Kelly M. Kastens, Jami L. Stelk, Kelly J. Hilbrands, Kathleen G. Coffeen, Allison A. Koch, Jennifer L. Schwartz, Anna Ahrens, Julie L. Baker; Leave of Absence Agenda: Jenna M. Rickert. Voting in favor of said motion was: Mrs. Poole, Mrs. Jolley, Mrs. McGill Johnson, Mr. Kennedy, Mr. Anderson and Mr. Pate. Voting against were: None. Motion carried.

Reports:

Secondary Small Class Size Report

Associate Superintendent of Educational Services Dr. Heather Phipps provided the board with the high school small class size report. This report was reinstated in 2015 as part of the Selective Abandonment process. Dr. Phipps shared that this

report is used to create discussion with building teams, specifically regarding courses with less than 14 students enrolled. This year the recommendation is to cut three course offerings.

Legislative Report

Executive Director of Activities, Athletics & External Affairs Nolan Beyer said they continue to focus on property tax relief. There is still a small group of senators who think there will be funding for property tax relief. Mr. Beyer is continuing to monitor this.

Mr. Beyer said they are waiting for additional information about the Federal stimulus money that the State of Nebraska will receive. He said at this time it is unclear how the funds earmarked for PK-12 education can be used. The largest question is if the legislatiations will have to pass an expenditure for these funds to be used.

Mr. Beyer said there have also been many conversations on when the legislation will reconvene. Most likely they will return in early fall.

Future Agenda Items/ Board Calendar:

1. Board of Education Meeting on Monday, May 4, 2020 at 6:00 p.m.
2. Committee of the Whole Meeting on Monday, May 11, 2020 at 6:00 p.m.
3. Board of Education Meeting on Monday, May 18, 2019 at 6:00 p.m.
4. Board of Education Meeting on Monday, June 1, 2020 at 6:00 p.m.
5. Committee of the Whole Meeting on Monday, June 8, 2020 at 6:00 p.m.

Meeting adjourned at 7:21 p.m.

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Secretary, Stacy Jolley

Millard Public Schools

May 04, 2020

Millard Public Schools Check Register Prepared for the Board Meeting for May 4, 2020

Fund	Check Number	Check Date	Vendor Number	Vendor Name	Transaction Amount
01	470696	05/04/2020	136271	TROPHY GUY INC	$84.20
	470699	05/04/2020	143154	AMERICAN BUSINESS FORMS INC	$7,686.00
	470700	05/04/2020	141122	A-UNITED AUTOMATIC DOOR & GLASS INC	$1,307.25
	470701	05/04/2020	137482	KRISTINA A BAMESBERGER	$87.34
	470702	05/04/2020	137623	BARDCO INC	$600.00
	470703	05/04/2020	133154	DESAREE D BARR	$13.34
	470704	05/04/2020	143159	DIANE M BARTON	$105.00
	470706	05/04/2020	135223	AARON J BEARINGER	$207.00
	470707	05/04/2020	107540	BRIAN F BEGLEY	$216.20
	470708	05/04/2020	142454	LAURA C BESHALER	$83.47
	470709	05/04/2020	134945	NOLAN J BEYER	$669.63
	470710	05/04/2020	134478	TIFFANY M BOCK SMITH	$66.94
	470711	05/04/2020	103078	BODY BASICS INC	$321.78
	470712	05/04/2020	130899	KIMBERLY M BOLAN	$107.02
	470713	05/04/2020	139996	BOYS TOWN	$34,821.33
	470714	05/04/2020	139890	DOUGLAS J BREITER	$69.23
	470715	05/04/2020	019861	BRIGGS, INC.	$39.71
	470716	05/04/2020	141510	CHRISTINE L BUKOWSKI	$73.03
	470717	05/04/2020	139496	NICOLE E BURTON	$465.00
	470720	05/04/2020	138613	CENTRAL SALES INC	$1,152.56
	470721	05/04/2020	135648	SUSAN M CHADWICK	$7.88
	470722	05/04/2020	132271	ERIK P CHAUSSEE	$16.10
	470723	05/04/2020	106851	CHILDREN'S HOME HEALTHCARE	$33,526.75
	470724	05/04/2020	142943	JAMIE N CHRISTENSEN	$39.27
	470725	05/04/2020	140226	GARY LEE CLEMMER	$70.00
	470726	05/04/2020	137013	NANCY S COLE	$51.18
	470727	05/04/2020	133483	RONALD B COLE	$105.00
	470728	05/04/2020	139891	MARY T CONNELL	$27.31

Millard Public Schools Check Register Prepared for the Board Meeting for May 4, 2020

Fund	Check Number	Check Date	Vendor Number	Vendor Name	Transaction Amount
01	470729	05/04/2020	134861	TARA R COOPER	$1,949.03
	470730	05/04/2020	108436	COX COMMUNICATIONS INC	$7,388.39
	470731	05/04/2020	108436	COX COMMUNICATIONS INC	$27,319.47
	470732	05/04/2020	106893	WICHITA WATER CONDITIONING INC	$15.33
	470733	05/04/2020	130900	CHERYL L CUSTARD	$185.85
	470734	05/04/2020	131003	DAILY RECORD	$38.20
	470735	05/04/2020	138477	MIDWEST HARDWOODS	$128.22
	470736	05/04/2020	138306	STACY L DARNOLD	$36.69
	470737	05/04/2020	141005	JEREMY M DAWSON	$578.20
	470738	05/04/2020	106713	ANDREW S DEFREECE	$84.12
	470739	05/04/2020	032800	DEMCO INC	$271.60
	470740	05/04/2020	032872	DENNIS SUPPLY COMPANY	$3,021.02
	470741	05/04/2020	137331	BASTIAN DERICHS	$46.29
	470742	05/04/2020	132669	DIGITAL DOT SYSTEMS INC	$245.00
	470744	05/04/2020	139349	TERRIN D DORATHY	$22.43
	470745	05/04/2020	141459	J & L SERVICES INC	$30.34
	470746	05/04/2020	138426	KELLY D EALY	$49.39
	470747	05/04/2020	052370	ECHO ELECTRIC SUPPLY CO	$1,007.49
	470748	05/04/2020	037525	EDUCATIONAL SERVICE UNIT #3	$532.50
	470749	05/04/2020	142874	EDUPOINT EDUCATIONAL SYSTEMS LLC	$1,791.09
	470750	05/04/2020	133823	REBECCA S EHRHORN	$200.62
	470752	05/04/2020	108082	ELECTRONIC CONTRACTING COMPANY	$500.00
	470753	05/04/2020	038140	ELECTRONIC SOUND INC.	$5,919.05
	470755	05/04/2020	142407	SAMANTHA L ENGEL	$18.63
	470756	05/04/2020	102720	EPCO LTD INC	$3,063.00
	470759	05/04/2020	142215	F-M FORKLIFT SALES & SERVICE INC	$573.07
	470760	05/04/2020	140494	MATTHEW J GEERTS	$72.68
	470761	05/04/2020	044155	GENERAL FIRE & SAFETY EQUIPMENT CO	$140.00

Millard Public Schools Check Register Prepared for the Board Meeting for May 4, 2020

Fund	Check Number	Check Date	Vendor Number	Vendor Name	Transaction Amount
01	470762	05/04/2020	142924	GREATER OMAHA ATTENDANCE & LEARNING	$300.00
	470763	05/04/2020	044950	GRAINGER INDUSTRIAL SUPPLY	$2,014.97
	470764	05/04/2020	141813	MICHELLE A HALLETT	$82.39
	470765	05/04/2020	140714	DEANNA L HAND	$25.94
	470766	05/04/2020	142331	STEVEN C HARMS	$13.80
	470767	05/04/2020	138844	SANDRA A HAVENS	$12.13
	470768	05/04/2020	048475	HEARTLAND FOUNDATION	$57,165.00
	470769	05/04/2020	102842	HELGET GAS PRODUCTS INC	$3.15
	470770	05/04/2020	141513	MELISSA M HENNINGS	$26.22
	470772	05/04/2020	142299	MARK R HILBURN	$578.20
	470773	05/04/2020	138782	JACOB W HIRZ	$578.20
	470775	05/04/2020	142777	HOME DEPOT USA INC	$27,417.46
	470776	05/04/2020	049650	HOUGHTON MIFFLIN HARCOURT PUB CO	$993.17
	470777	05/04/2020	109836	AMY L HOULTON	$80.56
	470778	05/04/2020	132531	TERRY P HOULTON	$410.23
	470779	05/04/2020	101533	DIANE F HOWARD	$25.76
	470780	05/04/2020	137426	HUGHES MULCH PRODUCTS LLC	$4,900.00
	470782	05/04/2020	142477	HUSKER DIESEL INC	$345.15
	470783	05/04/2020	143158	HEATHER C N HUTCHISON	$21.28
	470784	05/04/2020	130283	KARA L HUTTON	$43.07
	470785	05/04/2020	133397	HY-VEE INC	$546.37
	470786	05/04/2020	133397	HY-VEE INC	$151.65
	470787	05/04/2020	049850	HY-VEE INC	$61.85
	470789	05/04/2020	136349	SCOTT H INGWERSON	$54.84
	470790	05/04/2020	139348	DANIEL D INNES	$25.99
	470791	05/04/2020	138418	LAURA M INNES	$75.27
	470792	05/04/2020	138126	INSTRUMENTALIST AWARDS LLC	$259.33
	470793	05/04/2020	131157	CHRISTINE A JANOVEC-POEHLMAN	$54.06

Millard Public Schools Check Register Prepared for the Board Meeting for May 4, 2020

Fund	Check Number	Check Date	Vendor Number	Vendor Name	Transaction Amount
01	470794	05/04/2020	133037	JENSEN TIRE & AUTO #15	$500.25
	470795	05/04/2020	083400	TYCO FIRE & SECURITY MANAGEMENT INC	$7,650.00
	470796	05/04/2020	054500	JOHNSON HARDWARE CO LLC	$376.92
	470797	05/04/2020	135373	LINDA K JOHNSON	$13.92
	470798	05/04/2020	138713	LAURIE E JONES	$32.33
	470799	05/04/2020	142898	JUST FOR KIDS THERAPY INC	$134.00
	470800	05/04/2020	132265	CATHERINE A KEISER	$21.97
	470801	05/04/2020	134801	JULIE B KEMP	$315.75
	470802	05/04/2020	140091	KENT J KINGSTON	$33.29
	470804	05/04/2020	136285	MICHELLE L KRAFT	$41.52
	470805	05/04/2020	141957	MELINDA S KRAUSE	$26.85
	470806	05/04/2020	135814	KELLI K KRAUSE	$224.19
	470807	05/04/2020	141946	BETHANY S LACOSSE	$36.34
	470809	05/04/2020	135257	LANGUAGE LINE SERVICES INC	$1,118.70
	470810	05/04/2020	140159	STEPHEN J LERNER	$148.35
	470811	05/04/2020	137345	BONNIE K LEVINGER	$52.79
	470812	05/04/2020	137944	LIBRA INDUSTRIES	$659.50
	470813	05/04/2020	142599	LILLETHORUP PRODUCTIONS INC	$1,362.50
	470814	05/04/2020	133643	JODY C LINDQUIST	$113.28
	470815	05/04/2020	131397	LOWE'S HOME CENTERS INC	$108.73
	470816	05/04/2020	131586	LYMM CONSTRUCTION INC	$9,925.00
	470817	05/04/2020	108106	LEANNA MACDONALD	$1,054.50
	470818	05/04/2020	099321	MACKIN BOOK CO	$1,090.01
	470819	05/04/2020	133505	SUSAN N MARLATT	$647.46
	470820	05/04/2020	108052	MAX I WALKER UNIFORM & APPAREL	$133.88
	470821	05/04/2020	138341	MAXIM HEALTHCARE SERVICES HOLDINGS	$22,904.00
	470822	05/04/2020	137752	KIRSHELL M MCCLANNAN	$13.99
	470823	05/04/2020	142889	SHANNON L MCGOWEN	$10.35

Millard Public Schools Check Register Prepared for the Board Meeting for May 4, 2020

Fund	Check Number	Check Date	Vendor Number	Vendor Name	Transaction Amount
01	470824	05/04/2020	137014	RYE L MCINTOSH	$74.06
	470825	05/04/2020	141523	KELLI M MCWILLIAMS	$15.70
	470826	05/04/2020	064260	MECHANICAL SALES INC.	$1,469.00
	470827	05/04/2020	136470	CHAD M MEISGEIER	$94.42
	470828	05/04/2020	064600	METAL DOORS & HARDWARE COMPANY INC	$953.40
	470830	05/04/2020	133403	AMERICAN NATIONAL BANK	$13,624.91
	470833	05/04/2020	064800	METRO UTILITIES DISTRICT OF OMAHA	$68,897.70
	470834	05/04/2020	139339	SPORTS FACILITY MAINTENANCE LLC	$19,271.00
	470835	05/04/2020	101068	MIDWEST BOX COMPANY	$7,200.00
	470836	05/04/2020	064950	MIDWEST METAL WORKS INC	$105.00
	470837	05/04/2020	142779	MILESTONES DISABILITY SERVICES INC	$3,005.24
	470838	05/04/2020	065443	MILLARD WEST HIGH SCHOOL	$383.00
	470839	05/04/2020	131328	MILLER ELECTRIC COMPANY	$497.00
	470840	05/04/2020	141026	JASON MITERA	$14.75
	470841	05/04/2020	142525	MICHAEL J MONTEMARANO	$37.43
	470842	05/04/2020	140990	LAURA M MORRIS	$115.24
	470843	05/04/2020	142908	SCOTT M MORRIS	$129.28
	470845	05/04/2020	137052	DEVONYE J MULLINS	$33.70
	470847	05/04/2020	138229	BRETT M NAVIN	$578.20
	470848	05/04/2020	136954	NEBRASKA CHILD SUPPORT PAYMENT CTR	$35.00
	470849	05/04/2020	109843	NEXTEL PARTNERS INC	$3,983.60
	470851	05/04/2020	142353	ASHLEY B NODGAARD	$39.27
	470852	05/04/2020	131594	CONNIE J NOVACEK	$34.96
	470853	05/04/2020	100013	OFFICE DEPOT 84133510	$772.55
	470854	05/04/2020	070245	OHARCO DISTRIBUTORS	$542.00
	470855	05/04/2020	132778	MELANIE L OLSON	$49.68
	470856	05/04/2020	099658	OMAHA CHILDRENS MUSEUM	$1,035.00
	470857	05/04/2020	070800	OMAHA PUBLIC POWER DISTRICT	$284,674.22

Millard Public Schools Check Register Prepared for the Board Meeting for May 4, 2020

Fund	Check Number	Check Date	Vendor Number	Vendor Name	Transaction Amount
01	470858	05/04/2020	071040	OMAHA WINNELSON COMPANY	$893.90
	470859	05/04/2020	140402	OMNI FINANCIAL GROUP INC	$785.00
	470860	05/04/2020	133850	ONE SOURCE	$1,752.50
	470861	05/04/2020	107193	OTIS ELEVATOR COMPANY	$1,475.11
	470862	05/04/2020	133368	KELLY R O'TOOLE	$32.43
	470863	05/04/2020	134428	ELIZABETH A PACHTA	$122.71
	470864	05/04/2020	137015	GEORGE M PARKER	$20.13
	470865	05/04/2020	071760	PATTON EQUIPMENT COMPANY INC	$383.31
	470866	05/04/2020	107783	HEIDI T PENKE	$264.67
	470867	05/04/2020	133390	HEATHER C PHIPPS	$15.25
	470868	05/04/2020	073040	PITNEY BOWES PRESORT SERVICES INC	$10,000.00
	470870	05/04/2020	131835	PRAIRIE MECHANICAL CORP	$20,261.51
	470871	05/04/2020	134598	PRIME COMMUNICATIONS INC	$137,977.79
	470872	05/04/2020	136035	MICHAEL T QUINT	$179.40
	470873	05/04/2020	109810	BETHANY B RAY	$89.40
	470874	05/04/2020	135511	MICHELE A REAVES	$150.00
	470875	05/04/2020	142091	KWABENA S REID	($35.00)
	470876	05/04/2020	133770	DIANE E REINERS	$15.30
	470878	05/04/2020	142871	RIVERSIDE ASSESSMENTS LLC	$18,705.00
	470880	05/04/2020	139359	DISTRIBUTED WEBSITE CORPORATION	$595.00
	470881	05/04/2020	081725	KIMBERLEY K SAUM-MILLS	$552.70
	470882	05/04/2020	133389	RYAN D SAUNDERS	$1,477.35
	470883	05/04/2020	138274	RONALD P SCHINSTOCK	$5.98
	470884	05/04/2020	137913	BRENDA L SCHMIDT	$252.00
	470885	05/04/2020	130044	SCHOOL SOCIAL WORK ASSN OF NE	$40.00
	470886	05/04/2020	137416	NICHOLE E SCHWAB	$14.32
	470887	05/04/2020	134567	KAYE M SCHWEIGERT	$170.03
	470888	05/04/2020	082905	KIMBERLY A SECORA	$7.76

Millard Public Schools Check Register Prepared for the Board Meeting for May 4, 2020

Fund	Check Number	Check Date	Vendor Number	Vendor Name	Transaction Amount
01	470889	05/04/2020	140383	SENTRY INSURANCE, A MUTUAL COMPANY	$92,779.32
	470890	05/04/2020	140071	MEGAN K SEPTAK	$465.00
	470891	05/04/2020	143104	SHI INTERNATIONAL CORP	$35,750.00
	470892	05/04/2020	137146	DONNA M SMITH	$104.97
	470893	05/04/2020	140068	LANCE M SMITH	$672.01
	470894	05/04/2020	101476	SODEXO INC & AFFILIATES	$220,077.66
	470895	05/04/2020	136249	SPECIFIED DESIGN CONSULTANTS INC	$425.71
	470897	05/04/2020	136316	EVA M STALLING	$8.17
	470898	05/04/2020	142102	STERLING COMPUTERS CORPORATION	$2,606.46
	470899	05/04/2020	139843	STUDENT TRANSPORATION NEBRASKA INC	$349,798.08
	470900	05/04/2020	133300	TALX UC EXPRESS	$956.01
	470901	05/04/2020	140513	ANNA M THOMA	$2,372.56
	470902	05/04/2020	135006	STEVE D THRONE	$221.98
	470903	05/04/2020	142960	TIGER SUPPLIES INC	$37.94
	470904	05/04/2020	141524	SONIA E TIPP	$134.97
	470905	05/04/2020	136578	PEGGI S TOMLINSON	$51.92
	470906	05/04/2020	107719	KIMBERLY P TRISLER	$24.38
	470907	05/04/2020	106493	TRITZ PLUMBING, INC.	$19,275.29
	470908	05/04/2020	143160	SETH B TURMAN	$120.75
	470909	05/04/2020	131819	JEAN R UBBELOHDE	$290.00
	470910	05/04/2020	142309	UNANIMOUS INC	$16,160.00
	470912	05/04/2020	068834	UNIVERSITY OF NEBRASKA-LINCOLN	$2,793.91
	470914	05/04/2020	068840	UNIVERSITY OF NEBRASKA AT OMAHA	$62,000.00
	470915	05/04/2020	139797	US BANK NATIONAL ASSOCIATION	$100.00
	470916	05/04/2020	138046	AUTO LUBE INC	$338.99
	470917	05/04/2020	143061	JUSTIN J VANDERVORT	$177.50
	470918	05/04/2020	083340	VERNE SIMMONDS COMPANY	$187.81
	470919	05/04/2020	131112	LINDA M WALTERS	$17.37

Millard Public Schools Check Register Prepared for the Board Meeting for May 4, 2020

Fund	Check Number	Check Date	Vendor Number	Vendor Name	Transaction Amount
01	470920	05/04/2020	133438	HEIDI J WEAVER	$266.86
	470921	05/04/2020	141464	ANTHONY J WEERS	$192.69
	470922	05/04/2020	131717	DIANE M WEIER	$63.25
	470923	05/04/2020	139185	WEST OMAHA WINSUPPLY CO	$6,023.55
	470924	05/04/2020	136909	WHEELER CONTRACTING INC	$520.00
	470925	05/04/2020	139463	TAMARA WILT	$70.47
	470926	05/04/2020	137180	LAURA P WIRTH	$20.53
	470927	05/04/2020	142202	WOODHOUSE LINCOLN MERCURY INC	$2,284.59
	470928	05/04/2020	136943	MICHAELA M WRAGGE	$260.36
	470929	05/04/2020	096200	YOUNG & WHITE	$27,846.00
	470931	05/04/2020	135996	YRC INC	$200.00
	470933	05/04/2020	142269	WHC NE LLC	$9,477.91
	470935	05/04/2020	142174	SIOUXLAND TURF PRODUCTS INC	$8,768.50
	470936	05/04/2020	137020	CHAD R ZIMMERMAN	$544.58
	470937	05/04/2020	136855	PAUL R ZOHLEN	$78.66
	470938	05/04/2020	135647	LACHELLE L ZUHLKE	$75.10
	E102100	05/04/2020	136961	ABANTE LLC	$668.98
	E102101	05/04/2020	108351	AIRGAS INC	$150.48
	E102103	05/04/2020	102832	AOI	$2,183.28
	E102104	05/04/2020	106436	AQUA-CHEM INC	$1,506.50
	E102105	05/04/2020	102727	B & H PHOTO	$109.35
	E102106	05/04/2020	135991	BAKER DISTRIBUTING CO LLC	$781.52
	E102107	05/04/2020	017900	BARCO MUNICIPAL PRODUCTS, INC.	$649.96
	E102109	05/04/2020	019111	BISHOP BUSINESS EQUIPMENT	$30,037.14
	E102110	05/04/2020	099220	DICK BLICK CO	$6.50
	E102111	05/04/2020	140156	CAMBIUM DATA INC	$6,410.00
	E102112	05/04/2020	090270	UNITED DISTRIBUTORS INC	$3,540.60
	E102113	05/04/2020	136574	CONTROL DEPOT INC	$1,555.08

Millard Public Schools Check Register Prepared for the Board Meeting for May 4, 2020

Fund	Check Number	Check Date	Vendor Number	Vendor Name	Transaction Amount
01	E102114	05/04/2020	026057	CONTROL MASTERS INC	$7,585.51
	E102115	05/04/2020	140678	SKL ENTERPRISES LLC	$450.00
	E102116	05/04/2020	109063	CRISIS PREVENTION INSTITUTE INC	$300.00
	E102117	05/04/2020	033473	DIETZE MUSIC HOUSE INC	$955.06
	E102119	05/04/2020	038023	EGAN SUPPLY COMPANY	$888.60
	E102120	05/04/2020	038100	CONSOLIDATED ELECTRICAL DISTR INC	$1,372.03
	E102121	05/04/2020	131927	RLB ENTERPRISE LLC	$1,542.32
	E102123	05/04/2020	040537	WOLSELEY INVESTMENTS INC	$5,160.70
	E102124	05/04/2020	133919	FILTER SHOP INC	$2,380.06
	E102125	05/04/2020	041100	FOLLETT SCHOOL SOLUTIONS INC	$7,484.63
	E102126	05/04/2020	140791	FRONTLINE PRIVATE SECURITY LLC	$545.00
	E102127	05/04/2020	048786	HILLYARD INC	$2,270.08
	E102128	05/04/2020	100928	J W PEPPER & SON INC.	$535.99
	E102129	05/04/2020	054630	JOHNSTONE SUPPLY	$2,204.38
	E102130	05/04/2020	107192	FLYNN INNOVATIONS LLC	$312.00
	E102131	05/04/2020	135156	LAWSON PRODUCTS INC	$5,577.24
	E102132	05/04/2020	059470	LIEN TERMITE & PEST CONTROL INC	$114.00
	E102133	05/04/2020	060023	NEBRASKA SPORTS INDUSTRIES INC.	$309.54
	E102134	05/04/2020	060111	LOVELESS MACHINE & GRINDING SVC INC	$89.40
	E102136	05/04/2020	137947	MECHANICAL SALES PARTS INC	$2,037.00
	E102137	05/04/2020	102493	MICHAEL TODD & CO. INC.	$800.80
	E102138	05/04/2020	064980	MIDWEST SOUND & LIGHTING INC	$242.24
	E102139	05/04/2020	065810	MIRACLE RECREATION EQUIPMENT CO	$974.00
	E102140	05/04/2020	107539	MUELLER ROBAK LLC	$13,750.00
	E102142	05/04/2020	068334	NEBRASKA AIR FILTER INC	$5,935.12
	E102143	05/04/2020	141960	NOODLETOOLS INC	$2,615.00
	E102144	05/04/2020	134725	OMAHA CASING CO INC	$552.00
	E102145	05/04/2020	078420	RAWSON & SONS ROOFING, INC.	$4,078.00

Millard Public Schools Check Register Prepared for the Board Meeting for May 4, 2020

Fund	Check Number	Check Date	Vendor Number	Vendor Name	Transaction Amount
01	E102146	05/04/2020	137911	RIVER CITY GLASS LLC	$52.94
	E102147	05/04/2020	083175	SHEPPARD'S BUSINESS INTERIORS	$16,373.65
	E102149	05/04/2020	088709	AMERICAN EAGLE COMPANY INC	$408.25
	E102150	05/04/2020	132974	TEACHING STRATEGIES LLC	$1,800.00
	E102151	05/04/2020	133969	TENNANT SALES & SERVICE COMPANY	$949.23
	E102153	05/04/2020	138304	TIME MANAGEMENT SYSTEMS	$15,397.00
	E102154	05/04/2020	138047	AUTO PROS OF MILLARD INC	$2,845.91
	E102155	05/04/2020	090214	UNITED ELECTRIC SUPPLY CO INC	$721.20
	E102156	05/04/2020	138759	VIA INC	$3,733.97
	E102157	05/04/2020	092323	VIRCO INC	$1,774.50
	E102159	05/04/2020	092600	VOSS ELECTRIC CO	$9,100.80
	E102160	05/04/2020	093650	VWR INTERNATIONAL LLC	$80.18
	E102161	05/04/2020	139738	WASTE MANAGEMENT OF ILLINOIS INC	$15,230.66
	E102162	05/04/2020	093765	WATER ENGINEERING, INC.	$1,650.00
01 - Total					**$1,939,552.68**
02	26707	05/04/2020	106893	WICHITA WATER CONDITIONING INC	$7.67
	26708	05/04/2020	100013	OFFICE DEPOT 84133510	$79.96
02 - Total					**$87.63**
06	470705	05/04/2020	133480	BERINGER CIACCIO DENNELL MABREY	$29,184.13
	470718	05/04/2020	133970	CCS PRESENTATION SYSTEMS	$82,050.99
	470844	05/04/2020	134532	MORRISSEY ENGINEERING INC	$2,312.50
	470891	05/04/2020	143104	SHI INTERNATIONAL CORP	$11,368.42
	470896	05/04/2020	130500	SPECPRO INC	$20,998.00
	E102105	05/04/2020	102727	B & H PHOTO	$26,638.40
	E102145	05/04/2020	078420	RAWSON & SONS ROOFING, INC.	$25,263.00
	E102158	05/04/2020	141363	PATTI BANKS ASSOCIATES LLC	$3,137.50
06 - Total					**$200,952.94**
07	470743	05/04/2020	107232	DLR GROUP INC	$4,500.00

Millard Public Schools Check Register Prepared for the Board Meeting for May 4, 2020

Fund	Check Number	Check Date	Vendor Number	Vendor Name	Transaction Amount
07	470808	05/04/2020	058775	LAMP RYNEARSON ASSOCIATES INC	$21,750.00
	E102118	05/04/2020	139946	DOWNS ELECTRIC INC	$24,032.00
	E102158	05/04/2020	141363	PATTI BANKS ASSOCIATES LLC	$495.00
07 - Total					**$50,777.00**
11	470754	05/04/2020	131007	ELMAN & CO INC	$344.00
	470757	05/04/2020	141762	HELEN M EVANS	$108.56
	470771	05/04/2020	141551	LAURA S HIGHTOWER	$201.25
	470781	05/04/2020	137050	ANGELIA M HUGHES	$42.03
	470788	05/04/2020	143157	TOPILTZIN ALARCON GOMEZ	$350.00
	470803	05/04/2020	139364	AMY S KOPANIC	$182.78
	470850	05/04/2020	142652	LANNA NGUYEN	$60.00
	470869	05/04/2020	142080	KRISTIN PLUHACEK	$1,000.00
	470899	05/04/2020	139843	STUDENT TRANSPORATION NEBRASKA INC	$285.43
	470911	05/04/2020	100923	UNIVERSITY OF NEBRASKA LINCOLN	$60.00
	470913	05/04/2020	068875	UNIVERSITY OF NEBRASKA MED CENTER	$1,875.00
	470930	05/04/2020	135890	YOUTH FRONTIERS INC	$1,500.00
	470934	05/04/2020	136452	JESSICA N ZAVADIL-MANLEY	$1,890.00
	E102135	05/04/2020	059560	MATHESON TRI-GAS INC	$5,550.00
	E102152	05/04/2020	140681	TEXTBOOK WAREHOUSE LLC	$2,458.50
11 - Total					**$15,907.55**
14	470698	05/04/2020	097000	AETNA LIFE INSURANCE CO	$182,587.62
14 - Total					**$182,587.62**
17	470697	05/04/2020	010040	A & D TECHNICAL SUPPLY CO INC	$83.73
	470705	05/04/2020	133480	BERINGER CIACCIO DENNELL MABREY	$24,175.38
	470718	05/04/2020	133970	CCS PRESENTATION SYSTEMS	$631.52
	470719	05/04/2020	051572	CENGAGE LEARNING	$0.00
	470734	05/04/2020	131003	DAILY RECORD	$18.50
	470808	05/04/2020	058775	LAMP RYNEARSON ASSOCIATES INC	$9,300.00

Millard Public Schools Check Register Prepared for the Board Meeting for May 4, 2020

Fund	Check Number	Check Date	Vendor Number	Vendor Name	Transaction Amount
17	470839	05/04/2020	131328	MILLER ELECTRIC COMPANY	$674.00
	470846	05/04/2020	142914	MARATHON REPROGRAPHICS INC	$330.00
	470877	05/04/2020	139853	RENZE DISPLAY CO	$3,469.53
	470907	05/04/2020	106493	TRITZ PLUMBING, INC.	$724.00
	470939	05/04/2020	109036	GALE/CENGAGE LEARNING	$4,640.63
	E102103	05/04/2020	102832	AOI	$1,514.84
	E102117	05/04/2020	033473	DIETZE MUSIC HOUSE INC	$720.00
	E102147	05/04/2020	083175	SHEPPARD'S BUSINESS INTERIORS	$167.82
	E102148	05/04/2020	140803	SUPERIOR LIGHTING INC	$1,050.00
17 - Total					**$47,499.95**
50	470718	05/04/2020	133970	CCS PRESENTATION SYSTEMS	$1,540.62
	470751	05/04/2020	140941	INDEPENDENT INVESTORS INC	$2,160.00
	470758	05/04/2020	130731	FIRST WIRELESS INC	$1,869.00
	470792	05/04/2020	138126	INSTRUMENTALIST AWARDS LLC	$488.67
	470875	05/04/2020	142091	KWABENA S REID	$70.00
	470879	05/04/2020	142171	ALEXIS R ROBSON	$11,684.60
	E102102	05/04/2020	011051	ALL MAKES OFFICE EQUIPMENT	$884.50
	E102108	05/04/2020	099646	BARNES AND NOBLE BOOKSTORE	$187.02
	E102109	05/04/2020	019111	BISHOP BUSINESS EQUIPMENT	$50.00
50 - Total					**$18,934.41**
99	470879	05/04/2020	142171	ALEXIS R ROBSON	($432.00)
99 - Total					**($432.00)**
Overall - Total					**$2,455,867.78**

AGENDA SUMMARY SHEET

Agenda Item:	Second Reading and Approval of Policy 4130: Human Resources – Examinations
Meeting Date:	May 4, 2020
Background/ Description:	Following District guidelines to review Policies every seven years. Minor change to cleanup language based on changes to regulation. This Policy has been reviewed by the District's legal counsel.
Action Desired:	Approval of Policy 4130: Human Resources – Examinations
Policy / Strategic Plan Reference:	N/A
Responsible Person(s):	Dr. Kevin Chick, Associate Superintendent of Human Resources Jake Curtiss, Director of Employee Relations

Superintendent's Signature:

Human Resources

Examinations 4130

The Millard School District may make pre-employment inquiries into the ability and qualifications of an applicant to perform job-related functions as required by law.

Legal Reference: 92 NAC 91

Related Rules: 4130.1, 4130.2

Policy Adopted: September 5, 1978
Revised: August 3, 1992; September 20, 1993; December 3, 2001
May 4, 2020
Reaffirmed: February 16, 2009; October 19, 2015

Millard Public Schools
Omaha, NE

AGENDA SUMMARY SHEET

Agenda Item:	Approval of Rule 4130.1: Human Resources – Health Examinations
Meeting Date:	May 4, 2020
Background/ Description:	Following District guidelines to review Board Rule every seven years. Minor change to cleanup language based on changes to regulation. This Rule has been reviewed by the District's legal counsel.
Action Desired:	Approval of Rule 4130.1: Human Resources – Health Examinations
Policy / Strategic Plan Reference:	N/A
Responsible Person(s):	Dr. Kevin Chick, Associate Superintendent of Human Resources Jake Curtiss, Director of Employee Relations

Superintendent's Signature:

Human Resources

Health Examinations 4130.1

The District may require a medical examination after an offer of employment has been made to a job applicant and prior to the commencement of the employment duties of such applicant, and may condition an offer of employment on the results of such examination and receipt of a valid medical examination certificate when required by law, provided:

I. All entering employees in the same job category are subjected to such an examination regardless of disability;

II. Information obtained regarding the medical condition or history of the applicant is collected and maintained on separate forms and in separate medical files and is treated as a confidential medical record, except that --

A. Supervisors may be informed regarding necessary restrictions on the work or duties of the employee and necessary accommodations;

B. First aid and safety personnel may be informed, when appropriate, if the disability might require emergency treatment; and

C. Government officials investigating compliance with the Americans with Disabilities Act shall be provided relevant information on request; and

III. The results of such examination and valid medical examination certificate ~~are~~ shall be maintained and used only in accordance with Nebraska Department of Education Rule 91 and the Americans with Disabilities Act.

The District shall not otherwise require a medical examination and shall not make inquiries of an employee as to whether such employee is an individual with a disability or as to the nature or severity of the disability, unless such examination or inquiry is shown to be job-related and consistent with business necessity.

Legal Reference: Americans with Disabilities Act; 92 NAC 91

Related Policy: 4130

Rule Approved: September 20, 1993
Revised: December 3, 2001, May 4, 2020
Reaffirmed: February 16, 2009, October 19, 2015

Millard Public Schools
Omaha, Nebraska

AGENDA SUMMARY SHEET

Agenda Item:	Approval of Rule 4130.2: Human Resources – Examinations - Bus or Small Vehicle Drivers
Meeting Date:	May 4, 2020
Background/ Description:	Following District guidelines to review Board Rule every seven years. Minor change to cleanup language based on changes to regulation. This Rule has been reviewed by the District's legal counsel.
Action Desired:	Approval of Rule 4130.2: Human Resources – Examinations - Bus or Small Vehicle Drivers
Policy / Strategic Plan Reference:	N/A
Responsible Person(s):	Dr. Kevin Chick, Associate Superintendent of Human Resources Jake Curtiss, Director of Employee Relations

Superintendent's Signature:

Human Resources

Examinations - Bus or Small Vehicle Drivers 4130.2

Before ~~the opening of a school term or before~~ operating a school bus or small vehicle, persons operating a school bus or small vehicle shall ~~each year~~ submit himself or herself to (a) an examination to be conducted by a driver's license examiner of the Department of Motor Vehicles to determine his or her qualifications to operate such bus or small vehicle; and (b) an examination by a licensed physician to determine whether or not he or she meets the physical and mental standards established pursuant to state law. The cost of such physical examination shall be paid by the District. The school bus or small vehicle operator shall furnish the ~~Director of~~ Transportation Manager of the Millard School District and the Director of Motor Vehicles a written report of each such examination on standard forms prescribed by the State Department of Education, signed by the person conducting the same, and a valid medical examination certificate showing that he or she is qualified to operate a school bus or small vehicle and that he or she meets the physical and mental standards. Such ~~permit~~ certificate shall be valid for not more than two (2) years and must be received by the ~~Director of~~ Transportation Manager of the Millard School District prior to the school bus or small vehicle operator being permitted to transport students or staff. A valid medical examination certificate shall be retained and be on file with the District. If the Director of Motor Vehicles issues the special school bus or small vehicle operator's permit, the holder of such permit shall have it on his or her person at all times while operating a school bus or small vehicle.

Related Policy: 4130

Legal Reference: Neb. Rev. Stat. § 79-608; 92 NAC 91

Policy Adopted: September 20, 1993
Revised: December 3, 2001, May 4, 2020
Reaffirmed: February 16, 2009, October 19, 2015

Millard Public Schools
Omaha, Nebraska

AGENDA SUMMARY SHEET

Agenda Item:	Reaffirm Policy 6750: Curriculum, Instruction, and Assessment - Student Fees
Meeting Date:	May 4, 2020
Background/ Description:	This Policy is due for annual review.
Action Desired:	Reaffirm Policy 6750: Curriculum, Instruction, and Assessment - Student Fees
Policy / Strategic Plan Reference:	6750
Responsible Person(s):	Nolan Beyer, Exec. Director of Activities, Athletics, & External Affairs

Superintendent's Signature:

Curriculum, Instruction, and Assessment

Student Fees 6750

The District may require and collect fees or other funds from or on behalf of students or require students to furnish or provide materials, supplies, equipment, or attire consistent with the Public Elementary and Secondary Student Fee Authorization Act.

The Superintendent (or designee) shall promulgate the rules and/or procedures necessary for implementation of this policy. For purposes of Neb. Rev. Stat. § 79-2,133 and § 79-2,134, such rules and/or procedures, when adopted or approved, shall be incorporated in their entirety into this policy by this reference.

Annually, the school board shall hold a public hearing at a regular or special meeting of the Board on a proposed student fee policy, following a review of the amount of money collected from students pursuant to, and the use of waivers provided in, the student fee policy for the prior school year. The student fee policy shall be adopted by a majority vote of the school board and shall be published in the student handbook. The Board shall provide a copy of the student handbook to every student at no cost to the student.

Legal References: Neb. Rev. Stat. § 79-2,125 *et seq*.

Related Policies & Rules: 6750.1

Policy Adopted: July 15, 2002
Reaffirmed: May 17, 2004; June 6, 2005; April 17, 2006; April 21, 2008 April 13, 2009; February 15, 2010, May 1, 2017, May 4, 2020
Revised: April 23, 2007

Millard Public Schools
Omaha Nebraska

AGENDA SUMMARY SHEET

Agenda Item: Approval of Rule 6750.1: Curriculum, Instruction, and Assessment - Student Fees

Meeting Date: May 4, 2020

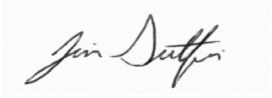
Background/ Description: Recommendations include changes to elementary, middle, and high school meal prices and MCC tuition.

Action Desired: Approval of Rule 6750.1: Curriculum, Instruction, and Assessment - Student Fees

Policy / Strategic Plan Reference:

Responsible Person(s): Nolan Beyer, Exec. Director of Activities, Athletics, & External Affairs

Superintendent's Signature:



Curriculum, Instruction, and Assessment - Student Fees 6750.1

Pursuant to Policy 6750 and Neb. Rev. Stat. §79-2,135 *et seq*., the District may, and hereby does, require and collect fees or other funds from or on behalf of District students or require District students to furnish or provide, supplies, equipment, or attire as provided for herein below.

I. Elementary School Fees:

A. Extracurricular Activities*

1. All Clubs: Students pay a fee of up to $30 (but not to exceed actual cost of conducting the club activities) for membership and activities in each club.

2. All Clubs: Students pay a fee of up to $15 (but not to exceed actual cost) for screen-printed club t-shirt.

3. School will not fund competition beyond the state level.

4. Choir: Students pay a fee of up to $15 (but not to exceed actual cost) for screen-printed choir t-shirt.

B. Special Transportation

1. §79-241 (option enrollment students): n/a

2. §79-605 (tuition students): n/a

3. §79-611 (students within 4 miles and open enrollment students): n/a

C. Copies of Files/Records

1. Students pay 10 cents per page.

D. Lost/Damaged Property

1. Students pay for repair or replacement cost of property.

E. Before/After School

1. Mini-Classes: Students pay up to $60 per class, including materials (6-8 sessions, but not to exceed actual cost).

F. Summer/Night School*

1. District Summer School: Students pay up to $155 (for no more than up to 3 instructional hours per day for 12 days in June).

2. Building Level Summer School: Students pay up to $4 per hour, including materials.

G. Breakfast/Lunch Programs*

1. Students pay for breakfast (i.e., current cost of breakfast $~~1.45~~1.50).

2. Students pay for lunch (i.e., current cost of lunch $~~2.75~~2.85).

3. Students pay for dinner (i.e., current cost of dinner $~~2.95~~3.10)

H. Non-Specialized Attire

1. PE: Students provide tennis shoes.

2. Art: Students provide a paint shirt.

I. Musical Instruments (Optional Courses, Non-Extracurricular) *

1. Band & Strings: Students provide their own instruments.

**The requirements marked with an asterisk (*) may be waived for students who qualify for free or reduced-price lunches.*

II. Middle School Fees:

A. Extracurricular Activities*

1. Montessori Immersion Experiences: Students pay up to a total of $ 500 (but not to exceed actual cost) for up to four trips.

2. School will not fund competition beyond the state level.

3. Sixth Grade Outdoor Education: Students pay up to $50.

4. All Clubs: Students pay $0 to $140 (not to exceed the cost of conducting club activities) for membership and activities in each club.

5. Athletics: Students pay a $50 participation fee for football. Students pay a $40 participation fee for interscholastic sports. Students pay a $25 participation fee for each intramural sport.

6. All Sports: Students provide elastic waist shorts, t-shirt, socks, shoes and cold weather attire as needed.

7. Football: Students provide appropriate athletic shoes.

8. Volleyball: Students provide appropriate athletic shoes for use indoors only.

9. Basketball: Students provide appropriate athletic shoes for use indoors only.

10. Wrestling: Students provide appropriate athletic shoes for use indoors only.

11. Track: Students provide appropriate athletic shoes.

12. Other Requirements: Students who participate in athletics and/or the Cross Country Club are required to have a sports physical (except for intramural basketball/volleyball) and must be covered by health insurance. Health insurance is available through private carriers, or, for those who qualify, the State of Nebraska.

B. Spectator Admission/Transportation

1. Students pay an admission fee to activities, not to exceed $10 per person per event. The site administrator shall determine the admission charges to each “home” middle school event.

C. Special Transportation

1. §79-241 (option enrollment students): n/a

2. §79-605 (tuition students): n/a

3. §79-611 (students within 4 miles and open enrollment students): Transportation for students whose residences are two miles or more from school is provided through Student Transportation of America at $1.50 per trip (with the balance of the cost paid by the District).

D. Copies of Files/Records

1. Students pay 10 cents per page.

E. Before/After School

1. Mini-Classes: Students pay up to $40 per class, including materials (6-8 sessions, but not to exceed actual cost).

F. Lost/Damaged Property

1. Students pay for repair or replacement of property.

G. Summer/Night School*

1. District Summer School: Students pay up to $155 (for no more than 3 instructional hours per day for 12 days – one course); $400 (for no more than 6 instructional hours per day for 12 days – one course); $134 for mini-courses (no more than 3 instructional hours per day for 4 days for each mini-course.)

2. Middle School After-School Program: Students pay up to $30 (for up to one hour per day for one week); up to $60 (for 2 to 3 hours per day for one week).

3. Summer Opportunities instruction for students – no more than $150 (per opportunity per student).

4. Transition Programs: $10.

H. Breakfast/Lunch Programs*

1. Students pay for breakfast (i.e., current cost of breakfast $~~1.65~~1.70).

2. Students pay for lunch (i.e., current cost of lunch $~~2.95~~3.05). A la carte selections vary in price.

3. Students pay for dinner (i.e., current cost of dinner $~~2.95~~3.05).

I. Non-Specialized Attire

1. PE: Students provide athletic shoes, elastic waist shorts, t-shirt, and cold weather attire as needed.

J. Musical Instruments (Optional, Non-Extracurricular) *

1. Band & Strings: Students provide their own instruments.

K. Music Items (Extracurricular)*

1. Swing Choir & Jazz Band: Students provide their own instruments and attire. Required performance attire will not exceed a cost of $125.

* *The requirements marked with an asterisk (*) may be waived for students who qualify for free or reduced-price lunches.*

III. High School Fees

A. Extracurricular Activities*

1. All Clubs: Students pay up to $800 (not to exceed the cost of conducting club activities) for membership and activities in each club.

2. All Activities: Students pay a $65 fee for participation in athletics and activities governed by the Nebraska School Activities Association (fee includes an Athletic Admission Ticket for "home" school events). (Journalism, Concert Choir, and Orchestra are excluded.)

3. Curriculum Related Activities (i.e., Marching Band, DECA, SkillsUSA, HOSA, FCCLA, Debate, Forensics, and FCS): The District does not fund competitive activities for students beyond the state level. After approval from principal or designee, fundraising and/or donations must cover the cost of competition beyond the state level.

4. Graduation Materials: Students purchase selected cap and gown.

5. Drama Club: Students pay $25 for supplies, materials, and services.

6. Athletics, Cheerleading and Dance: Students are required to have a physical and must be covered by health insurance to participate. (Health insurance is available through private carriers, or, for those who qualify, the State of Nebraska.)

7. All Athletics: Students provide elastic waist shorts, t-shirt, socks, shoes, towels and cold weather attire as needed.

8. Football: Students provide appropriate athletic shoes and practice jersey.

9. Volleyball: Students provide appropriate athletic shoes and knee pads for use indoors only.

10. Basketball: Students provide appropriate athletic shoes for use indoors only and practice jersey.

11. Cross Country: Students provide appropriate athletic shoes.

12. Tennis: Students provide tennis racquet and appropriate athletic shoes and pay indoor court fees up to $30 per season.

13. Golf: Students provide golf clubs, golf bag, golf balls, and appropriate athletic shoes and pay range or green fees up to $30 per season.

14. Softball: Students provide softball glove, bat appropriate athletic shoes, and colored socks.

15. Baseball: Students provide baseball glove, bat, appropriate athletic shoes, and colored socks and pay indoor facilities fees up to $30 per season.

16. Soccer: Students provide shin guards, appropriate athletic shoes, and colored socks and pay indoor facilities fees up to $30 per season.

17. Wrestling: Students provide appropriate athletic shoes for use indoors only.

18. Swimming: Students provide swimsuits, towels, goggles and fins.

19. Track: Students provide appropriate athletic shoes.

20. Dance Team/Cheerleading/Show Choir: Students purchase selected uniforms and pay fees to a summer camp.

21. Intramurals: Students pay intramural fees, not to exceed $25 (per intramural activity, per person), for intramural participation. The site administrator shall determine the fee for each intramural activity.

22. Unified Sports: Students provide appropriate athletic shoes.

B. Spectator Admission/Transportation

1. Students pay admission fees, not to exceed $30 (per event, per person), to school activities. The site administrator shall determine the admission charges to each “home” high school event.

2. Athletic Admission Ticket: Students pay $40 for admission to all “home” high school athletic events (non-tournament competitions).

C. Post-Secondary Education

1. Post-Secondary Education costs: Students pay the cost of tuition and other fees only associated with obtaining credits from a post-secondary educational institution if the student chooses to apply for post-secondary education credit (i.e., ~~$37~~38 per credit for courses that require a Metropolitan Community college (MCC) instructor, ~~$48~~50 per Early College course through MCC, $250 per course at University of Nebraska–Omaha

(UNO). University of Nebraska High School $200 per five credit course and $50 administrative fee per course (online classes).

2. Advanced Placement Exams Fees: Students may pay the cost of each exam (i.e., currently $94 per exam) pending other available resources.

3. International Baccalaureate Exams Fees: Students may pay for the cost of exams (i.e., currently approximately $850 for two years of testing). Students pay IB Registration Fees (currently $160) pending other available resources.

D. Special Transportation

1. §79-241 (option enrollment students): n/a

2. §79-605 (tuition students): n/a

3. §79-611 (students within 4 miles and open enrollment students): n/a

E. Copies of Files/Records

1. Transcript fee: Students pay $5.

2. Other Requests: Students pay 10 cents per page.

F. Lost/Damaged Property

1. Students pay for cost of repair or replacement of property.

G. Before/After School

1. Mini-Classes: Students pay up to $40 per class, including materials (6-8 sessions, but not to exceed actual cost).

H. Summer/Night School*

1. District Summer School: Students pay up to $175 (for 3 instructional hours per day for 24 days, 1 one-semester course); $350 (for 6 instructional hours per day for 24 days, 2 one-semester courses); $140 (for up to 3 instructional hours per day for 14 days, noncredit or special program course); $155 (for up to 3 instructional hours per day for 15 days, noncredit step-up to high school course).

2. Summer Opportunities instruction for students - no more than $40 (per opportunity per student).

3. Night School: Students may pay up to $170 for 5 credit semester offering for credit recovery courses only.

I. Breakfast/Lunch Programs*

1. Students pay for breakfast (i.e., current cost of breakfast $~~1.90~~1.95).

2. Students pay for lunch (i.e., current cost of lunch $~~3.45~~3.55). A la carte selections vary in price.

3. Students pay for dinner (i.e., current cost of dinner $~~2.95~~3.05).

J. Parking Permit

1. Students wishing to park in school lots during the school day must obtain a parking permit for $40.

2. Students who accrue parking lot violations during the school day may be charged up to $10 per violation.

K. Non-Specialized Attire

1. PE: Students provide athletic shoes, socks, swimsuit, towel, elastic-waist shorts, t-shirt, and cold weather attire as needed.

2. Lifeguarding: Students provide a CPR mouth guard.

L. Musical Instruments (Optional, Non-Extracurricular) *

1. Band and Strings: Students provide their own instruments including drum sticks and mallets for percussion.

M. Music Items (Extracurricular)*

1. Pep Band: Students provide a colored polo shirt (general description by band instructor).

2. Band: Students may provide black or white leather shoes as generally described by band instructor.

N. Air Force Junior Reserve Officer Training

1. Students will purchase additions to their uniform (cords, ribbon holder, ribbons) not to exceed $40.00 per year.

2. Students will pay a uniform cleaning fee not to exceed $135 a year.

* *The requirements marked with an asterisk (*) may be waived for students who qualify for free or reduced-price lunches*

IV. Student Fee Fund:

A. The District shall establish a Student Fee Fund, which shall be a separate fund not funded by tax revenue.

B. All money collected from students pursuant to §79-2,127(1) (related to extracurricular activities), §79-2,127(3) (related to post-secondary education costs), and §79-2,127(8) (related to summer school and night school) shall be deposited into the Student Fee Fund. Money expended from such fund shall be for the purposes for which it was collected from students.

* *The requirements marked with an asterisk (*) may be waived for students who qualify for free or reduced-price lunches*.

V. Waiver of Fees and/or Requirements:

A. Students who qualify for free or reduced-price lunches under the USDA child nutrition programs may have fees and requirements waived for the following:

1. §79-2,133 Related to participation in extracurricular activities.

2. §79-2,131 Related to optional music courses and extracurricular music activities.

B. Participating in a free or reduced-price lunch program shall not be required for students to qualify for a waiver of fees and/or requirements.

C. Any qualified student desiring a waiver of fees and/or requirements shall complete and submit a Request for Waiver of Fees and/or Requirements form to the building principal (or his/her designee). Once the Request is processed, the principal (or his/her designee) shall inform the student as to whether the Request was approved or denied.

Legal References: Neb. Rev. Stat. §79-2,125 *et seq.*

Related Policies & Rules: 6750

Rule Approved: July 15, 2002 Millard Public Schools
Revised: April 21, 2003; July 21, 2003; May 17, 2004; June 6, 2005; Omaha, Nebraska
April 17, 2006; April 23, 2007; April 21, 2008; April 13, 2009; November 2, 2009; February 15, 2010;
April 5, 2010; September 7, 2010; March 21, 2011; July 11, 2011; May 7, 2012; May 20, 2013;
July 1, 2013; May 5, 2014; May 4, 2015, May 2, 2016; May 1, 2017; May 7, 2018; May 6, 2019,
May 4, 2020

AGENDA SUMMARY SHEET

Agenda Item: Reaffirm Policy 6800: Curriculum, Instruction, and Assessment- Parental Access

Meeting Date: May 4, 2020

Background/ Description: This policy is due for annual review.

Action Desired: Reaffirm Policy 6800: Curriculum, Instruction, and Assessment- Parental Access

Policy/Strategic Plan Reference: N/A

Responsible Person(s): Dr. Heather Phipps, Dr. Anthony Weers, Andy DeFreece

Superintendent's Signature:

Curriculum, Instruction, and Assessment

Parental Access 6800

It is the policy of the Millard School District to inform parents of the educational practices affecting their children, and to foster and facilitate parental involvement in educational practices affecting their children

This Policy shall be reviewed annually and either altered and adopted as altered, or reaffirmed by the Board, following a public hearing.

Related Policies and Rules: 6800.1

Legal Reference: Neb. Rev. Stat. §§ 79-530 through 79-533, 79-2, 104

Policy Approved: June 19, 1995 Millard Public Schools
Revised: April 27, 1998; September 13, 1999 Omaha, Nebraska
Reaffirmed: July 1, 1996; July 7, 1997; August 7, 2000; June 17, 2002
July 7, 2003; May 17, 2004; June 6, 2005; June 5, 2006; June 4, 2007; June 1, 2009
June 7, 2010; June 6, 2011; June 4, 2012; June 3, 2013; May 19, 2014; May 18, 2015; May 2, 2016; May 1, 2017;
May 7, 2018; May 6, 2019, May 4, 2020

AGENDA SUMMARY SHEET

Agenda Item: Reaffirm Rule 6800.1: Curriculum, Instruction, and Assessment- Parental Access

Meeting Date: May 4, 2020

Background/ Description: This Rule is due for annual review.

Action Desired: Reaffirm Rule 6800.1: Curriculum, Instruction, and Assessment- Parental Access

Policy/Strategic Plan Reference: N/A

Responsible Person(s): Dr. Heather Phipps, Dr. Anthony Weers, Andy DeFreece

Superintendent's Signature:

Curriculum, Instruction, and Assessment

Parental Access 6800.1

I. **Access to Educational Practices.** Parents will be afforded the following access to the District's educational practices as required by law:

A. **Textbooks, tests, and curriculum materials**: Parents may obtain access to textbooks, tests, and other curriculum materials used by the District by making a request to the Associate Superintendent of Educational Services or said Associate Superintendent's designee. Such request shall be reasonably specific in order that the District may comply with the request.

1. **Courses, assemblies, and other instructional activities:** Parents may request to attend courses, assemblies, and other instructional activities by contacting the school principal or principal's designee reasonably in advance of the course, assembly, or instructional activity the parent desires to attend. The District will comply with such request if the request:

a. Does not materially interfere with the educational process; and/or

b. Is not contrary to the best interests of the student.

If the parent's request is denied or qualified, the District will so notify the requesting parent, and will provide an explanation of the grounds for the denial or qualification.

If the parents dispute the denial or qualification, the parents may submit a written request for review to the District's Associate Superintendent for Educational Services. Upon receipt of a written request for review, the Associate Superintendent for Educational Services will review all relevant documents and undertake such investigation as he/she determines to be appropriate. Thereafter, the Associate Superintendent for Educational Services will render a written disposition of the matter within ten (10) school days of his/her receipt of the written request for review.

2. **Counseling sessions:** Parents may request to attend counseling sessions by submitting a written request to the Director of Student Services or said director's designee reasonably in advance of the counseling session the parent desires to attend. The District will comply with such request if the request:

a. Does not materially interfere with the educational process; and/or

b. Is not contrary to the best interests of the student.

If the parent's request is denied or qualified, the District will so notify the requesting parent, and will provide an explanation of the grounds for the denial or qualification.

If the parents dispute the denial or qualification, the parents may submit a written request for review to the District's Associate Superintendent for Human Resources. Upon receipt of a written request for review, the Associate Superintendent for Human Resources will review all relevant documents and undertake such investigation as he/she determines to be appropriate. Thereafter, the Associate Superintendent for Human Resources will render a written disposition of the matter within ten (10) school days of his/her receipt of the written request for review.

B. **Access to records:** The District will permit access to student records pursuant to applicable law, District Policy 5710, and Rule 5710.1. Non-custodial parents will be permitted access to student records pursuant to applicable law, District Policy 5730, and Rule 5730.1.

C. **District testing policy:** The District's administration and use of tests will be in accordance with established and recognized testing procedures for tests of scholastic, academic, and intellectual development and status. Testing pursuant to statutory requirements will be in compliance with recognized testing procedures and reasonable objectives. Drug, alcohol, and tobacco testing will be in compliance with District Policy and Rule.

D. Surveys:

1. **District participation in surveys.** The District will conduct all surveys of students required by law. The District will also participate in surveys of students conducted for educational purposes or which are reasonably related to the same.

2. **Protections of personal information and student privacy.** No surveys shall be conducted which require the disclosure of personally identifiable information unless the survey is required by law, District Policy, or Board authorization. Survey results shall not disclose personally identifiable information unless such disclosure is required by law, District Policy, or Board authorization.

3. **Notification and consent.** No student shall be required to submit to a survey, analysis, or evaluation that reveals information concerning political affiliations or beliefs of the student or the student's parent; mental or psychological problems of the student or the student's family; sex behavior or attitudes; illegal, anti-social, self-incriminating, or demeaning behavior; critical appraisals of other individuals with whom respondents have close family relationships; legally recognized privileged or analogous relationships, such as those of lawyers, physicians, and ministers; religious practices, affiliations, or beliefs of the student or student's parent; income (other than that required by law to determine eligibility for participation in a program or for receiving financial assistance under such program); or which originates outside the District, without the prior written consent of the parent or without the prior consent of the student if the student is an adult or an emancipated minor. The District shall provide for reasonable notice of the adoption on continued use of this Rule directly to the parents of students enrolled in the District at least annually at the beginning of the school year and within a reasonable time after any substantive change in this Rule. The District shall directly notify the parents of students at least annually at the beginning of the school year, of the specific or approximate dates during the school year when such surveys are scheduled or expected to be scheduled.

4. **Right to inspect surveys and to opt out.** The parents of district students have the right to inspect any survey before the survey is administered or distributed, including all instructional materials, teacher's manuals, films, tapes, and other supplementary materials which will be used in connection with any such survey. A parent shall be provided reasonable access to a survey within a reasonable period of time after a request to inspect is received. Parents, adult students, and emancipated students, may opt out of participation in any such survey by not providing the required prior consent or by revoking any previously provided consent.

5. **Personal information for marketing or sale.** The District does not collect, disclose, or use personal information collected from students for the purpose of marketing or for selling that information or otherwise providing that information to others for that purpose. The District may engage in the collection, disclosure, or use of personal information collected from students for the exclusive purpose of developing, evaluating, or providing educational products or services for, or to:

a. Students;

b. Educational institutions such as college or other post-secondary education recruitment, book clubs, magazines, and programs providing access to low-cost literary products;

c. Curriculum and instructional materials used by elementary and secondary schools.

d. Tests and assessments;

e. The sale by students of products or services to raise funds for school-related or education-related activities, or student recognition programs.

II. **Annual Review.** This Rule shall be reviewed annually and either altered and adopted as altered, or reaffirmed by the Board, following a public hearing.

Legal Reference: Neb. Rev. Stat. §§ 79-530 through 79-533, 79-2, 104; 20 U.S.C. § 1232h

Cross References:

Rule 1310.2 (II) Complaints: Instructional Materials

Rule 5720.1 Records Retention and Disposition

Policy 5730 Parents' Access to School Records and School Contact

Rule 5730.1 Non-Custodial Parents' Access to School Records and School Contact

Policy 5710 Access to Student Records

Rule 5710.1 Student Records

Rule 5740.1 Visits to the Schools - Visitations by Parents, Guardians, and Others

Policy 6700 Extracurricular School Sponsored Clubs and Activities and Interscholastic Athletics and Activities (NSAA)

Rule 5530.1 Recognition of Religious Beliefs and Customs and Exclusion from Participation

Rule 6810.2 Curriculum Request for Exclusion

Policy 6810 Public Access to School Materials and Documents

Rule 6810.1 Public Access to School Materials and Documents

Policy 6900 Research: Testing

Rule 6900.1 Research: Testing

Related Policies and Rules: 6800

Rule Approved: June 19, 1995 Millard Public Schools
Revised: April 27, 1998; September 13, 1999; July 7, 2003; May 17, 2004; June 6, 2006 Omaha, Nebraska
Reaffirmed: July 1, 1996; July 7, 1997; August 7, 2000; July 16, 2001; June 17, 2002;
June 6, 2005; June 4, 2007; June 2, 2008; June 1, 2009; June 7, 2010; June 6, 2011;
June 4, 2012; June 3, 2013; May 19, 2014; May 18, 2015; May 18, 2015; May 2, 2016; May 1, 2017;
May 7, 2018; May 6, 2019, May 4, 2020

AGENDA SUMMARY SHEET

Agenda Item: Approval of 9-12 Science Instructional Materials and PK-12 Science Framework: Part II B

Meeting Date: May 4, 2020

Background/

The PreK-12 Science Framework was approved by the Board of Education on February 19, 2018. Curriculum Planning Committee members screened available resources and narrowed the number of products under consideration for a deeper analysis of high quality instructional materials. The K-8 Science Instructional Materials were approved by the Board on April 20, 2020. Today we bring the 9-12 materials for approval.

The PK - 12 Science Curriculum Planning Committee reconvened on February 26, 2020, to to form their recommendations. The recommendations from the PreK-12 Science Curriculum Planning Committee members were reviewed by the Office of Educational Services.

The attached recommendations:

- Best meet and exceed the standards and indicators within the PreK-12 Science Framework while providing opportunity for students to explore and think critically through 3-Dimensional teaching and learning.
- Provide updated instructional materials.

Pending program budgeting, the estimated cost is $924,949.

Action Desired: Approval of 9-12 Science Instructional Materials and PK-12 Science Framework: Part II B

Policy/Strategic Plan Reference: Strategy 2 - We will develop and implement plans to differentiate and expand our instructional delivery systems to meet each student's needs in a changing world.

Action Plan 2.4 - Engage in innovative practices to maximize learning for students and staff.

Responsible Person(s): Dr. Heather Phipps, Dr. Anthony Weers, Andy DeFreece, Ellen Kramer, and Dr. Amy Himes

Superintendent's Signature:

Based on the recommendations from the PreK-12 Science Curriculum Planning Committee, the Office of Educational Services is proposing the following instructional materials adoption for the 2020-2021 school year.

Science Courses and Instructional Materials Selections		
High School Required and Elective Course Textbook/Teacher Resources		
• Biology	$171,293	Miller & Levine Biology (Pearson)
• Chemistry, PSC	$192,604	Experience Chemistry Vol 1 & Vol 2 (Pearson)
• Physics, PSP	$205,304	Conceptual Physics 12th Edition MasteringPhysics with Pearson eText (Pearson)
• Astronomy	$13,286	Starry Night Simulations Software
• Environmental Science	$102,480	Environmental Science, 16th Ed + MindTap (Cengage)
• Human Anatomy & Physiology	$65,874	Hole's Essentials of Anatomy & Physiology (McGraw Hill)
• Zoology	$84,028	Miller Zoology (McGraw Hill)
High School AP Course Textbook/Teacher Resources		
• AP Biology	$23,061	Campbell Biology in Focus 3rd Edition, AP® Edition (Pearson)
• AP Chemistry	$44,918	Chemistry by Zumdahl and Zumdahl 10th Edition Bundle: Chemistry, AP® Edition (Cengage)
• AP Physics 1 • AP Physics 2	$14,948	College Physics for the AP® Physics 1 Course 2e & CP NC HS College Physics 2e AP® Physics 2 Course for All Schools & CM SaplingPlus for College Physics for AP® Physics 2
• AP Environmental Science	$7,153	Environmental Science for the AP® Course Third Edition by Andrew Friedland; Rick Relyea (BFW)
Grand Total	$924,949	

Curriculum Cycle Phase 2: Year One (2018-2019)
Vendor Fair and Subcommittee Evaluation Teams
Science teachers participated in a vendor fair and identified their top two choices for each required and and elective science course during Phase 2 year one of the MEP curriculum cycle.

Administrators, District Level Leaders, District Support

Jan Dahlgaard	MEP Curriculum & Instruction Facilitator	Ron Witt Support Services Center
Ellen Kramer	MEP Curriculum & Instruction Facilitator	Ron Witt Support Services Center
Dr. Melanie Olson	Coordinator Secondary Education	Don Stroh Administration Center

Diane Reiners	MEP Curriculum & Instruction Facilitator	Ron Witt Support Services Center
Dr. Anthony Weers	Director Secondary Education	Don Stroh Administration Center
Tami Whitted	MEP Curriculum & Instruction Facilitator	Ron Witt Support Services Center
Jacen Lefholtz	MEP Instructional Technology Facilitator	Ron Witt Support Services Center
Kathi Smith	MEP Instructional Technology Facilitator	Ron Witt Support Services Center

Biology

Steve Lerner	Teacher	Millard North High School
Tyler Pearson	Teacher	Millard North High School
Kelsey Nodgaard	Teacher	Millard West High School
Jessica Hamzhie	Teacher	Millard West High School
Tim Leuschen	Teacher	Millard South High School
Erika Campbell	Teacher	Millard West High School

Chemistry

Hans Keim	Teacher	Millard North High School
Aaron Willems	Teacher	Millard West High School
Ron Kaspar	Teacher	Millard South High School

Physics

Tyler Berzina	Teacher	Millard West High School
Dean Liberty	Teacher	Millard South High School
Estefania Larsen	Teacher	Millard South High School
Jason Krska	Teacher	Millard West High School
Phil Manley	Teacher	Millard North High School
Walter Mertz	Teacher	Millard North High School

Astronomy

Michael Edmundson	Teacher	Millard South High School
Trent Monzingo	Teacher	Millard North High School

Environmental Science

Justin Higgins	Teacher	Millard West High School
Meghan Evans	Teacher	Millard North High School

Human Anatomy and Physiology

Lisa Groth	Teacher	Millard South High School
Deanna Stickney	Teacher	Millard South High School
Christina Pruess	Teacher	Millard North High School
Jeremy Dawson	Teacher	Millard West High School

Zoology

Sarah Morrison	Teacher	Keith Lutz Horizon High School
Kristen Holzer	Teacher	Millard West High School

Curriculum Cycle Phase 2: Year Two (2019-2020)
High School Science Instructional Materials Subcommittee Results
Under the facilitation of Dr. Amy Himes, MEP Curriculum and Instruction Facilitator

High School Science Instructional Materials Subcommittee for each science course were formed and met during first and second semesters (September 2019 - February 2020) to review textbooks, digital platforms, and materials for high school required and elective courses that had been identified during the vendor fair process and evaluations during Phase 2 year one (2018-2019). Materials Review Team Members were asked to review the Millard Public Schools PreK-12 Science Framework and the standards and indicators relevant to their respective course of science study. This process was followed by large group and small group discussions of selection criteria for ideal textbooks, digital platforms, technology, and print materials. The subcommittees compared

and evaluated each potential set of materials according to the district approved standards and indicators and also considered criteria for 3-Dimensional teaching structures and strategies. Evaluation forms were completed for each set of materials. Subcommittees also reviewed course descriptions, selection criteria for textbooks and supplemental materials. Subcommittees wrote a rationale for each recommendation of primary resources.

The **High School Science Instructional Materials Subcommittee** Team considered the following during the evaluations processes:

- Text that best aligns with the approved standards and indicators related to each course
- Quality of digital materials, interactive demonstrations, simulations, and activities
- Appropriate, critical thinking, problem-solving, and standards-based phenomena
- Readability and comprehensibility for the course level
- Utilization and accessibility of assessment materials, print and digital
- Strengths of materials with regard to 3-Dimensional teaching and learning practices
    - Disciplinary Core Ideas
    - Science and Engineering Practices
    - Crosscutting Concepts

High School Materials Study Team Members
Under the facilitation of Dr. Amy Himes, MEP Curriculum and Instruction Facilitator

Biology / AP

Melanie Burke	Millard North High School
Erika Campbell	Millard West High School
Jeremy Dawson	Millard West High School
Lisa Groth	Millard South High School
Mikala Hansen	Millard West High School
Nicole Kinzer	Millard South High School
Tim Leuschen	Millard South High School
Dean Liberty	Millard South High School
Kelsey Nodgaard	Millard West High School
Tyler Pearson	Millard North High School

Chemistry / PSC / AP

Anna Ahrens	Millard South High School
Melanie Burke	Millard North High School
Christine Ingram	Millard West High School
Daryl Jahn	Millard North High School
Ron Kaspar	Millard South High School
Cheryl Vanicek	Millard West High School
Dr. Jennifer Wilson	Millard South High School
Leah Zohner	Millard North High School

Physics / PSP / AP

Tyler Berzina	Millard West High School
David Burgan	Millard South High School
Christine Gustafson	Millard South High School
Estefania Larsen	Millard South High School
Philip Manley	Millard North High School
Walter Mertz	Millard North High School
Erica Storms	Millard South High School

Electives / AP

Erika Campbell	Millard West High School
Jeremy Dawson	Millard West High School
Michael Edmundson	Millard South High School
Sonja Griesel	Horizon High School
Kristen Holzer	Millard West High School
Hans Keim	Millard North High School
Sarah Morrison	Horizon High School
Christina Pruess	Millard North High School

Deanna Stickney	Millard South High School
Robert Yakus	Millard North High School

Science Materials Community Review

Under the Facilitation of Dr. Tony Weers, Director of Secondary Education; Dr. Amy Himes, MEP Curriculum & Instruction FacilitatorAndy DeFreece, Director of Elementary Education; Ellen Kramer, MEP Curriculum & Instruction Facilitator

In addition to the instructional materials processes, an opportunity was provided for community members to preview the proposed materials and resources. The preview was held on Tuesday, March 10, 2020. A total of seven community members attended. Conversation included topics such as the structure of the course(s), the high quality resources presented, and the overall coherence of curricular programming district-wide. No objections were noted.

PK – 12 Science Framework

Part I: PK-12
February 19, 2018

Part II A: PK-12
April 20, 2020

Part II B: PK-12
May 4, 2020

Millard PUBLIC SCHOOLS

Notice of Non-Discrimination
The Millard School District does not discriminate on the basis of race, color, religion, national origin, gender, marital status, disability, age, or on any other basis prohibited by federal, state, or local laws in admission or access to or treatment of employment in its programs and activities. The following person has been designated to handle inquiries regarding the discrimination and harassment policies: Associate Superintendent of Human Resources, 5606 South 147 Street, Omaha, NE 68137 (402) 715-8200. The Associate Superintendent of Human Resources may delegate this responsibility as needed. Complaints by school personnel or job applicants regarding unlawful discrimination or unlawful harassment (including sexual harassment) shall follow the procedures of District Rule 4001.2. Complaints by students or parents regarding unlawful discrimination or unlawful harassment (including sexual harassment) shall follow the procedures of District Rule 5010.2.

Table of Contents

District Mission and Beliefs
Science Philosophy

District Mission:

The mission of the Millard Public Schools is to guarantee that each student develops the character traits and masters the knowledge and skills necessary for personal excellence and responsible citizenship by developing a world-class educational system with diverse programs and effective practices designed to engage and challenge all students.

District Beliefs:

We believe:

- Each individual has worth.
- Individuals are responsible for their actions.
- Our greatest resource is people.
- Diversity enriches life.
- All people can learn.
- High expectations promote higher achievement.
- Achievement builds self-esteem; self-esteem promotes achievement.
- All people are entitled to a safe, caring, and respectful environment.
- Responsible risk-taking is essential for growth.
- Excellence is worth the investment.
- Educated and engaged citizens are necessary to sustain our democratic society.
- Public education benefits the entire community and is the shared responsibility of all.
- All schools are accountable to the community.
- Shaping and developing character is the shared responsibility of the individual, family, school and community.

PK-12 Science Philosophy Statement:

Science education is a systematic process that engages and empowers students to be critical thinkers and problem solvers by gathering, analyzing, and communicating evidence of the natural and engineered world. By incorporating scientific investigations and diverse learning opportunities, students will blend their innate curiosity, skills, and knowledge to meet the challenges of a dynamic world.

Curriculum, Instruction, and Assessment Written Curriculum - Content Standards 6110.1

The Essential Learner Outcomes of the Millard Public Schools are the following:

MILLARD ESSENTIAL LEARNER OUTCOMES

· LANGUAGE ARTS · MATHEMATICS · SCIENCE · SOCIAL STUDIES ·
· FINANCIAL WELL-BEING · HUMAN RELATIONS · TECHNOLOGY · FINE AND PERFORMING ARTS · PERSONAL DEVELOPMENT AND WELL-BEING ·
· CRITICAL THINKING AND PROBLEM-SOLVING SKILLS · CREATIVITY AND INNOVATION ·
· COLLABORATION AND TEAMWORK · CITIZENSHIP AND PERSONAL RESPONSIBILITY ·

ACADEMIC SKILLS AND APPLICATIONS

Students will demonstrate proficiency by meeting established standards through course requirements and for assessments identified by the District for specific purposes. This proficiency, along with the successful completion of 230 credits and a Personal Learning Plan (PLP) is used for diploma granting or denial.

LANGUAGE ARTS

- Students will learn and apply reading skills and strategies to comprehend text.
- Students will learn and apply writing skills and strategies to communicate.
- Students will develop and apply appropriate speaking and listening skills and strategies to communicate for a variety of purposes.
- Students will apply information fluency and practice digital citizenship.

MATHEMATICS

- Students will communicate number sense concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.
- Students will communicate geometric concepts and measurement concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.
- Students will communicate algebraic concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.
- Students will communicate data analysis/probability concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.

SCIENCE

- Students will combine scientific processes and knowledge with scientific reasoning and critical thinking to ask questions about phenomena and propose explanations based on gathered evidence.
- Students will integrate and communicate the information, concepts, principles, processes, theories, and models of the Physical Sciences to make connections with the natural and engineered world.
- Students will integrate and communicate the information, concepts, principles, processes, theories, and models of the Life Sciences to make connections with the natural and engineered world.
- Students will integrate and communicate the information, concepts, principles, processes, theories, and models of the Earth and Space Sciences to make connections with the natural and engineered world.

SOCIAL STUDIES

- Students will develop and apply the skills of civic responsibility to make informed decisions based upon knowledge of government at local, state, national and international levels.
- Students will utilize economic reasoning skills to make informed judgments and become effective participants in the economy at the local, state, national and international levels.
- Students will develop and apply spatial perspective and geographic skills to make informed decisions regarding issues and current events at local, state, national and international levels.
- Students will develop and apply historical knowledge and skills to research, analyze, and understand key concepts of past, current, and potential issues and events at the local, state, national, and international levels.

FINANCIAL WELL-BEING

- Demonstrate skills to manage financial resources for short and long term priorities.
- Analyze and make sound financial choices by using appropriate resources.

HUMAN RELATIONS

- Interact positively with all people.
- Understand ethnic and cultural differences.
- Apply awareness of current local, national and global news and world cultures and languages to communicate effectively.

TECHNOLOGY

- Obtain, organize, and communicate information electronically.
- Use a variety of technological resources to solve problems.
- Understands the ethical uses of information and technology related to privacy, intellectual property and cyber security issues.

FINE AND PERFORMING ARTS

- Experience and evaluate a variety of music, art, or drama.
- Recognize the value of a wide range of knowledge and experiences from the arts, culture and humanities.

PERSONAL DEVELOPMENT AND WELL-BEING

- Understand human growth and development.
- Identify the values of good nutrition and physical activity.
- Evaluate the impact of addictive substances and behaviors.
- Build positive social relationships with supportive friends and family in the community.
- Use resources to develop a personal education and career plan to meet goals and objectives.
- Communicate experiences, knowledge and skills identified in a résumé or portfolio and present a professional image when interviewing.

COLLEGE AND CAREER READINESS SKILLS

The following standards and indicators are not measured by district-wide assessments for diploma-granting or denial. Within the school setting, students in the Millard Public Schools will:

CRITICAL THINKING AND PROBLEM-SOLVING SKILLS

- Demonstrate the ability to reason critically, systematically, and logically to evaluate situations from multiple perspectives.
- Conduct research, gather input and analyze information necessary for decision-making.
- Develop and prioritize possible solutions with supporting rationale using valid research, historical context and balanced judgment.
- Demonstrate a willingness to learn new knowledge and skills.
- Exhibit the ability to focus, prioritize, organize and handle ambiguity.
- Recognize factors, constraints, goals and relationships in a problem situation.
- Evaluate solutions and determine the potential value toward solving the problem.

CREATIVITY AND INNOVATION

- Search for new ways to improve the efficiency of existing processes.
- Appreciate new and creative ideas of others.
- Use information, knowledge and experience to generate original ideas and challenge assumptions.
- Know when to curb the creative process and begin implementation.
- Determine the feasibility of improvements for ideas and concepts.
- Accept and incorporate constructive criticism into proposals for innovation.

COLLABORATION AND TEAMWORK

- Contribute to team-oriented projects, problem-solving activities and assignments.
- Engage team members, build consensus and utilize individual talents and skills.
- Anticipate potential sources of conflict to facilitate solutions.
- Demonstrate the ability to disagree with a team member without causing personal offense.
- Take responsibility for individual and shared group tasks.

CITIZENSHIP AND PERSONAL RESPONSIBILITY

- Respect the rights of others.
- Treat others in a considerate and non-demeaning manner.
- Respect diversity.
- Demonstrate the ability to manage time.
- Demonstrate the ability to follow directions.
- Develop the attributes of integrity, self-discipline, and positive attitude.
- Take personal responsibility for actions.
- Establish and execute plans to completion and persevere when faced with setbacks.
- Model behaviors that demonstrate reliability, dependability and commitment.
- Arrive on time to school, work, appointments or meetings adequately prepared and appropriately dressed.
- Comply with policies and regulations.
- Participate in school and/or community organizations.
- Engage in local government through attendance, participation and service.
- Demonstrate a respect for laws and regulations and those who enforce them.
- Consider the ethical implications and long-term consequences of decisions and actions on personal reputation and credibility.

Revised: Strategic Planning, December 5, 1996
T-Chart Approved: Millard Board of Education, January 13, 1997
Related Policy: 6110
Rule Adopted: May 3, 1999
Revised: June 18, 2001; July 21, 2003; December 4, 2006,
March 2, 2009; March 1, 2010; April 18, 2011;
August 19, 2013; November 3, 2014

Science Curriculum Planning Committee Members 2017-2018

Elementary

Lisa Bartels - 5th grade, Montclair
Bethany Case - Administrator, Cather
Dayna Derichs - Teacher Librarian, Wheeler
Savannah Dinslage - 1st grade, Ezra Millard
Jeremy Fleming - 3rd grade, Wheeler
Nikki Frenche - 1st grade, Abbott
Erin Gonzalez - Administrator, Harvey Oaks
Carrie Grove - Kindergarten, Norris
Kelli Hasenjager - 5th grade Primary Years Program, Aldrich
Briana Holthaus - 4th grade, Wheeler
Alicia Judernatz - 3rd grade, Rohwer
Alicia Kotlarz - Administrator, Montclair
Stephanie Kurz - 4th grade, Holling Heights
Tracy Logan - Administrator, Wheeler
Erin Maguire - Kindergarten, Harvey Oaks
Molly Ritchie - 2nd grade, Ezra
Charlene Schuchardt - 4th grade, Rohwer
Robyn Smith - Intermediate Montessori, Norris
Kate Solberg - 3rd grade Core, Cather
Jacob Svacina - 2nd grade, Neihardt

Secondary

Dr. Jennifer Allen - Administrator, West HS
Tyler Berzina - Physics, West HS
Jason Boatwright - 8th grade, Anderson MS
Sharon Eblen - Physics, North HS
Lisa Groth - Life Science, South HS
Dr. David Hemphill - Administrator, Kiewit MS
Kristin Holzer - Life Science Electives, West HS
Daryl Jahn - Chemistry, North HS
Estefania Larsen - Physics, South HS
David McEnaney - Life Science, North HS
Sarah Morrison - Academy, Horizon HS
Kelsey Nodgaard - Life Science, West HS
Tyler Renken - Special Education, South HS
Nichole Schwab - 8th grade, Russell MS
Kelley Staber - 6th grade, Beadle MS
Dr. Jennifer Wilson - Chemistry, South HS

District

Lori Bartels – Coordinator of K-5 Special Education
Dr. Angela Daigle - Library Services Department Head
Andrew DeFreece - Director, Elementary Education and Early Childhood Education
Pam Erixon - English Language Learners District Support Specialist
Ted Esser - Secondary Coordinator of Special Education
Kara Hutton - Elementary Coordinator of Special Programs
Cheris Kite - Early Childhood & Literacy Intervention Curriculum & Instruction MEP Facilitator
Ellen Kramer - K-5 Science Curriculum & Instruction MEP Facilitator
Jacen Lefholtz - Instructional Technology MEP Facilitator
Melanie Olson - 6-12 Science Curriculum & Instruction MEP Facilitator
Anthony Weers - Director of Secondary Education

Science Community Focus Group Members

Dr. Kelly Gomez Johnson, University of Nebraska - Omaha, Teacher Education
Nancy Thornblad - College of Saint Mary
Dr. Stacey Ocander - Metro Community College, Dean of Health and MPS Parent
Andy Szatko - City of Omaha and MPS Parent
Kent Holm - Douglas County Environmental Services
Dr. James Persson - Physician and MPS Parent
Dr. Steve Sindelar - Physician and MPS Parent
Dr. Clara Hoover - Community Member
Dr. Abby Burke - Parent
Sara Cooper - Nebraska Department of Education
Monica Storm - Iowa Western Community College and MPS Parent

Phase 1 PK-12 Research Subcommittees 2017

Members of the Curriculum Planning Committee engaged in analysis and discussions about concerns, opportunities, weaknesses, and strengths of Science education in Millard Public Schools. From this analysis and discussion seven research topics were determined:

- **Instructional Practices** that support achievement in science education
- **STEM/STEAM Integration**
- **Professional Development** methods that lead to effective instructional practices
- **Alignment and Transitions** within and across grade levels
- **Standards and Assessments** that measure student mastery of science standards
- **Courses** that ensure students of all abilities and interests are college and career ready
- **Resources** that are designed for instructional shifts in science education and facilitate effective teaching and learning

PreK-12 Science Curriculum Planning Committee Meeting 2019-2021

Under the Facilitation of Dr. Amy Himes and Ellen Kramer, MEP Curriculum & Instruction Facilitators

The PreK-12 Science Curriculum Planning Committee (CPC) met on February 26, 2020. The committee members met to review the findings of the K-12 Science Field Study and feedback from the Community Focus Groups Members of the PreK-12 Science Curriculum Planning Committee (CPC) reviewed and discussed the results. The CPC approved the materials and recommended to move forward with the adoption of proposed materials to achieve the MPS Science Philosophy and District written curriculum content standards.

Dr. Jennifer Allen	Administrator	Millard West High School
Lisa Lausten	Teacher	Montclair Elementary School
Tyler Berzina	Teacher	Millard West High School
Dr. Angela Daigle	Library Services	RWSSC
Savannah Dinslage	Teacher	Ezra Millard Elementary School
Sharon Eblen	Teacher	Millard North High School
Jeremy Fleming	Teacher	Wheeler Elementary School
Nikki Frenche	Teacher	Abbott Elementary School
Carrie Grove	Teacher	Norris Elementary School
Kelli Hasenjager	Teacher	Aldrich Elementary School
Kristen Holzer	Teacher	Millard West High School
Daryl Jahn	Teacher	Millard North High School
Alicia Judernatz	Teacher	Rohwer Elementary School
Stephanie Kurz	Teacher	Holling Heights Elementary
Estefania Larsen	Teacher	Millard South High School
David McEnaney	Teacher	Millard South High School
Sarah Morrison	Teacher	KLHHS
Kelsey Nodgaard	Teacher	Millard West High School
Tyler Renken	Special Education Teacher	Millard South High School
Molly Ritchie	Teacher	Ezra Millard Elementary School
Katelyn Schapker	Teacher	Beadle Middle School
Charlene Schuchardt	Teacher	Rohwer Elementary School
Nichole Schwab	MEP Facilitator	RWSSC
Robyn Smith	Teacher	Norris Elementary School
Kate Solberg	Teacher	Cody Elementary School
Theodore Stocking	Teacher	Beadle Middle School
Dr. Jennifer Wilson	Teacher	Millard South High School

Science Materials Community Preview

In addition to the instructional materials process noted above, an opportunity was provided for community members to preview the proposed materials and resources. The preview was held on Tuesday, March 10, 2020. A total of seven community members attended. Conversation-included topics such as the structure of the course(s), the high quality resources presented, and the overall coherence of curricular programming district-wide. No objections were noted.

Timeline of Science Curriculum Cycle Meetings

Phase I (2017-2018) Elementary & Secondary

Date	Group -- Purpose
October 24, 2017	Science Curriculum Planning Committee (CPC) Kick Off Orientation to the Phase I process, roles of committee members, introduction to three-dimensional learning
October 30, 2017	CPC Meeting #1 Professional Learning on pedagogical shifts (three-dimensional teaching) in Science, review of data book, identification of critical issues, development of research subcommittees and research questions
October 31, 2017 - November 12, 2017	Science Research Subcommittees conduct research on seven critical issues and research questions
November 13, 2017	CPC Meeting #2 Research subcommittee members collaborate, research presentations from subcommittees, exploration of state standards content and format
December 4, 2017	CPC Meeting #3 Professional learning on interdisciplinary connections, three-dimensional using natural phenomena as a teaching tool, and deconstructing state standards; begin development of philosophy statement; discuss possible course offerings at middle school and high school
December 4, 2018 - December 22, 2018	Collect input from CPC members about state standards structure and possible course offerings and sequence for secondary level
January 9, 2018	Community Focus Group Explained state and district policies, curriculum adoption process, shifts in Science teaching and learning Discussed critical issues, and vision for Science education in order for students to be successful beyond high school
January 18, 2018	CPC Meeting #4 Reviewed Community Focus Group input Completed framework writing, philosophy statement

	Secondary Members of Curriculum Planning Committee—Developed individual course frameworks for all high school courses Elementary Members of Curriculum Planning Committee -- Professional learning on implementation of three-dimensional teaching and learning
February 19, 2018	PK-12 Science Framework proposal submitted to Board of Education for approval
April 1, 2019	K-8 Science Materials Vendor Fair
April 22, 2019	9-12 Science Step-Ahead Team
February 26, 2020	PK-12 Science Curriculum Planning Committee- Reviewed the instructional materials recommendation to the Board
March 10, 2020	Community Review Night
April 20, 2020	PK-12 Science Framework- Part IIA and instructional materials proposal submitted to the Board of Education for approval
May 4, 2020	PK-12 Science Framework- Part IIB and instructional materials proposal submitted to the Board of Education for approval

Introduction to PK-12 Science Matrix

The new Nebraska College and Career Ready Standards for Science (CCR-Science) were approved by the Nebraska State Board of Education on September 8, 2017. The following matrix represents the recommendations for Millard Public Schools PK-12 Science Standards made by the PK-12 Science Curriculum Planning Committee. Development of this framework is based on findings from research subcommittees and critical analysis of the new state standards, existing standards in consortia school districts, and existing standards from other states.

The standards are organized by grade level preschool through 12th grade. Preschool standards are based on Nebraska Early Learning Guidelines to meet the diverse and unique learning needs of young children. Standards for our youngest learners establish the foundation for successful scientific understanding as students prepare for kindergarten. Kindergarten through fifth grade standards reflect developmentally appropriate learning progressions that build on the foundation for understanding science in the later grades. Middle school and high school standards help students develop deeper and more sophisticated understanding of science concepts that were introduced in elementary grades.

As is common in all state frameworks, the science standards have two levels of specificity: standards and indicators. A common stem begins each standard regardless of grade: "Gather, analyze, and communicate…" These verbs underscore long-term learning goals that are associated with the rigor of the standards and provide guidance for exemplary classroom instruction throughout all grades. Indicators more specifically describe what students must know and be able to do to meet the standard. *A Framework for K-12 Science Education* (National Research Council, 2012) makes the case for science teaching and learning through three dimensions: Disciplinary Core Ideas, Crosscutting Concepts, and Science and Engineering Practices.

Table 1 below provides details about each of the three dimensions. **Disciplinary Core Ideas** are a focused set of science ideas recommended by *A Framework for K-12 Science Education* and identified as necessary for all students to achieve scientific literacy that will serve them well beyond their K-12 education. **Crosscutting concepts** are tools that help students make sense of disciplinary core ideas and deepen understanding. They facilitate synthesis of knowledge that helps students construct a scientific, evidence-based view of the world. The **science and engineering practices** are behaviors that are utilized to investigate natural phenomena and develop solutions to real-world problems. Each indicator in the framework is an intentional combination of all three dimensions that guide assessment.

Table 1 - The Three Dimensions of Science Teaching and Learning

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
• Ask Questions and Define Problems • Develop and Use Models • Plan and Carry Out Investigations • Analyze and Interpret Data	**Life Science** • LS1 - From Molecules to Organisms: Structures and Processes • LS2 - Ecosystems: Interactions, Energy, and Dynamics • LS3 - Heredity: Inheritance and Variation of Traits • LS4 - Biological Evolution: Unity and Diversity	• Patterns • Cause and Effect • Scale, Proportion, and Quantity • Systems and System Models • Energy and Matter

• Use Mathematics and Computational Thinking • Construct Explanations and Design Solutions • Engage in Argument from Evidence • Obtain, Evaluate, and Communicate Information	**Physical Science** • PS1 - Matter and Its Interactions • PS2 - Motion and Stability: Forces and Interactions • PS3 - Energy • PS4 - Waves and Their Applications in Technologies for Information Transfer **Earth and Space Science** • ESS1 - Earth's Place in the Universe • ESS2 - Earth's Systems • ESS3 - Earth and Human Activity • ETS1 - Engineering Design	• Structure and Function • Stability and Change

Adapted from: Nebraska Department of Education (2017). K-12 College and Career Ready Standards for Science. and Nebraska Early Learning Guidelines draft (2017)

Legend

☐ Cell without text: No State or Millard indicator exists.

Nomenclature

The nomenclature for the standards and indicators is as follows:

SC	Science State Standard
M	Millard Standard
P3-12	Grade Level
1-15	Topic (Disciplinary Core Idea) 1. Forces and Interactions 2. Waves & Electromagnetic Radiation 3. Structure & Properties of Matter 4. Energy 5. Chemical Reactions 6. Structure & Function 7. Interdependent Relationships in Ecosystems 8. Matter & Energy in Organisms & Ecosystems 9. Heredity: Inheritance & Variation of Traits 10. Biological Evolution 11. Space Systems 12. Weather & Climate 13. Earth's Systems 14. History of Earth 15. Sustainability
2.	Standard
A	Indicator
underline	Crosscutting Concept
bold	Science and Engineering Practice

Example

SC.5.3.1 ←(Standard)
Gather, analyze, and communicate evidence of structure and properties of matter.

SC.5.3.1.B ←(Indicator)
Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved

SC. content area	**5.** grade level	**3.** topic (Disciplinary Core Idea)	**1.** standard	**B** indicator
Science	Grade 5	Structures & Properties of Matter	Structure & Properties of Matter	weight of matter is conserved regardless of change that occurs when heating, cooling, or mixing substances

The Topic Progression provides a quick view of the PK-12 instructional progression.

Science Matrix Contents

	11. Space Systems	11. Space Systems
	12. Weather and Climate	12. Weather and Climate
	13. Earth's Systems	13. Earth's Systems
	14. History of Earth	14. History of Earth
	15. Sustainability	15. Sustainability

Topic Progression PK-8

Summary of PK-12 Topic Progression

Topic\Grade	PK	K	1	2	3	4	5	6	7	8
P4.1 Scientific Knowledge	SC.M.P4.1									
P4.2 Scientific Skills and Methods	SC.M.P4.2									
1 Forces & Interactions		SC.K.1			SC.3.1					SC.8.1
2 Waves & Electromagnetic Radiation			SC.1.2			SC.4.2				SC.8.2
3 Structure & Properties of Matter				SC.2.3			SC.5.3		SC.7.3	
4 Energy						SC.4.4		SC.6.4		SC.8.4
5 Chemical Reactions									SC.7.5	
6 Structure & Function			SC.1.6			SC.4.6		SC.6.6		
7 Interdependent Relationships in Ecosystems		SC.K.7		SC.2.7	SC.3.7				SC.7.7	
8 Matter & Energy in Organisms & Ecosystems							SC.5.8		SC.7.8	
9 Heredity: Inheritance & Variation of Traits					SC.3.9			SC.6.9		SC.8.9

10 Biological Evolution										**SC.8.10**
11 Space Systems			**SC.1.11**				**SC.5.11**			**SC.8.11**
12 Weather & Climate		**SC.K.12**			**SC.3.12**			**SC.6.12**		
13 Earth's Systems				**SC.2.13**		**SC.4.13**	**SC.5.13**	**SC.6.13**	**SC.7.13**	
14 History of Earth									**SC.7.14**	**SC.8.14**
15 Sustainability										

Topic Progression High School

Topic\Grade	9	10	11
1 Forces & Interactions			**SC.HS.1**
2 Waves & Electromagnetic Radiation			**SC.HS.2**
3 Structure & Properties of Matter		**SC.HS.3**	
4 Energy			**SC.HS.4**
5 Chemical Reactions		**SC.HS.5**	
6 Structure & Function	**SC.HS.6**		
7 Interdependent Relationships in Ecosystems	**SC.HS.7**		
8 Matter & Energy in Organisms & Ecosystems	**SC.HS.8**		
9 Heredity: Inheritance & Variation of Traits	**SC.HS.9**		
10 Biological Evolution	**SC.HS.10**		

11 Space Systems		**SC.HS.11**	**SC.HS.11**
12 Weather & Climate	**SC.HS.12**		
13 Earth's Systems	**SC.HS.13**	**SC.HS.13**	**SC.HS.13**
14 History of Earth	**SC.HS.14**		**SC.HS.14**
15 Sustainability	**SC.HS.15**	**SC.HS.15**	**SC.HS.15**

PK Science Standards Matrix

Scientific Knowledge	
3-4 years	**4-5 years**
SC.M.P3.1 Demonstrates a basic awareness and use of scientific concepts SC.M.P4.1 Demonstrates a basic awareness and use of scientific concepts	
SC.M.P3.1.A Compares and contrasts properties of objects (e.g. sink or float)	SC.M.P4.1.A Shows interest in measurement of time, length, distance, weight
SC.M.P3.1.B Provides simple verbal or signed descriptions of observed phenomenon.	SC.M.P4.1.B Describes observable phenomena using adjectives and labels
SC.M.P3.1.C Differentiates between living and nonliving organisms.	SC.M.P4.1.C Uses science and engineering practice words (e.g. observe, experiment, compare)
SC.M.P3.1.D Describes or represents a series of events in the correct sequence	SC.M.P4.1.D Uses scientific content words (e.g. some plants are comprised of stems, roots, leaves).
SC.M.P3.1.E Begins to use scientific vocabulary	SC.M.P4.1.E Uses measurement tools (e.g. scale, ruler, unit blocks) to quantify similarities and difference between objects
	SC.M.P4.1.F Uses non-adult sources to gather information (e.g. reference books)
	SC.M.P4.1.G Develops beginning understanding of caring for the environment

Scientific Skills and Methods	
3-4 years	**4-5 years**
SC.M.P3.2 Develop foundational skills in learning and understanding about the world through exploration and investigation. SC.M.P4.2 Develop foundational skills in learning and understanding about the world through exploration and investigation.	
SC.M.P3.2.A Explores various materials to learn about characteristics of objects, plants, animals, and various phenomena (e.g. weight, shape, size, color, temperature)	SC.M.P4.2.A Makes observations, asks questions, predicts, draws conclusions, explains, and tries things out to see what will happen

SC.M.P3.2.B Begins to look for answers to questions through active investigation	SC. M.P4.2.B Independently uses simple tools to conduct an investigation to increase understanding
SC.M.P3.2.C Uses a variety of tools and objects to explore the world and how things work in the world (uses magnets, microscope, or magnifying glasses)	SC.M.P4.2.C Collects, describes and records information through discussions, drawings, maps, and charts
SC.M.P3.2.D Asks questions about the relationship between two things (e.g. why do you think some animals sleep in the day?)	SC.M.P.4.2.D Communicates results of an investigation
	SC.M.P.4.2.E Begins to distinguish evidence from opinion

K-5 Science Standards Matrix

Physical Science PK-5 Topic 1: Forces and Interactions					
Grade K	**Grade 1**	**Grade 2**	**Grade 3**	**Grade 4**	**Grade 5**
Forces and Interactions: Pushes and Pulls (SC.K.1) Forces and Interactions: Motion and Stability (SC.3.1)					
SC.K.1.1 Gather, analyze, and communicate evidence of forces and their interactions. SC.3.1.1 Gather, analyze, and communicate evidence of forces and their interactions.					
SC.K.1.1.A **Plan and conduct an investigation to compare** the effects of different strengths or different directions of pushes and pulls on the motion of an object.			SC.3.1.1.A **Plan and conduct an investigation** to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.		
SC.K.1.1.B **Analyze data to determine if**			SC.3.1.1.B		

a design solution works as intended to change the speed or direction of an object with a push or a pull.			**Make observations and/or measurements** of an object's motion to provide evidence that a pattern can be used to predict future motion.		
			SC.3.1.1.C **Ask questions** to determine cause and effect relationships of electrical or magnetic interactions between two objects not in contact with each other.		
			SC.3.1.1.D **Define a simple design problem** that can be solved by applying scientific ideas about magnets.		
Physical Science **Topic 2: Waves and Electromagnetic Radiation**					
Grade K	**Grade 1**	**Grade 2**	**Grade 3**	**Grade 4**	**Grade 5**
Waves: Light and Sound (SC.1.2) **Waves: Waves and Information (SC.4.2)**					
SC.1.2.1 Gather, analyze, and communicate evidence of light and sound waves. SC.4.2.1 Gather, analyze, and communicate evidence of waves and the information they transfer.					
	SC.1.2.1.A **Plan and conduct investigations** to provide evidence that			SC.4.2.1.A **Develop a model** of waves to describe **patterns** in terms of amplitude and	

	vibrating materials can make sound and that sound can make materials vibrate.			wavelength and that waves can cause objects to move.	
	SC.1.2.1.B **Make observations to construct** an evidence-based account that objects can be seen only when illuminated.			SC.4.2.1.B **Generate and compare multiple solutions** that use patterns to transfer information.	
	SC.1.2.1.C **Plan and conduct an investigation** to determine the effect of placing objects made with different materials in the path of a beam of light.				
	SC.1.2.1.D **Use tools and materials to design and build** a device that uses light or sound to solve the problem of communicating over a distance.				
Physical Science **Topic 3: Structure and Properties of Matter**					
Grade K	**Grade 1**	**Grade 2**	**Grade 3**	**Grade 4**	**Grade 5**
Structure and Properties of Matter (SC.2.3 and SC.5.3)					

SC.2.3.1 Gather, analyze, and communicate evidence of the structure, properties, and interactions of matter. SC.5.3.1 Gather, analyze, and communicate evidence of structure and properties of matter.					
		SC.2.3.1.A **Plan and conduct an investigation** to describe and classify different kinds of materials by their observable properties.			SC.5.3.1.A **Develop a model** to describe that matter is made of particles too small to be seen.
		SC.2.3.1.B **Analyze data obtained from testing different materials** to determine which materials have the properties that are best suited for an intended purpose.			SC.5.3.1.B **Measure and graph quantities** to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.
		SC.2.3.1.C **Analyze data** from tests of two objects **designed to solve the same problem** to compare the strengths and weaknesses of how each performs.			SC.5.3.1.C **Make observations and measurement**s to identify materials based on their properties.
		SC.2.3.1.D **Make observations to construct an evidence-based account** of how an object made of a small set of pieces can be disassembled and made into a new object.			SC.5.3.1.D **Conduct an investigation** to determine whether the mixing of two or more substances results in new substances.
Physical Science					

Topic 4: Energy					
Grade K	**Grade 1**	**Grade 2**	**Grade 3**	**Grade 4**	**Grade 5**
Energy: Conservation and Transfer (SC.4.4)					
SC.4.4.2 Gather, analyze and communicate evidence of energy conservation and transfer.					
				SC.4.4.2.A Use evidence to **construct an explanation** relating the speed of an object to the energy of that object.	
				SC.4.4.2.B **Make observations** to provide evidence that energy can be transferred from place to place by sound, light, heat, and electrical currents.	
				SC.4.4.2.C **Ask questions** and predict outcomes about the changes in energy that occur when objects collide.	
				SC.4.4.2.D Apply scientific ideas to **design, test, and refine a device** that converts	

				energy from one form to another.	
				SC.4.4.2.E **Plan and carry out fair tests in which variables are controlled** and failure points are considered to identify aspects of a model or prototype that can be improved.	
				SC.4.4.2.F **Obtain and combine information** to describe that energy and fuels are derived from natural resources and that their uses affect the environment.	

Physical Science Topic 5: Chemical Reactions					
Grade K	**Grade 1**	**Grade 2**	**Grade 3**	**Grade 4**	**Grade 5**

Life Science Topic 6: Structure and Function					
Grade K	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Structure, Function, and Information Processing (SC.1.6 and SC.4.6)					

SC.1.6.2 Gather, analyze, and communicate evidence to show the relationship between structure and function in living things. SC.4.6.3 Gather and analyze data to communicate an understanding of structure, function and information processing of living things.					
	SC.1.6.2.A **Use materials to design a solution** to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.			SC.4.6.3.A **Develop a model** to describe that light reflecting from objects and entering the eyes allows objects to be seen.	
	SC.1.6.2.B **Develop a simple sketch, drawing, or physical model** to illustrate how the shape of an object helps it function as needed to solve a given problem.			SC.4.6.3.B **Construct an argument** that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.	
	SC.1.6.2.C **Read texts and use media to determine** patterns in a behavior of parents and offspring that help offspring survive.			SC.4.6.3.C **Use a model** to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information.	
	SC.1.6.2.D **Make observations to construct an evidence-based account** that young plants and animals are like, but not				

	exactly like, their parents.				
Life Science Topic 7: Interdependent Relationships in Ecosystems					
Grade K	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment (SC.K.7.2) Interdependent Relationships in Ecosystems (SC.2.7) Interdependent Relationships in Ecosystems (SC.3.7)					
SC.K.7.2 Gather, analyze, and communicate evidence of interdependent relationships in ecosystems. SC.3.7.2 Gather and analyze data to communicate an understanding of the interdependent relationships in ecosystems.					
SC.K.7.2.A **Use observations to describe** patterns of what plants and animals (including humans) need to survive.		SC.2.7.2.A **Plan and conduct an investigation** to determine if plants need sunlight and water to grow.	SC.3.7.2.A **Construct an argument** that some animals form groups that help members survive.		
SC.K.7.2.B **Construct an argument supported by evidence for how** plants and animals (including humans) can change the environment to meet their needs.		SC.2.7.2.B **Develop a simple model** that mimics the function of an animal in dispersing seeds or pollinating plants.	SC.3.7.2.B **Analyze and interpret data** from fossils to provide evidence of the organisms and environments in which they lived long ago.		
SC.K.7.2.C **Use a model to represent** the relationship between the needs of different plants or animals (including humans) and the places they live.		SC.2.7.2.C **Make observations** of plants and animals **to compare** the diversity of life in different habitats.	SC.3.7.2.C **Construct an argument** with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.		

SC.K.7.2.D **Communicate solutions** that will increase the positive <u>impact of</u> humans on the land, water, air, and/or other living things in the local environment.			SC.3.7.2.D **Make a claim about the merit of a solution to a problem** caused when <u>the environment changes and the types of plants and animals that live there</u> may change.		
			SC.3.7.2.E **Generate and compare multiple possible solutions to a problem** based on how well each is likely to meet the criteria and constraints of the problem.		
Life Science **Topic 8: Matter and Energy in Organisms and Ecosystems**					
Grade K	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Matter and Energy in Organisms and Ecosystems (SC.5.8)					
SC.5.8.2 Gather and analyze data to communicate understanding of matter and energy in organisms and ecosystems.					
					SC.5.8.2.A **Use models** to describe that energy in animals' food (used for body repair, growth, and motion and to maintain body warmth) was once <u>energy from the sun.</u>

					SC.5.8.2.B **Support an argument** that plants get the materials they need for growth chiefly from air and water.
					SC.5.8.2.C **Develop a model** to describe the movement of matter among plants, animals, decomposers, and the environment.
Life Science **Topic 9: Heredity: Inheritance and Variation of Traits**					
Grade K	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Inheritance and Variation: Life Cycles and Traits (SC.3.9)					
SC.3.9.3 Gather and analyze data to communicate an understanding of inheritance and variation of traits though life cycles and environmental influences.					
			SC.3.9.3.A **Develop models** to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.		
			SC.3.9.3.B **Analyze and interpret data** to provide evidence that plants and animals have traits inherited from parents and that variation of these		

			traits exists in a group of similar organisms.		
			SC.3.9.3.C **Use evidence to support the explanation** that traits can be influenced by the environment.		
			SC.3.9.3.D **Use evidence to construct an explanation** for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.		

Life Science Topic 10: Biological Evolution					
Grade K	**Grade 1**	**Grade 2**	**Grade 3**	**Grade 4**	**Grade 5**

Earth & Space Science Topic 11: Space Systems					
Grade K	**Grade 1**	**Grade 2**	**Grade 3**	**Grade 4**	**Grade 5**
Space Systems: Patterns and Cycles (SC.1.11) Space Systems: Stars and Solar System (SC.5.11)					

SC.1.11.3 Gather, analyze, and communicate evidence of patterns and cycles of space systems. SC.5.11.3 Gather and analyze data to communicate understanding of space systems: Earth's stars and solar system.					
	SC.1.11.3.A **Use observations** of the sun, moon, and stars to describe patterns that can be predicted.				SC.5.11.3.A **Support an argument** that the gravitational force exerted by Earth on objects is directed down.
	SC.1.11.3.B **Make observations** at different times of the year to relate the amount of daylight to the time of year.				SC.5.11.3.B **Support an argument** that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth.
					SC.5.11.3.C **Represent data in graphical displays** to reveal patterns of daily changes in the length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.
Earth & Space Science **Topic 12: Weather and Climate**					
Grade K	**Grade 1**	**Grade 2**	**Grade 3**	**Grade 4**	**Grade 5**
Weather and Climate (SC.K.12 and SC.3.12)					
SC.K.12.3 Gather, analyze, and communicate evidence of weather and climate. SC.3.12.4 Gather and analyze data to communicate an understanding of weather and climate.					

SC.K.12.3.A **Use and share observations** of local weather conditions to describe patterns over time.			SC.3.12.4.A **Represent data** in table, pictograph, and bar graph displays to describe typical weather conditions expected during a particular season.		
SC.K.12.3.B **Ask questions to obtain information** about the purpose of weather forecasting to prepare for, and respond to, severe weather.			SC.3.12.4.B **Obtain and combine information** to describe climates in different regions of the world.		
SC.K.12.3.C **Make observations to determine** the effect of sunlight on Earth's surface.			SC.3.12.4.C **Make a claim about the merit of a design solution** that reduces the impacts of a weather-related hazard.		
SC.K.12.3.D **Use tools and materials to design and build a structure** that will reduce the warming effect of sunlight on an area.					
SC.K.12.3.E **Ask questions, make observations, and gather information** about a situation people want to change to **define a simple problem that can be solved** through the development of a new or improved object or tool.					

Earth & Space Science Topic 13: Earth's Systems					
Grade K	**Grade 1**	**Grade 2**	**Grade 3**	**Grade 4**	**Grade 5**
Earth's Systems: Processes That Shape the Earth (SC.2.13 and SC.4.13) **Earth's Systems (SC.5.13)**					
SC.2.13.3 Gather, analyze, and communicate evidence of the processes that shape the earth. SC.4.13.4 Gather and analyze data to communicate an understanding of Earth's systems and processes that shape the Earth. SC.5.13.4 Gather and analyze data to communicate understanding of Earth's systems.					
		SC.2.13.3.A **Use information from several sources to provide evidence** that Earth events can occur quickly or slowly.		SC.4.13.4.A **Identify evidence** from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.	SC.5.13.4.A **Develop a model** using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.
		SC.2.13.3.B **Compare multiple solutions designed to** slow or prevent wind or water from changing the shape of the land.		SC.4.13.4.B **Make observations and/or measurements** to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.	SC.5.13.4.B **Describe and graph** the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.
		SC.2.13.3.C **Develop a model to represent** the shapes and kinds of land and bodies of water in an area.		SC.4.13.4.C **Analyze and interpret data** from maps to describe patterns of Earth's features.	SC.5.13.4.C **Obtain and combine information** about ways individual communities use science ideas to protect the Earth's resources and environment.

		SC.2.13.3.D **Obtain information to identify** where water is found on Earth and that it can be solid or liquid.		SC.4.13.4.D **Generate and compare multiple solutions** to reduce the impacts of natural Earth processes on humans.	SC.5.13.4.D **Define a simple design problem** that can be solved by applying scientific ideas about the conservation of fresh water on Earth.
					SC.5.13.4.E **Define a simple design problem** reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
Earth & Space Science Topic 14: History of Earth					
Grade K	**Grade 1**	**Grade 2**	**Grade 3**	**Grade 4**	**Grade 5**
Earth & Space Science Topic 15: Sustainability					
Grade K	**Grade 1**	**Grade 2**	**Grade 3**	**Grade 4**	**Grade 5**

K-5 Instructional Materials

Grade Level / Course	Resource(s)
Kindergarten	Amplify Science Grade K
First Grade	Amplify Science Grade 1
Second Grade	Amplify Science Grade 2
Third Grade	Amplify Science Grade 3
Fourth Grade	Amplify Science Grade 4
Fifth Grade	Amplify Science Grade 5

6-12 Science Standards Matrix

Physical Science 6-12 Topic 1: Forces and Interactions						
Grade 6	**Grade 7**	**Grade 8**	**Grade 9**	**Grade 10**	**Grade 11**	**Grade 12**
Forces and Interactions (SC.8.1 and SC.HS.1)						
SC.8.1.1 Gather, analyze, and communicate evidence of forces and interactions. SC.HS.1.1 Gather, analyze, and communicate evidence of forces and interactions.						
		SC.8.1.1.A Apply Newton's Third Law to **design a solution** to a problem involving the motion of two colliding objects.			SC.HS.1.1.A **Analyze data** to support the claim that Newton's Second Law of Motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.	
		SC.8.1.1.B **Develop a model** to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.			SC.HS.1.1.B **Use mathematical representations** to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.	
		SC.8.1.1.C **Plan an investigation** to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.			SC.HS.1.1.C **Apply science and engineering ideas to design, evaluate, and refine** a device that minimizes the force on a macroscopic object during a collision.	

		SC.8.1.1.D **Ask questions** about data to determine the factors that affect the strength of electrical and magnetic forces.			SC.HS.1.1.D **Use mathematical representations** of Newton's Law of Gravitation and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects.	
		SC.8.1.1.E **Construct and present arguments** using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.			SC.HS.1.1.E **Plan and conduct an investigation** to provide evidence that an electrical current can produce a magnetic field and that a changing magnetic field can produce an electrical current.	
		SC.8.1.1.F **Conduct an investigation** and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.				
Physical Science **Topic 2: Waves and Electromagnetic Radiation**						
Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Waves and Electromagnetic Radiation (SC.8.2 and SC.HS.2)						

SC.8.2.2 Gather, analyze, and communicate evidence of waves and electromagnetic radiation. SC.HS.2.2 Gather, analyze, and communicate evidence of the interactions of waves.						
		SC.8.2.2.A **Use mathematical representations** to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.			SC.HS.2.2.A **Use mathematical representations** to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.	
		SC.8.2.2.B **Develop and use a model** to describe that waves are reflected, absorbed, or transmitted through various materials.			SC.HS.2.2.B **Evaluate questions** about the advantages of using digital transmission and storage of information.	
		SC.8.2.2.C **Integrate qualitative scientific and technical information** to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.			SC.HS.2.2.C **Evaluate the claims, evidence, and reasoning** behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.	
					SC.HS.2.2.D **Evaluate the validity and reliability of claims** in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.	

					SC.HS.2.2.E **Communicate technical information** about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.	
Physical Science **Topic 3: Structure and Properties of Matter**						
Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Structure and Properties of Matter (SC.7.3 and SC.HS.3)						
SC.7.3.1 Gather, analyze, and communicate evidence of the structure, properties, and interactions of matter. SC.HS.3.3 Gather, analyze, and communicate evidence of the structure, properties, and interactions of matter.						
	SC.7.3.1.A **Develop models** to describe the atomic composition of simple molecules.			SC.HS.3.3.A **Use the periodic table as a model** to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.		
	SC.7.3.1.B **Gather and make sense of information** to describe that synthetic materials come from natural resources and impact society.			SC.HS.3.3.B **Plan and conduct an investigation** to gather evidence to compare the structure of substances at the macro scale to infer the strength of electrical forces between particles.		

	SC.7.3.1.C **Develop a model** that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.			SC.HS.3.3.C **Develop models** to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.		
				SC.HS.3.3.D **Communicate scientific and technical information** about why the molecular level structure is important in the functioning of designed materials.		
Physical Science **Topic 4: Energy**						
Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Energy (SC.6.4 and SC.8.4 and SC.HS.4)						
SC.6.4.1 Gather, analyze, and communicate evidence of energy. SC.8.4.3 Gather, analyze, and communicate evidence of energy. SC.HS.4.4 Gather, analyze, and communicate evidence of the interactions of energy.						
SC.6.4.1.A Apply scientific principles to **design, construct, and test a device** that either minimizes or maximizes thermal energy transfer.		SC.8.4.3.A **Construct and interpret graphical displays of data** to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.			SC.HS.4.4.A **Create a computational model** to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy	

					flows in and out of the system are known.	
SC.6.4.1.B **Define the criteria and constraints of a design problem** with sufficient precision to ensure a successful solution, taking into account relevant scientific principle and potential impacts on people and the natural environment that may limit possible solutions.		SC.8.4.3.B **Develop a model** to describe that when the arrangement of objects interacting at a distance changes, then different amounts of potential energy are stored in the system.			SC.HS.4.4.B **Develop and use models** to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motion of particles (objects) and energy associated with the relative positions of particles (objects).	
SC.6.4.1.C **Plan an investigation** to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.					SC.HS.4.4.C **Design, build, and refine a device** that works within given constraints to convert one form of energy into another form of energy.	
SC.6.4.1.D **Construct, use, and present arguments** to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.					SC.HS.4.4.D **Analyze a major global challenge** to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.	

					SC.HS.4.4.E **Plan and conduct an investigation** to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).	
					SC.HS.4.4.F **Develop and use a model** of two objects interacting through electrical or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction.	
Physical Science **Topic 5: Chemical Reactions**						
Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Chemical Reactions (SC.7.5 and SC.HS.5)						
SC.7.5.2 Gather, analyze, and communicate evidence of chemical reactions. SC.HS.5.5 Gather, analyze, and communicate evidence of chemical reactions.						
	SC.7.5.2.A **Analyze and interpret data** on the properties of substances before and after the substances interact to determine if			SC.HS.5.5.A **Construct and revise an explanation** for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in		

	a chemical reaction has occurred.			the periodic table, and knowledge of the patterns of chemical properties.		
	SC.7.5.2.B **Develop and use a model** to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.			SC.HS.5.5.B **Develop a model** to illustrate that the release or absorption of energy from a chemical reaction system depends on the changes in total bond energy.		
	SC.7.5.2.C **Undertake a design project** to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.			SC.HS.5.5.C **Apply scientific principles** and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.		
	SC.7.5.2.D **Analyze data from tests** to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.			SC.HS.5.5.D **Refine the design** of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.		
				SC.HS.5.5.E **Design a solution** to a complex real-world problem by breaking it down into		

				smaller, more manageable problems that can be solved through engineering.		
				SC.HS.5.5.F **Use mathematical representations** to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.		

Life Science 6-12 **Topic 6: Structure and Function**						
Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Structure and Function and Information Processing (SC.6.6) **Structure and Function (SC.HS.6)**						
SC.6.6.2 Gather, analyze, and communicate evidence of the relationship between structure and function in living things. SC.HS.6.1 Gather, analyze, and communicate evidence of the relationship between structure and function in living things.						
SC.6.6.2.A **Conduct an investigation** to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.			SC.HS.6.1.A **Construct an explanation** based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells.			
SC.6.6.2.B **Develop and use a model** to describe			SC.HS.6.1.B **Develop and use a model** to illustrate the hierarchical organization			

the function of a cell as a whole and ways parts of cells contribute to the function.			of interacting systems that provide specific functions within multicellular organisms.			
SC.6.6.2.C **Use argument supported by evidence** for how the body is a system of interacting subsystems composed of groups of cells.			SC.HS.6.1.C **Plan and conduct an investigation** to provide evidence that feedback mechanisms maintain homeostasis.			
SC.6.6.2.D **Gather and synthesize information** that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.			SC.HS.6.1.D **Use a model** to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.			
Life Science **Topic 7: Interdependent Relationships in Ecosystems**						
Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Interdependent Relationships in Ecosystems (SC.7.7 and SC.HS.7)						
SC.7.7.3 Gather, analyze, and communicate evidence of interdependent relationships in ecosystems. SC.HS.7.2 Gather, analyze, and communicate evidence of interdependent relationships in ecosystems.						
	SC.7.7.3.A **Construct an explanation** that predicts patterns of interactions among organisms across multiple ecosystems.		SC.HS.7.2.A **Use mathematical and/or computational representations to support explanations** of factors that affect carrying capacity of ecosystems at different scales.			

	SC.7.7.3.B **Evaluate competing design solutions** for maintaining biodiversity and ecosystem services.		SC.HS.7.2.B **Use mathematical representations** to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.			
	SC.7.7.3.C **Evaluate competing design solutions** using a systematic process to determine how well they meet the criteria and constraints of the problem.		SC.HS.7.2.C **Evaluate the claims, evidence, and reasoning** that the interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.			
	SC.7.7.3.D Apply scientific principles to **design** a method for monitoring and increasing positive human impact on the environment.		SC.HS.7.2.D **Evaluate the evidence** for the role of group behavior on individual and species' chances to survive and reproduce.			
			SC.HS.7.2.E **Design, evaluate, and refine a solution** for increasing the positive impacts of human activities on the environment and biodiversity.			
			SC.HS.7.2.F **Use a computer simulation** to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.			
Life Science **Topic 8: Matter and Energy in Organisms and Ecosystems**						

Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Matter and Energy in Organisms and Ecosystems (SC.7.8 and SC.HS.8)						
SC.7.8.4 Gather, analyze, and communicate evidence of the flow of energy and cycling of matter in organisms and ecosystems. SC.HS.8.3 Gather, analyze, and communicate evidence of the flow of energy and cycling of matter in organisms and ecosystems.						
	SC.7.8.4.A **Construct a scientific explanation** based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.		SC.HS.8.3.A **Use a model** to illustrate how photosynthesis transforms light energy into stored chemical energy.			
	SC.7.8.4.B **Develop a model** to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as matter moves through an organism.		SC.HS.8.3.B **Construct and revise an explanation** based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other molecules to form the four basic macromolecules.			
	SC.7.8.4.C **Analyze and interpret data** to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.		SC.HS.8.3.C **Use a model** to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules are broken and bonds in new compounds are formed resulting in a net transfer of energy.			
	SC.7.8.4.D **Develop a model** to describe the cycling of matter and flow of energy among		SC.HS.8.3.D **Construct and revise an explanation** based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.			

	living and nonliving parts of an ecosystem.					
	SC.7.8.4.E **Construct an argument** supported by evidence that changes to physical or biological components of an ecosystem affect populations.		SC.HS.8.3.E **Use mathematical representations** to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.			
			SC.HS.8.3.F **Develop a model** to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.			
Life Science **Topic 9: Heredity: Inheritance and Variation of Traits**						
Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Growth, Development, and Reproduction of Organisms (SC.6.9) **Heredity: Inheritance and Variation of Traits (SC.8.9 and SC.HS.9.4)**						
SC.6.9.3 Gather, analyze, and communicate evidence of the inheritance and variation of traits. SC.8.9.4 Gather, analyze, and communicate evidence of the inheritance and variation of traits. SC.HS.9.4 Gather, analyze, and communicate evidence of the inheritance and variation of traits.						
SC.6.9.3.A **Construct an argument** based on evidence for how plant and animal adaptations affect the probability of successful reproduction.		SC.8.9.4.A **Develop and use a model** to describe why structural changes to genes (mutations) may result in harmful, beneficial, or neutral effects to structure and function of organisms.	SC.HS.9.4.A. **Develop and use a model** to explain the relationships between the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.			

SC.6.9.3.B **Construct a scientific explanation** based on evidence for how environmental and genetic factors influence the growth of organisms.		SC.8.9.4.B **Gather and synthesize information** about technologies that have changed the way humans influence inheritance of desired traits in organisms.	SC.HS.9.4.B **Make and defend a claim** based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.			
SC.6.9.3.C **Develop and use a model** to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.			SC.HS.9.4.C **Apply concepts of statistics and probability** to explain the variation and distribution of expressed traits in a population.			
Life Science **Topic 10: Biological Evolution**						
Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Natural Selection and Adaptations (SC.8.10) **Biological Evolution (SC.HS.10)**						
SC.8.10.5 Gather, analyze, and communicate evidence of natural selection and adaptations. SC.HS.10.5 Gather, analyze, and communicate evidence of biological evolution.						
		SC.8.10.5.A **Analyze and interpret data** for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.	SC.HS.10.5.A **Communicate scientific** information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.			

		SC.8.10.5.B **Apply scientific ideas to construct an explanation** for the anatomical similarities and differences among and between modern and fossil organisms to infer evolutionary relationships.	SC.HS.10.5.B **Construct an explanation** based on evidence that natural selection primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.			
		SC.8.10.5.C **Construct an explanation** based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.	SC.HS.10.5.C **Apply concepts of statistics and probability** to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.			
		SC.8.10.5.D **Use mathematical representations** to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.	SC.HS.10.5.D **Construct an explanation** based on evidence for how natural selection leads to adaptation of populations.			
			SC.HS.10.5.E **Evaluate the evidence** supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.			

Earth & Space Science 6-12 Topic 11: Space Systems						
Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Space Systems (SC.8.11 and SC.HS.11)						
SC.8.11.6 Gather, analyze, and communicate evidence of the interactions among bodies in space. SC.HS.11.1. Gather, analyze, and communicate evidence to defend that the universe changes over time.						
		SC.8.11.6.A **Develop and use a model** of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.		SC.HS.11.1.A **Develop a model** based on evidence to illustrate the stages of stars, like the sun, and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.		
		SC.8.11.6.B **Develop and use a model** to describe the role of gravity in the motions within the galaxy and the solar system.		SC.HS.11.1.B **Construct an explanation** of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.		
		SC.8.11.6.C **Analyze and**		SC.HS.11.1.C **Communicate**		

		interpret data to determine scale properties of objects in the solar system.		**scientific ideas** about the way stars, throughout their stellar stages, produce elements.		
					SC.HS.11.1.D **Use mathematical or computational representations** to predict the motion of orbiting objects in the solar system.	
Earth & Space Science **Topic 12: Weather and Climate**						
Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Weather and Climate (SC.6.12 and SC.HS.12)						
SC.6.12.4 Gather, analyze, and communicate evidence of factors and interactions that affect weather and climate. SC.HS.12.2 Gather, analyze, and communicate evidence to support that Earth's climate and weather are influenced by energy flow through Earth systems.						
SC.6.12.4.A **Collect data** to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions.			SC.HS.12.2.A **Construct an explanation based on evidence** for how the sun's energy moves among Earth's systems.			
SC.6.12.4.B **Develop and use a model** to describe how unequal heating and rotation of the Earth cause patterns			SC.HS.12.2.B **Use a model** to describe how variations in the flow of energy into and out of Earth's systems			

of atmospheric and oceanic circulation that determine regional climates.			result in changes in climate.			
SC.6.12.4.C **Ask questions** to clarify evidence of the factors that have caused the change in global temperatures over thousands of years.			SC.HS.12.2.C **Analyze geoscience data** and the results from global climate models to make an evidence-based forecast of the current rate and scale of global or regional climate changes.			
SC.6.12.4.D **Analyze and interpret data** on weather and climate to forecast future catastrophic events and inform the development of technologies to mitigate their effect.			SC.HS.12.2.D **Evaluate the validity and reliability** of past and present models of Earth conditions to make projections of future climate trends and their impacts.			
Earth & Space Science **Topic 13: Earth's Systems**						
Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Earth's Systems (SC.6.13 and SC.7.13 and SC.HS.13)						
SC.6.13.5 Gather, analyze, and communicate evidence of the flow of energy and cycling of matter associated with Earth's materials and processes. SC.7.13.5 Gather, analyze, and communicated evidence of the flow of energy and cycling of matter associated with Earth's materials and processes. SC.HS.13.3 Gather, analyze, and communicate evidence to defend the position that Earth's systems are interconnected and impact one another.						

SC.6.13.5.A **Develop a model** to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.	SC.7.13.5.A **Develop a model** to describe the cycling of Earth's materials and the flow of energy that drives this process.		.		SC.HS.13.3.A **Analyze geoscience data** to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems	
	SC.7.13.5.B **Construct a scientific explanation** based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.		.		SC.HS.13.3.B **Develop a model** based on evidence of Earth's interior to describe the cycling of matter	
	SC.7.13.5.C **Construct an argument** supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.				SC.HS.13.3.C **Construct an argument based on evidence** to explain the multiple processes that cause Earth's plates to move.	
				SC.HS.13.3.D **Plan and conduct an**		

				investigation of the properties of water and their effects on Earth materials, surface processes, and groundwater systems.		
			SC.HS.13.3.E **Develop a quantitative model** to describe the cycling of carbon and other nutrients among the hydrosphere, atmosphere, geosphere, and biosphere, today and in the geological past	.		
Earth & Space Science **Topic 14: History of Earth**						
Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
History of Earth (SC.7.14 and SC.8.14 and SC.HS.14)						
SC.7.14.6 Gather, analyze, and communicate evidence to explain Earth's history. SC.8.14.7 Gather, analyze, and communicate evidence to explain Earth's history. SC.HS.14.4 Gather, analyze, and communicate evidence to interpret Earth's history.						
	SC.7.14.6.A **Construct an explanation** based on evidence for how geoscience processes have changed Earth's surface at varying	SC.8.14.7.A **Construct a scientific explanation** based on evidence from rock strata for how the geologic time scale is used to organize Earth's			SC.HS.14.4.A **Evaluate evidence** of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the differences in age, structure, and composition	

	time and spatial scales.	4.6- billion-year-old history.			of crustal and sedimentary rocks.	
	SC.7.14.6.B **Analyze and interpret data** on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of past plate motions.				SC.HS.14.4.B **Apply scientific reasoning** and evidence from ancient Earth materials, meteorites, and other planetary surfaces to reconstruct Earth's formation and early history.	
	SC.7.14.6.C **Analyze and interpret data** on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.				SC.HS.14.4.C **Develop a model** to illustrate how Earth's internal and surface processes operate over time to form, modify, and recycle continental and ocean floor features.	
			SC.HS.14.4.D **Construct an argument** based on evidence to validate coevolution of Earth's systems and life on Earth.			
Earth & Space Science Topic 15: Sustainability						
Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12

Sustainability (SC.HS.15)						
SC.HS.15.5 Gather, analyze, and communicate evidence to describe the interactions between society, environment, and economy.						
			SC.HS.15.5.A **Construct an explanation based on evidence** for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.			
			SC.HS.15.5.B **Evaluate competing design solutions** for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.			
			SC.HS.15.5.C **Create a computational simulation** to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.			
			SC.HS.15.5.D **Evaluate or refine a technological solution** that increases positive			

			impacts of human activities on natural systems.			
					SC.HS.15.5.E **Evaluate a solution to a complex real-world problem** based on prioritized criteria and tradeoffs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.	
				SC.HS.15.5.F **Use a computational representation** to illustrate the relationships among Earth systems and the degree to which those relationships are being modified due to human activity.		
Science 6	Science 7	Science 8	Biology	- Physical Science: Chemistry - Chemistry	- Physical Science: Physics - Physics - AP Physics 1: Algebra-Based	

6 - 8 Instructional Materials

Grade Level / Course	Resource(s)
Science 6	Amplify Science 6

Science 7	Amplify Science 7
Science 8	Amplify Science 8

9 - 12 Instructional Materials

Grade Level / Course	Resource(s)
Biology	Miller & Levine Biology Published by Pearson
Chemistry	Experience Chemistry Published by Pearson
Physics	Conceptual Physics with online “Mastering Physics” Published by Pearson
Physical Science Chemistry	Conceptual Physics with online “Mastering Physics” Published by Pearson
Physical Science Physics	Conceptual Physics with online “Mastering Physics” Published by Pearson
Astronomy	Starry Night Digital Platform
Environmental Science	Environmental Science, 16th Student Edition + MindTap Miller/Spoolman 16th Edition Published by Cengage
Human Anatomy and Physiology	Hole’s Essentials of Human Anatomy and Physiology Published by McGraw Hill
Zoology	Zoology 11th Edition Published by McGraw Hill
AP Biology	AP Edition Campbell Biology in Focus 3rd edition Published by Pearson
AP Chemistry	Chemistry by Zumdahl and Zumdahl 10th Edition Published by Cengage
AP Environmental Science	Environmental Science for the AP® Course Third Edition by Andrew Friedland; Rick Relyea Published by Bedford, Freeman, & Worth
AP Physics 1	

AP Physics 2	College Physics for the AP® Physics 1 Course 2e & CP NC HS College Physics 2e AP® Physics 2 Course for All Schools & CM SaplingPlus for College Physics for AP® Physics 2

AGENDA SUMMARY SHEET

Agenda Item: Approval of 6-12 Skilled and Technical Sciences Instructional Materials and Framework: Part II

Meeting Date: May 4, 2020

Background /Description:

The 6-12 Skilled and Technical Sciences Millard Framework was approved by the Board of Education in 2019. The new framework contained stronger content connections to bridge middle school and high school programs including a new course for 8th grade students, the formation of three high school pathways offering eight programs of study, and the formation of an Advanced Topics course. The next step in the curriculum process was to select and develop instructional materials and equipment for the courses. Millard teachers used a combination of purchased, open education resources (OER), and teacher created materials to develop the materials for these courses. The 6-12 Skilled and Technical Sciences Curriculum Planning Committee reconvened to review the results forwarded by the 6-12 Skilled and Technical Sciences Instructional Materials Selection Committee to form their recommendations. The recommendations from the 6-12 Curriculum Planning Committee members were reviewed by the Office of Educational Services. Tonight we bring those materials to the Board for approval.

The attached recommendations:

- Best meet the standards and indicators within the 6-12 Skilled and Technical Sciences Framework while providing student choice through a variety of modules, projects, and courses to explore and study.
- Provide updated materials including a textbook, technology, and equipment for middle school and high school Skilled and Technical Science Classrooms.
- Pending program budgeting, the estimated cost is $871,901.00 for full implementation in 2020-2021.

Action Desired: Approval of 6-12 Skilled and Technical Sciences Instructional Materials and Framework- Part II

Policy / Strategic Plan Reference: Strategy 2: We will develop and implement plans to differentiate and expand our instructional delivery system to meet each student's needs in a changing world.

Responsible Person(s): Dr. Heather Phipps, Dr. Tony Weers, Dr. Melanie Olson, Tami Whitted

Superintendent's Signature:

Proposal for Skilled and Technical Sciences Instructional Materials

Based on the recommendations from the 6-12 Skilled and Technical Sciences Curriculum Planning Committee, the Office of Educational Services is proposing the following instructional materials for adoption for the 2020-2021 school year.

Skilled and Technical Sciences Courses and Instructional Materials Selections		
Middle School		
Modules/Teacher Resources	$20,730.00	Millard teacher created modules exposing students to construction, engineering, manufacturing, and technology projects. See Primary Instructional Resources Table below.
Equipment/Supplies	$149,679.00	See Equipment/Supplies/Technology table below.
Technology	$600.00	See Equipment/Supplies/Technology table below.
Total	$171,009.00	
High School		
Textbooks//Teacher Resources	$12,465.00	Millard created instructional resources. See Primary Instructional Resources Table below.
Equipment/Supplies	$688,427.00	See Equipment/Supplies/Technology table below.
Technology	$0.00	See Equipment/Supplies/Technology table below.
Total	$700,892.00	

STS Primary Instructional Resources	
Pathway/Course Name	**Primary Instructional Resources**
Skilled and Technical Sciences 6	Millard-created Project Modules ● 3D Modeling ● Applied Design ● Automation ● Balloons ● Carpentry ● Circuitry ● CNC Design ● Drafting ● Electronics ● Engineering Trusses ● Hang Gliding ● Manufacturing ● Processing Plastics ● Robotics ● Rocketry ● Simple & Powered Machines ● Super Clip ● Wall Construction
Skilled and Technical Sciences 7	Millard-created Project Modules ● Additive Manufacturing ● Aerodynamic Design ● Alternative Energy ● Electricity ● Electronics ● Engineering Bridges ● Engineering Towers ● Flight Technology ● Home Design ● Home Maintenance ● Robotics ● Rocketry & Space ● Rocket Science ● Smart/Eco Home
Skilled and Technical Sciences 8	Millard-created Project Modules: All 7th Grade Modules Plus... ● 3D Design/Scanning ● CNC Manufacturing ● Engines ● Lasers ● Metals ● Woodworking
Engineering & Design 8	**Resources for Teachers and Students:** ● Millard-created Lessons and Project Modules
Construction Pathway	**Resources for Teachers and Students:** ● Exploring Woodworking: Goodheart - Wilcox (classroom sets) ● Millard-created Lessons and Projects and OER
Engineering Pathway	**Resources for Teachers Only:** ● Building Construction Illustrated: Wiley ● Residential Design using Autodesk Revit 2020: SDC Publications ● Architecture: Residential Drafting and Design: Goodheart - Wilcox

	Resources for Students: ● Millard-created Lessons and Projects and OER
Manufacturing Pathway	**Resources for Teachers and Students:** ● Millard-created Lessons and Projects and OER ● Briggs & Stratton Small Engine Textbook: Briggs & Stratton

STS Equipment/Supplies/Technology		
Pathway Name	**Equipment/Supplies**	**Technology**
Middle School	Hand drafting tools, 3D printers, circuit kits, 3D scanner, Smart Home Kits, Flight simulation yokes, laser engravers, CNC routers, hand tools, robotics kits	Student devices and limited dedicated desktop machines to run equipment, software
Construction Pathway	Hand tools, laser cutters, bandsaws, and tools for drywall, tiling, interior and exterior finishing	Student devices and dedicated desktop machines, virtual computing capability through the Citrix environment, software
Engineering Pathway	Robotics kits, 3D printers, drones, soldering tools, and desktop CNC routers, small engines	Student devices and dedicated desktop machines, virtual computing capability through the Citrix environment, software
Manufacturing Pathway	Foundry safety clothing, welding safety clothing, grinders, drill presses, vertical bandsaws, small engines, mechanics tools, parts washer, shop vac for metals, CNC mills, CNC lathes, mill probing systems and 4th axis attachments, and manifold systems	Student devices and dedicated desktop machines, virtual computing capability through the Citrix environment, software

Estimated cost for adoption:
Estimated the total cost at $871,901.00

6-12 Skilled and Technical Sciences Curriculum Planning Committee Meeting Recommendations
The 6-12 Industrial Technology Curriculum Planning Committee met digitally on March 24, 2020 to review the findings of the 6-12 Skilled and Technical Sciences Instructional Materials/Curriculum Writing Committees proposals. Middle and High School teachers were represented on this committee along with district and community stakeholders. A summary of the four Instructional Materials Committees work was provided. Members of the 6-12 Skilled and Technical Sciences Curriculum Planning Committee reviewed and discussed the results and approved to move them forward as recommendations via Google Form.

6-12 Skilled and Technical Sciences Instructional Materials/Curriculum Writing Committee Results
Four committees met on select dates from October 2019 to March 2020 to select textbooks, technology, and resources for a total of 22 high school courses and 38 middle school modules. Members were first asked to review the course description, the 6-12 Skilled and Technical Sciences Framework, and standards and indicators for each grade level. This was followed by either whole group or small group discussion of selection criteria for ideal textbooks, materials, equipment and technology.

Teachers met in STS pathway teams to preview and analyze strengths and potential challenges of multiple textbooks that were obtained from various vendors via teacher recommendation or strong course alignment. The committees then compared and evaluated each potential textbook according to the district approved 6-12 Skilled and Technical Science Standards and Indicators as well as their own criteria. Evaluation forms were completed for each course including the course description, selection criteria for textbooks and supplemental materials, rationale for final decision, and recommendation for primary resources. Many groups spent time in between sessions for further research, inspection, and sharing among PLCs. This allowed for better decision making and fiscally responsible selection of resources, particularly for the new courses beginning next fall.

6-8 STS Instructional Materials/Curriculum Writing Committee Summary
On October 30, 2019, November 17, 2019, December 6, 2019, January 17, 2020, January 31, 2020, February 11, 2020 and February 24, 2020, writing team members met to write course guides and instructional materials for the 4 middle school STS courses. This committee decided to discontinue the use of a purchased program and instead develop our own projects that better prepare students for the pathways offered in high school as well as capitalize on current trends in the field such as 3D printing, robotics, and smart/eco home tools. Google Sites will be utilized to deliver instruction and directions for projects. All modules will include a hands on project and/or design element. Teacher resources were created to accompany these Sites to ensure equity in programs through six middle schools. Writing work will continue through the school year and summer for STS 6, 7, and 8. During the first semester of 2020-2021, writers will reconvene to develop materials for Engineering & Design 8.

9-12 Construction Pathway Instructional Materials/Curriculum Writing Committee Summary
On November 13, 2019, January 29, 2020 and March 7, 2020 writing team members met to review instructional materials and write course guides. This committee decided that only one textbook was necessary to update their instructional materials as many of the existing textbooks were in good condition and not often used in favor of digital open education resources. Teachers realized the advantages of a more hands on, project based curriculum and have increased the number of projects and products students are creating. The addition of a Construction program of study facilitated the need for job site equipment and opportunities for students. Equipment, materials, and lab space was evaluated to make these projects possible. The equipment proposal reflects these needs.

9-12 Engineering Pathway Instructional Materials/Curriculum Writing Committee Summary

On November 21, 2019, December 2, 2019, January 28, 2020, and March 2, 2020 writing team members met to review instructional materials and write course guides. This committee decided that textbooks were needed for teachers to update their background knowledge and technology skills in the areas of design and civil engineering and architecture, but not needed for students as the world of engineering moves quickly and textbooks are outdated just as quickly. Again, open education resources will be utilized in partnership with hands on, project based learning to deliver robust experiences for students that are tailored to the needs in our community. Work will continue this summer to develop materials for these courses.

9-12 Manufacturing Pathway Instructional Materials/Curriculum Writing Committee Summary

On November 18, 2019, February 6, 2020, and February 28, 2020 writing team members met to review instructional materials and write course guides. Most of the work was focused on the added Small Engines course as many of the other manufacturing courses are well established and effective. After researching small engines, the Briggs and Stratton Company offers full educational kits including training, print and digital resources, tools, and engines for students to disassemble, learn about the systems required for an engine to run, and reassemble. This is an attractive option for MPS as this is a new course. All manufacturing courses updated the hands on projects and found open education resources to be utilized to deliver robust experiences for students that are tailored to the needs in our community.

Community Review Night

Instructional Materials - 6-12 Skilled and Technical Sciences

In addition to the instructional materials process noted above, an opportunity was provided to community members inviting them to preview the proposed materials and resources on Tuesday, March 10, 2020. A total of seven community members attended. Conversations centered around the structure of the course(s), opportunities for students in the trades in our community, and overall questions regarding curricular programs district-wide. No objections or concerns were noted.

6-12
Skilled and Technical Sciences Framework

Part 1: 6-12 Matrix
April 2019

Part 2: 6-12 Instructional Materials
May 2020

Notice of Non-Discrimination

The Millard School District does not discriminate on the basis of race, color, religion, national origin, gender, marital status, disability, age, or on any other basis prohibited by federal, state, or local laws in admission or access to or treatment of employment in its programs and activities. The following person has been designated to handle inquiries regarding the discrimination and harassment policies: Associate Superintendent of Human Resources, 5606 South 147 Street, Omaha, NE 68137 (402) 715-8200. The Associate Superintendent of Human Resources may delegate this responsibility as needed. Complaints by school personnel or job applicants regarding unlawful discrimination or unlawful harassment (including sexual harassment) shall follow the procedures of District Rule 4001.2. Complaints by students or parents regarding unlawful discrimination or unlawful harassment (including sexual harassment) shall follow the procedures of District Rule 5010.2.

Table of Contents

District Mission and Beliefs

6-12 Skilled and Technical Sciences Philosophy

District Mission:

The mission of the Millard Public Schools is to guarantee that each student demonstrates the character, knowledge, and skills necessary for personal excellence and responsible citizenship through an innovative, world-class educational community that engages and challenges all students.

District Beliefs:

We Believe:

- Each individual has worth.
- Individuals are responsible for their actions.
- Our greatest resource is people.
- Diversity enriches life.
- All people can learn.
- High expectations promote higher achievement.
- Achievement builds self-esteem; self-esteem promotes achievement.
- Shaping and developing character is the shared responsibility of the individual, family, school, and community
- All people are entitled to a safe, caring, and respectful environment.
- Responsible risk-taking is essential for growth.
- Educated and involved citizens are necessary to sustain our democratic society.
- All schools are accountable to the community.
- Public education benefits the entire community and is the shared responsibility of all.
- Shaping and developing character is the shared responsibility of the individual, family, school and community.
- Excellence is worth the investment.

6-12 Skilled and Technical Sciences Philosophy Statement:

MPS Skilled and Technical Sciences (STS) students apply academics and innovative technical problem solving skills that lead to continuing education and valuable employment opportunities.

Curriculum, Instruction, and Assessment
Written Curriculum - Content Standards **6110.1**

The Essential Learner Outcomes of the Millard Public Schools are the following:

MILLARD ESSENTIAL LEARNER OUTCOMES

· LANGUAGE ARTS · MATHEMATICS · SCIENCE · SOCIAL STUDIES ·
· FINANCIAL WELL-BEING · HUMAN RELATIONS · TECHNOLOGY · FINE AND PERFORMING ARTS · PERSONAL DEVELOPMENT AND WELL-BEING ·
· CRITICAL THINKING AND PROBLEM-SOLVING SKILLS · CREATIVITY AND INNOVATION ·
· COLLABORATION AND TEAMWORK · CITIZENSHIP AND PERSONAL RESPONSIBILITY ·

ACADEMIC SKILLS AND APPLICATIONS

Students will demonstrate proficiency by meeting established standards through course requirements and for assessments identified by the District for specific purposes. This proficiency, along with the successful completion of 230 credits and a Personal Learning Plan (PLP) is used for diploma granting or denial.

LANGUAGE ARTS

- Students will learn and apply reading skills and strategies to comprehend text.
- Students will apply writing skills and strategies to communicate.
- Students will learn and apply speaking, listening, and presentation skills and strategies to communicate.
- Students will identify, locate, and evaluate information.

MATHEMATICS

- Students will communicate number sense concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.
- Students will communicate geometric concepts and measurement concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.
- Students will communicate algebraic concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.
- Students will communicate data analysis/probability concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.

SCIENCE

- Students will combine scientific processes and knowledge with scientific reasoning and critical thinking to ask questions about phenomena and propose explanations based on gathered evidence.
- Students will integrate and communicate the information, concepts, principles, processes, theories, and models of the Physical Sciences to make connections with the natural and engineered world.
- Students will integrate and communicate the information, concepts, principles, processes, theories, and models of the Life Sciences to make connections with the natural and engineered world.
- Students will integrate and communicate the information, concepts, principles, processes, theories, and models of the Earth and Space Sciences to make connections with the natural and engineered world.

SOCIAL STUDIES

- Students will develop and apply the skills of civic responsibility to make informed decisions based upon knowledge of government at local, state, national and international levels.
- Students will utilize economic reasoning skills to make informed judgments and become effective participants in the economy at the local, state, national and international levels.
- Students will develop and apply spatial perspective and geographic skills to make informed decisions regarding issues and current events at local, state, national and international levels.
- Students will develop and apply historical knowledge and skills to research, analyze, and understand key concepts of past, current, and potential issues and events at the local, state, national, and international levels.

FINANCIAL WELL-BEING

- Demonstrate skills to manage financial resources for short and long term priorities.
- Analyze and make sound financial choices by using appropriate resources.

HUMAN RELATIONS

- Interact positively with all people.
- Understand ethnic and cultural differences.
- Apply awareness of current local, national and global news and world cultures and languages to communicate effectively.

TECHNOLOGY

- Obtain, organize, and communicate information electronically.
- Use a variety of technological resources to solve problems.
- Understands the ethical uses of information and technology related to privacy, intellectual property and cyber security issues.

FINE AND PERFORMING ARTS

- Experience and evaluate a variety of music, art, or drama.
- Recognize the value of a wide range of knowledge and experiences from the arts, culture and humanities.

PERSONAL DEVELOPMENT AND WELL-BEING

- Understand human growth and development.
- Identify the values of good nutrition and physical activity.
- Evaluate the impact of addictive substances and behaviors.
- Build positive social relationships with supportive friends and family in the community.
- Use resources to develop a personal education and career plan to meet goals and objectives.
- Communicate experiences, knowledge and skills identified in a résumé or portfolio and present a professional image when interviewing.

COLLEGE AND CAREER READINESS SKILLS

The following standards and indicators are not measured by district-wide assessments for diploma-granting or denial. Within the school setting, students in the Millard Public Schools will:

CRITICAL THINKING AND PROBLEM-SOLVING SKILLS

- Demonstrate the ability to reason critically, systematically, and logically to evaluate situations from multiple perspectives.
- Conduct research, gather input and analyze information necessary for decision-making.
- Develop and prioritize possible solutions with supporting rationale using valid research, historical context and balanced judgment.
- Demonstrate a willingness to learn new knowledge and skills.
- Exhibit the ability to focus, prioritize, organize and handle ambiguity.
- Recognize factors, constraints, goals and relationships in a problem situation.
- Evaluate solutions and determine the potential value toward solving the problem.

CREATIVITY AND INNOVATION

- Search for new ways to improve the efficiency of existing processes.
- Appreciate new and creative ideas of others.
- Use information, knowledge and experience to generate original ideas and challenge assumptions.
- Know when to curb the creative process and begin implementation.
- Determine the feasibility of improvements for ideas and concepts.
- Accept and incorporate constructive criticism into proposals for innovation.

COLLABORATION AND TEAMWORK

- Contribute to team-oriented projects, problem-solving activities and assignments.
- Engage team members, build consensus and utilize individual talents and skills.
- Anticipate potential sources of conflict to facilitate solutions.
- Demonstrate the ability to disagree with a team member without causing personal offense.
- Take responsibility for individual and shared group tasks.

CITIZENSHIP AND PERSONAL RESPONSIBILITY

- Respect the rights of others.
- Treat others in a considerate and non-demeaning manner.
- Respect diversity.
- Demonstrate the ability to manage time.
- Demonstrate the ability to follow directions.
- Develop the attributes of integrity, self-discipline, and positive attitude.
- Take personal responsibility for actions.
- Establish and execute plans to completion and persevere when faced with setbacks.
- Model behaviors that demonstrate reliability, dependability and commitment.
- Arrive on time to school, work, appointments or meetings adequately prepared and appropriately dressed.
- Comply with policies and regulations.
- Participate in school and/or community organizations.
- Engage in local government through attendance, participation and service.
- Demonstrate a respect for laws and regulations and those who enforce them.
- Consider the ethical implications and long-term consequences of decisions and actions on personal reputation and credibility.

Revised: Strategic Planning, December 5, 1996
T-Chart Approved: Millard Board of Education, January 13, 1997
Related Policy: 6110
Rule Adopted: May 3, 1999
Revised: June 18, 2001; July 21, 2003; December 4, 2006, March 2, 2009; March 1, 2010; April 18, 2011; August 19, 2013
Millard Public Schools
Omaha, Nebraska

Skilled and Technical Sciences Curriculum Planning Committee Members 2017-2020

Under the facilitation of Dr. Melanie Olson and Tami Whitted, MEP Facilitator Skilled and Technical Sciences

Gene Adams	MSHS Skilled and Technical Sciences
Dr. Jennifer Allen	MWHS Assistant Principal
Jeff Brady	MNHS Skilled and Technical Sciences
Grant Brassette	MSHS Skilled and Technical Sciences
Grant Christiansen	RMS Skilled and Technical Sciences
Eric Daigle	NMS Skilled and Technical Sciences
Heather Daubert	BMS Assistant Principal
Greg Dunn	MNHS Skilled and Technical Sciences
Nick Friedrichsen	MWHS Skilled and Technical Sciences
Travis Jelkin	CMS Skilled and Technical Sciences
Jacen Lefholtz	District MEP Technology Facilitator
Jon Olson	MNHS Skilled and Technical Sciences
Melanie Olson	Coordinator of Special Programs
Mitch Mentzer	MWHS Skilled and Technical Sciences
Mason Miller	MSHS Skilled and Technical Sciences
Mike Rogers	Business and Logistics Management Academy

Millard Public Schools 2019 Skilled and Technical Sciences Community Focus Group

Under the facilitation of Tami Whitted, MEP Facilitator Skilled and Technical Sciences

Mick Bayne	Technician, Lift Solutions
Rune van den Boogaart	Assistant Construction Manager, New Street Properties
Nate Berry	Dean of Career and Technical Education, Metro Community College
Heather Daubert	BMS Administrator, Millard Public Schools
Roger Essink	Mold Manager, Tri V Tool
Ben Gano	Manager of Talent Acquisition, NMC, Inc.
Sara Hansen	Workforce Development Manager, Turner Construction
Ralph Kleinsmith	Talent Sourcing and Development Manager, Lozier Corporation
Eric Knoll	Assistant Professor of Practice, Department of Agriculture Leadership Education and Communication, STS Teaching option, University of Nebraska at Lincoln
Melanie Olson	Coordinator of Special Programs, Millard Public Schools
Rogene Smith	Director of Human Resources, Conductix Wampfler
Jim Vyhlidal	Owner, Tri V Tool
Dr. Tony Weers	Director of Secondary Education, Millard Public Schools
Kevin Wetuski	Training Director, Omaha Joint Electrical Apprenticeship and Training
Emily Williams	Global Continuous Improvement Manager, Lindsay Manufacturing

Skilled and Technical Sciences Framework Committee Members 2018-2019

Under the facilitation of Tami Whitted, MEP Facilitator Skilled and Technical Sciences

Middle Level	
Grant Christianson	RMS Skilled and Technical Sciences
Eric Daigle	NMS Skilled and Technical Sciences
Travis Jelken	CMS Skilled and Technical Sciences
Construction Pathway	
Jeff Brady	MNHS Skilled and Technical Sciences
Grant Brassette	MSHS Skilled and Technical Sciences
Greg Dunn	MNHS Skilled and Technical Sciences
Mike Rogers	Business and Logistics Management Academy
Manufacturing Pathway	
Gene Adams	MSHS Skilled and Technical Sciences
Greg Dunn	MNHS Skilled and Technical Sciences
Mason Miller	MSHS Skilled and Technical Sciences
Mike Rogers	Business and Logistics Management Academy
Engineering Pathway	
Jeff Brady	MNHS Skilled and Technical Sciences
Greg Dunn	MNHS Skilled and Technical Sciences
Nick Friedrichsen	MWHS Skilled and Technical Sciences
Mitch Mentzer	MWHS Skilled and Technical Sciences
Mason Miller	MSHS Skilled and Technical Sciences

6-12 Skilled and Technical Sciences Instructional Materials/Curriculum Writing Committees

Middle Level	
Grant Christianson	RMS Skilled and Technical Sciences
Travis Jelken	CMS Skilled and Technical Sciences
Trevor Merz	KMS Skilled and Technical Sciences
Construction Pathway	
Grant Brassette	MSHS Skilled and Technical Sciences
Greg Dunn	MNHS Skilled and Technical Sciences
Charles Lambert	MWHS Skilled and Technical Sciences
Manufacturing Pathway	
Gene Adams	MSHS Skilled and Technical Sciences
Nick Friedrichsen	MWHS Skilled and Technical Sciences
Mason Miller	MSHS Skilled and Technical Sciences
Jon Olson	MNHS Skilled and Technical Sciences
Engineering Pathway	
Jeff Brady	MNHS Skilled and Technical Sciences
Mitch Mentzer	MWHS Skilled and Technical Sciences
Mason Miller	MSHS Skilled and Technical Sciences
Jaisa Poppleton	MSHS Skilled and Technical Sciences

Timeline for the 6-12 Skilled and Technical Sciences

Millard Education Program

October 2017	● Convened Curriculum Planning Committee. ● Reviewed Data Book and determined research topics.
November 2017 - February 2018	● Research teams conducted research.
February 2018	● Research shared with the Curriculum Planning Committee.
November 2018 - January 2019	● Course pathways were identified and additional research conducted. ● Curriculum Planning Committee began writing the MPS 6-12 Skilled and Technical Sciences Matrix.
January 2019	● Community Focus Group convened. ● 9-12 Skilled and Technical Sciences toured Grand Island Public Schools Career Pathways Institute and Lincoln Public Schools Career Academy.
March 2019	● Curriculum Planning Committee made final course and pathway recommendations to Educational Services.
April 2019	● 6-8 Skilled and Technical Sciences toured Memorial Middle School in Sioux Falls, SD, Yankton Middle School in Yankton, SD, Arlington Middle School, Fremont Middle School, and Bennington Middle School ● Educational Services made recommendations. ● Framework Committee finalized the MPS 6-12 Skilled and Technical Sciences Framework.
May 2019	● Millard Public Schools Board of Education approved the MPS 6-12 Skilled and Technical Sciences Framework.
October 2019 - March 2020	● 6-12 Skilled and Technical Sciences Instructional Materials/Curriculum Writing Committees met to review instructional materials and write course guides for all 6-12 courses.
March 2020	● Curriculum Planning Committee Recommendation
April 2020	● Curriculum Planning Committee & PK-12 Instructional Materials Evaluation Committee proposal submitted to Educational Services Executive Cabinet and the recommendation to the Board of Education for approval
Summer 2020 - Fall 2020	● Implement new curriculum, acquire instructional resources to ensure the written curriculum is the taught and assessed curriculum

Introduction to MPS 6-12 Skilled and Technical Sciences Matrix

Introduction

The 6-12 Skilled and Technical Sciences Standards and Indicators are sequenced in the following Matrix.

Nomenclature

The nomenclature for the standards and indicators is as follows:

STS	Skilled and Technical Sciences
M	Millard Standard
MS, HS	Grade Level

Career Pathway

1	Architectural Design
2	Construction
3	Energy
4	Engineering
5	Manufacturing
6	Welding
7	Transportation
8	Logistics
9	Introductory Skills

Standard

1	Safety
2	Career Exploration
3	Communication or History
4-13	Pathway specific concepts

Indicator

a - q	Standard and Pathway specific skills

Examples:

STS.HS.6.4.a

STS	Skilled and Technical Sciences
HS	Grade Level: High School
6	Pathway: Welding
4	Standard: Materials, Tools, and Equipment
a	Indicator: Determine types of materials, fasteners, adhesives and finishes needed to produce a specific product.

STS.M.HS.2.1.g

STS	Skilled and Technical Sciences
M	Millard Standard
HS	Grade Level: High School
2	Pathway: Construction
4	Standard: Safety
a	Indicator: Assess the need for safe working habits in today's construction industry.

STS.M.MS.9.9.f

STS	Skilled and Technical Sciences
M	Millard Standard
MS	Grade Level: Middle School
9	Pathway: Introductory Skills
9	Standard: Technology
a	Indicator: Identify various digital drafting and modeling options.

6-8 Comprehensive Middle School Standards: Students will demonstrate competency in the practices and skills in the Skilled and Technical Sciences.				
Concepts	**Course Level Standards**			
	Skilled and Technical Sciences 6	**Skilled and Technical Sciences 7**	**Skilled and Technical Sciences 8**	**Engineering & Design 8**
Safety Training & Practice	STS.M.MS.9.3 Students will know and model safe lab procedures and techniques.			
	STS.M.MS.9.3.a The student will know safety requirements.	STS.M.MS.9.3.a The student will know safety requirements.	STS.M.MS.9.3.a The student will know safety requirements.	STS.M.MS.9.3.a The student will know safety requirements.
			STS.M.MS.9.3.b The student will practice appropriate classroom safety.	STS.M.MS.9.3.b The student will practice appropriate classroom safety.
Contextual Academics	STS.M.MS.9.6 Students will understand and accurately apply measurement.			
	STS.M.MS.9.6.a The student will demonstrate linear measurement.	STS.M.MS.9.6.a The student will demonstrate linear measurement.	STS.M.MS.9.6.a The student will demonstrate linear measurement.	STS.M.MS.9.6.a The student will demonstrate linear measurement.
	STS.M.MS.9.7 Students will explore design processes and problem solving.			
	STS.M.MS.9.7.d The student will apply speaking and technical writing skills to communicate key ideas.	STS.M.MS.9.7.d The student will apply speaking and technical writing skills to communicate key ideas.	STS.M.MS.9.7.d The student will apply speaking and technical writing skills to communicate key ideas.	STS.M.MS.9.7.d The student will apply speaking and technical writing skills to communicate key ideas.
Employment Skills	STS.M.MS.9.4 Students will acquire the skills to investigate the world of work in relation to knowledge of self and to make informed career decisions.			
	STS.M.MS.9.4.a The student will explore careers in the home, community, state, and nation.	STS.M.MS.9.4.a The student will explore careers in the home, community, state, and nation.	STS.M.MS.9.4.a The student will explore careers in the home, community, state, and nation.	STS.M.MS.9.4.a The student will explore careers in the home, community, state, and nation.
		STS.M.MS.9.4.b The student will demonstrate appropriate employability skills throughout the course.	STS.M.MS.9.4.b The student will demonstrate appropriate employability skills throughout the course.	STS.M.MS.9.4.b The student will demonstrate appropriate employability skills throughout the course.
		STS.M.MS.9.4.c The student will match individual strengths and assets with career options.	STS.M.MS.9.4.c The student will match individual strengths and assets with career options.	STS.M.MS.9.4.c The student will match individual strengths and assets with career options.
		STS.M.MS.9.4.d The student will examine and report on the Skilled and Technical Sciences (STS) Career Field.	STS.M.MS.9.4.d The student will examine and report on the Skilled and Technical Sciences (STS) Career Field.	STS.M.MS.9.4.d The student will examine and report on the Skilled and Technical Sciences (STS) Career Field.

	Skilled and Technical Sciences 6	Skilled and Technical Sciences 7	Skilled and Technical Sciences 8	Engineering & Design 8
Employment Skills	STS.M.MS.9.5 Students will engage in the academic preparation essential to choose from the wide range of postsecondary options.			
		STS.M.MS.9.5.a The student will explore the transition from middle school to high school.	STS.M.MS.9.5.a The student will explore the transition from middle school to high school.	STS.M.MS.9.5.a The student will explore the transition from middle school to high school.
		STS.M.MS.9.5.b The student will explore the transition from high school to post-secondary level.	STS.M.MS.9.5.b The student will explore the transition from high school to post-secondary level.	STS.M.MS.9.5.b The student will explore the transition from high school to post-secondary level.
Technical Skills	STS.M.MS.9.7 Students will explore design processes and problem solving.			
	STS.M.MS.9.7.a The student will apply a Design/Problem solving process.	STS.M.MS.9.7.a The student will apply a Design/Problem solving process.	STS.M.MS.9.7.a The student will apply a Design/Problem solving process.	STS.M.MS.9.7.a The student will apply a Design/Problem solving process.
				STS.M.MS.9.7.b The student will define an engineering problem and research possible solutions.
				STS.M.MS.9.7.c The student will formally present their design solution to peers and other stakeholders.
	STS.M.MS.9.8 Students will be introduced to technical communication.			
		STS.M.MS.9.8.a The student will demonstrate proper use of terminology through journal entries.		
		STS.M.MS.9.8.b The student will follow a plan of procedure.		
		STS.M.MS.9.8.c The student will follow written and verbal instructions.		
		STS.M.MS.9.8.d The student will access information from a variety of sources.		

	Skilled and Technical Sciences 6	Skilled and Technical Sciences 7	Skilled and Technical Sciences 8	Engineering & Design 8
Technical Skills	STS.M.MS.9.9 Students will use technical communication.			
			STS.M.MS.9.9.a The student will read a working drawing by distinguishing views, identifying line type, interpreting dimensions, and identifying symbols.	STS.M.MS.9.9.a The student will read a working drawing by distinguishing views, identifying line type, interpreting dimensions, and identifying symbols.
			STS.M.MS.9.9.b The student will demonstrate proper use of terminology through journal entries.	STS.M.MS.9.9.b The student will demonstrate proper use of terminology through journal entries.
			STS.M.MS.9.9.c The student will use and/or create a plan of procedure.	STS.M.MS.9.9.c The student will use and/or create a plan of procedure.
			STS.M.MS.9.9.d The student will follow written and verbal instructions.	STS.M.MS.9.9.d The student will follow written and verbal instructions.
				STS.M.MS.9.9.e The student will produce a working drawing by completing orthographic sketch(s) and isometric sketch(s) using CAD software in 2D and/or 3D.
				STS.M.MS.9.9.f The student will identify various digital drafting and modeling options.
	STS.M.MS.9.10 Students will define Technology.			
	STS.M.MS.9.10.a The student will understand the core concepts of technology.	STS.M.MS.9.10.a The student will understand the core concepts of technology.		
	STS.M.MS.9.10.b The student will be aware of technological impacts.	STS.M.MS.9.10.b The student will be aware of technological impacts.		
			STS.M.MS.9.10.c The student will explore and report on emerging technologies.	STS.M.MS.9.10.c The student will explore and report on emerging technologies.

	Skilled and Technical Sciences 6	Skilled and Technical Sciences 7	Skilled and Technical Sciences 8	Engineering & Design 8
Technical Skills	STS.M.MS.9.11 Students will experience skills needed to complete a project.			
	STS.M.MS.9.11.a The student will identify needed supplies.	STS.M.MS.9.11.a The student will identify needed supplies.	STS.M.MS.9.11.a The student will identify needed supplies.	STS.M.MS.9.11.a The student will identify needed supplies.
	STS.M.MS.9.11.b The student will identify tools.	STS.M.MS.9.11.b The student will identify tools.	STS.M.MS.9.11.b The student will identify tools.	STS.M.MS.9.11.b The student will identify tools.
	STS.M.MS.9.11.c The student will use the appropriate portable and stationary power tools to accomplish specific course goals.	STS.M.MS.9.11.c The student will use the appropriate portable and stationary power tools to accomplish specific course goals.	STS.M.MS.9.11.c The student will use the appropriate portable and stationary power tools to accomplish specific course goals.	STS.M.MS.9.11.c The student will use the appropriate portable and stationary power tools to accomplish specific course goals.
	STS.M.MS.9.12 Student will recognize material types and properties and demonstrate material processing.			
			STS.M.MS.9.12.a The student will identify different types of materials and their applications.	STS.M.MS.9.12.a The student will identify different types of materials and their applications.
			STS.M.MS.9.12.b The student will know material processes.	STS.M.MS.9.12.b The student will know material processes.
			STS.M.MS.9.12.c The student will process materials which may include cutting, drilling/boring, sanding/grinding, forming, and finishing processes.	STS.M.MS.9.12.c The student will process materials which may include cutting, drilling/boring, sanding/grinding, forming, and finishing processes.
Primary Instructional Resource	MPS Teacher Created Google Sites & Videos	MPS Teacher Created Google Sites & Videos	MPS Teacher Created Google Sites & Videos	MPS Teacher Created Google Sites & Videos

6-12 Comprehensive Construction Pathway Standards: Students will demonstrate competency in the practices and skills in the Construction Pathway.						
Concepts	**Course Level Standards**					
	Home Maintenance	**Construction Systems**	**Construction & Management**	**Introduction to Carpentry**	**Carpentry**	**Advanced Carpentry**
Safety Training & Practice	STS.HS.1.1 Identify safety guidelines.					
			STS.HS.1.1.b Identify the consents necessary to enter a confined space on a construction site.	STS.HS.1.1.b Identify the consents necessary to enter a confined space on a construction site.	STS.HS.1.1.b Identify the consents necessary to enter a confined space on a construction site.	STS.HS.1.1.b Identify the consents necessary to enter a confined space on a construction site.
	STS.M.HS.1.1.e Model general shop safety practices.	STS.M.HS.1.1.e Model general shop safety practices.	STS.M.HS.1.1.e Model general shop safety practices.	STS.M.HS.1.1.e Model general shop safety practices.	STS.M.HS.1.1.e Model general shop safety practices.	STS.M.HS.1.1.e Model general shop safety practices.
	STS.HS.2.1 Apply safety principles, practices and guidelines to the work environment.					
	STS.HS.2.1.a Successfully complete written safety assessment.	STS.HS.2.1.a Successfully complete written safety assessment.	STS.HS.2.1.a Successfully complete written safety assessment.	STS.HS.2.1.a Successfully complete written safety assessment.	STS.HS.2.1.a Successfully complete written safety assessment.	STS.HS.2.1.a Successfully complete written safety assessment.
	STS.HS.2.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).	STS.HS.2.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).	STS.HS.2.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).	STS.HS.2.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).	STS.HS.2.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).	STS.HS.2.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).
	STS.HS.2.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.	STS.HS.2.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.	STS.HS.2.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.	STS.HS.2.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.	STS.HS.2.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.	STS.HS.2.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.

	Home Maintenance	Construction Systems	Construction & Management	Introduction to Carpentry	Carpentry	Advanced Carpentry
Safety Training & Practice		STS.HS.2.1.d Describe the role of government agencies in providing a safe workplace.	STS.HS.2.1.d Describe the role of government agencies in providing a safe workplace.			STS.HS.2.1.d Describe the role of government agencies in providing a safe workplace.
	STS.HS.2.1.e Demonstrate methods to correct common design and construction hazards.	STS.HS.2.1.e Demonstrate methods to correct common design and construction hazards.	STS.HS.2.1.e Demonstrate methods to correct common design and construction hazards.	STS.HS.2.1.e Demonstrate methods to correct common design and construction hazards.	STS.HS.2.1.e Demonstrate methods to correct common design and construction hazards.	STS.HS.2.1.e Demonstrate methods to correct common design and construction hazards.
		STS.M.HS.2.1.f Assess the need for safe working habits in today's construction industry.	STS.M.HS.2.1.f Assess the need for safe working habits in today's construction industry.			
					STS.M.HS.2.1.g Demonstrate safe working practices when using pneumatic tools.	STS.M.HS.2.1.g Demonstrate safe working practices when using pneumatic tools.
	STS.M.HS.2.1.h Demonstrate principles of safe physical movement to avoid slips, trips, and spills.	STS.M.HS.2.1.h Demonstrate principles of safe physical movement to avoid slips, trips, and spills.	STS.M.HS.2.1.h Demonstrate principles of safe physical movement to avoid slips, trips, and spills.	STS.M.HS.2.1.h Demonstrate principles of safe physical movement to avoid slips, trips, and spills.	STS.M.HS.2.1.h Demonstrate principles of safe physical movement to avoid slips, trips, and spills.	STS.M.HS.2.1.h Demonstrate principles of safe physical movement to avoid slips, trips, and spills.
	STS.M.HS.2.1.i Understand the correct way to lift and move materials.	STS.M.HS.2.1.i Understand the correct way to lift and move materials.	STS.M.HS.2.1.i Understand the correct way to lift and move materials.	STS.M.HS.2.1.i Understand the correct way to lift and move materials.	STS.M.HS.2.1.i Understand the correct way to lift and move materials.	STS.M.HS.2.1.i Understand the correct way to lift and move materials.
	STS.M.HS.2.1.j Properly handle metal/wood chips and waste material.	STS.M.HS.2.1.j Properly handle metal/wood chips and waste material.	STS.M.HS.2.1.j Properly handle metal/wood chips and waste material.	STS.M.HS.2.1.j Properly handle metal/wood chips and waste material.	STS.M.HS.2.1.j Properly handle metal/wood chips and waste material.	STS.M.HS.2.1.j Properly handle metal/wood chips and waste material.

	Home Maintenance	Construction Systems	Construction & Management	Introduction to Carpentry	Carpentry	Advanced Carpentry
Contextual Academics	STS.HS.1.6 Identify typical building design and construction methods and practices.					
		STS.HS.1.6.a Identify various digital drafting and modeling options (i.e. CADD/BIM).	STS.HS.1.6.a Identify various digital drafting and modeling options (i.e. CADD/BIM).	STS.HS.1.6.a Identify various digital drafting and modeling options (i.e. CADD/BIM).	STS.HS.1.6.a Identify various digital drafting and modeling options (i.e. CADD/BIM).	STS.HS.1.6.a Identify various digital drafting and modeling options (i.e. CADD/BIM).
	STS.HS.1.6.c Identify the types of materials, their properties and applications used in building construction.	STS.HS.1.6.c Identify the types of materials, their properties and applications used in building construction.	STS.HS.1.6.c Identify the types of materials, their properties and applications used in building construction.	STS.HS.1.6.c Identify the types of materials, their properties and applications used in building construction.	STS.HS.1.6.c Identify the types of materials, their properties and applications used in building construction.	STS.HS.1.6.c Identify the types of materials, their properties and applications used in building construction.
	STS.HS.1.6.e Identify the environmental impact of material usage.	STS.HS.1.6.e Identify the environmental impact of material usage.	STS.HS.1.6.e Identify the environmental impact of material usage.	STS.HS.1.6.e Identify the environmental impact of material usage.	STS.HS.1.6.e Identify the environmental impact of material usage.	STS.HS.1.6.e Identify the environmental impact of material usage.
	STS.HS.1.8 Create a cost and efficiency analysis.					
			STS.HS.1.8.a Compare and contrast the terms R-value and U-factor.			
			STS.HS.1.8.b Create a cost estimate for a small construction project, including a detailed cost break-down.		STS.HS.1.8.b Create a cost estimate for a small construction project, including a detailed cost break-down.	STS.HS.1.8.b Create a cost estimate for a small construction project, including a detailed cost break-down.
		STS.HS.1.8.e Identify principles of sustainable design.	STS.HS.1.8.e Identify principles of sustainable design.		STS.HS.1.8.e Identify principles of sustainable design.	STS.HS.1.8.e Identify principles of sustainable design.

	Home Maintenance	Construction Systems	Construction & Management	Introduction to Carpentry	Carpentry	Advanced Carpentry
Contextual Academics	STS.HS.1.10 Apply conventional General Drafting Standards used in architectural drafting situations.					
		STS.HS.1.10.d Create different views such as floor plans, elevations, sections, site, and perspectives.	STS.HS.1.10.d Create different views such as floor plans, elevations, sections, site, and perspectives.		STS.HS.1.10.d Create different views such as floor plans, elevations, sections, site, and perspectives.	STS.HS.1.10.d Create different views such as floor plans, elevations, sections, site, and perspectives.
	STS.HS.1.12 Demonstrate the utilization of technology					
		STS.HS.1.12.b Utilize basic computer and information technology skills	STS.HS.1.12.b Utilize basic computer and information technology skills	STS.HS.1.12.b Utilize basic computer and information technology skills	STS.HS.1.12.b Utilize basic computer and information technology skills	STS.HS.1.12.b Utilize basic computer and information technology skills
	STS.HS.1.13 Utilize mathematical skills needed in architectural design.					
		STS.HS.1.13.a Apply basic arithmetic	STS.HS.1.13.a Apply basic arithmetic	STS.HS.1.13.a Apply basic arithmetic	STS.HS.1.13.a Apply basic arithmetic	STS.HS.1.13.a Apply basic arithmetic
		STS.HS.1.13.b Apply basic Algebraic skills to solve problems involving area, volume and angles.	STS.HS.1.13.b Apply basic Algebraic skills to solve problems involving area, volume and angles.		STS.HS.1.13.b Apply basic Algebraic skills to solve problems involving area, volume and angles.	STS.HS.1.13.b Apply basic Algebraic skills to solve problems involving area, volume and angles.
	STS.HS.2.5 Summarize building systems and components.					
	STS.HS.2.5.a Describe the building systems needed to complete a construction project.	STS.HS.2.5.a Describe the building systems needed to complete a construction project.	STS.HS.2.5.a Describe the building systems needed to complete a construction project.	STS.HS.2.5.a Describe the building systems needed to complete a construction project.	STS.HS.2.5.a Describe the building systems needed to complete a construction project.	STS.HS.2.5.a Describe the building systems needed to complete a construction project.
		STS.HS.2.5.b Describe the building components needed to complete a construction project (i.e. trusses, joists, beams, etc.).	STS.HS.2.5.b Describe the building components needed to complete a construction project (i.e. trusses, joists, beams, etc.).			

	Home Maintenance	Construction Systems	Construction & Management	Introduction to Carpentry	Carpentry	Advanced Carpentry
Contextual Academics	STS.HS.2.5.c Identify the types and sizes of construction materials needed to complete a construction project.	STS.HS.2.5.c Identify the types and sizes of construction materials needed to complete a construction project.	STS.HS.2.5.c Identify the types and sizes of construction materials needed to complete a construction project.	STS.HS.2.5.c Identify the types and sizes of construction materials needed to complete a construction project.	STS.HS.2.5.c Identify the types and sizes of construction materials needed to complete a construction project.	STS.HS.2.5.c Identify the types and sizes of construction materials needed to complete a construction project.
	STS.HS.2.6 Demonstrate the installation of construction sub-systems.					
		STS.HS.2.6.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.2.6.a Accurately use math functions and formulas to complete job/workplace tasks.			
			STS.HS.2.6.b Correctly and accurately use tools and equipment to perform material takeoff (MTO) to drawings and specifications.			
	STS.HS.2.9 Demonstrate the proper installation of electrical components.					
	STS.HS.2.9.a Apply knowledge of basic wiring theory and terminology.		STS.HS.2.9.a Apply knowledge of basic wiring theory and terminology.			
	STS.HS.5.4 Identify the materials, tools and equipment needed to manufacture a product.					
	STS.HS.5.4.a Determine types of materials, fasteners, adhesives and finishes needed to produce a specific product.	STS.HS.5.4.a Determine types of materials, fasteners, adhesives and finishes needed to produce a specific product.	STS.HS.5.4.a Determine types of materials, fasteners, adhesives and finishes needed to produce a specific product.	STS.HS.5.4.a Determine types of materials, fasteners, adhesives and finishes needed to produce a specific product.	STS.HS.5.4.a Determine types of materials, fasteners, adhesives and finishes needed to produce a specific product.	STS.HS.5.4.a Determine types of materials, fasteners, adhesives and finishes needed to produce a specific product.

	Home Maintenance	Construction Systems	Construction & Management	Introduction to Carpentry	Carpentry	Advanced Carpentry
Contextual Academics	STS.HS.5.4.b Determine the correct tools and equipment needed to produce a specific product.	STS.HS.5.4.b Determine the correct tools and equipment needed to produce a specific product.	STS.HS.5.4.b Determine the correct tools and equipment needed to produce a specific product.	STS.HS.5.4.b Determine the correct tools and equipment needed to produce a specific product.	STS.HS.5.4.b Determine the correct tools and equipment needed to produce a specific product.	STS.HS.5.4.b Determine the correct tools and equipment needed to produce a specific product.
	STS.HS.5.4.i Demonstrate proper use of equipment not specifically mentioned.	STS.HS.5.4.i Demonstrate proper use of equipment not specifically mentioned.	STS.HS.5.4.i Demonstrate proper use of equipment not specifically mentioned.	STS.HS.5.4.i Demonstrate proper use of equipment not specifically mentioned.	STS.HS.5.4.i Demonstrate proper use of equipment not specifically mentioned.	STS.HS.5.4.i Demonstrate proper use of equipment not specifically mentioned.
	STS.M.HS.5.4.j Identify the parts of a board.				STS.M.HS.5.4.j Identify the parts of a board.	STS.M.HS.5.4.j Identify the parts of a board.
	STS.M.HS.5.4.k Differentiate between cuts on a board.				STS.M.HS.5.4.k Differentiate between cuts on a board.	STS.M.HS.5.4.k Differentiate between cuts on a board.
	STS.M.HS.5.4..l Demonstrate basic joinery and fasteners.				STS.M.HS.5.4.l Demonstrate basic joinery and fasteners.	STS.M.HS.5.4.l Demonstrate basic joinery and fasteners.
Employment Skills	STS.HS.2.2 Investigate career opportunities in the construction industry.					
	STS.HS.2.2.a Identify the responsibilities and characteristics of professionals in the construction industry.	STS.HS.2.2.a Identify the responsibilities and characteristics of professionals in the construction industry.	STS.HS.2.2.a Identify the responsibilities and characteristics of professionals in the construction industry.	STS.HS.2.2.a Identify the responsibilities and characteristics of professionals in the construction industry.	STS.HS.2.2.a Identify the responsibilities and characteristics of professionals in the construction industry.	STS.HS.2.2.a Identify the responsibilities and characteristics of professionals in the construction industry.
		STS.HS.2.2.b Identify employment trends in various construction sectors (residential, commercial, industrial, energy, green technologies, etc.).	STS.HS.2.2.b Identify employment trends in various construction sectors (residential, commercial, industrial, energy, green technologies, etc.).		STS.HS.2.2.b Identify employment trends in various construction sectors (residential, commercial, industrial, energy, green technologies, etc.).	STS.HS.2.2.b Identify employment trends in various construction sectors (residential, commercial, industrial, energy, green technologies, etc.).

	Home Maintenance	Construction Systems	Construction & Management	Introduction to Carpentry	Carpentry	Advanced Carpentry
Employment Skills		STS.HS.2.2.c Describe work behaviors needed to be employable.	STS.HS.2.2.c Describe work behaviors needed to be employable.	STS.HS.2.2.c Describe work behaviors needed to be employable.	STS.HS.2.2.c Describe work behaviors needed to be employable.	STS.HS.2.2.c Describe work behaviors needed to be employable.
			STS.HS.2.2.d Identify the training, education, certification and licensing requirements for various careers in the construction industry.			STS.HS.2.2.d Identify the training, education, certification and licensing requirements for various careers in the construction industry.
	STS.HS.2.7 Investigate career opportunities in the electrical industry.					
			STS.HS.2.7.a Identify the responsibilities and characteristics of professionals in the electrical industry.			
			STS.HS.2.7.b Identify employment trends in the electrical industry.			
			STS.HS.2.7.c Describe work behaviors needed to be employable.			
			STS.HS.2.7.d Identify the training, education, certification and licensing requirements for careers in the electrical industry.			

	Home Maintenance	Construction Systems	Construction & Management	Introduction to Carpentry	Carpentry	Advanced Carpentry
Employment Skills	STS.HS.5.2 Investigate career opportunities in the manufacturing industry.					
					STS.HS.5.2.a Identify the responsibilities and characteristics of professionals in the manufacturing industry.	STS.HS.5.2.a Identify the responsibilities and characteristics of professionals in the manufacturing industry.
					STS.HS.5.2.b Identify employment trends in manufacturing.	STS.HS.5.2.b Identify employment trends in manufacturing.
					STS.HS.5.2.c Describe work behaviors needed to be employable.	STS.HS.5.2.c Describe work behaviors needed to be employable.
Technical Skills	STS.HS.1.5 Identify site characteristics and how they affect building design and land development.					
			STS.HS.1.5.a Identify the impact of site development (I.e. storm water runoff, pedestrian and vehicular access).			
			STS.HS.1.5.c Identify specifications and codes for a site design process.			
	STS.HS.1.7 Identify residential and commercial building systems.					
			STS.HS.1.7.c Identify code requirements and constraints as they pertain to the installation of services and utilities.			

	Home Maintenance	Construction Systems	Construction & Management	Introduction to Carpentry	Carpentry	Advanced Carpentry
Technical Skills			STS.HS.1.7.e Identify system designs to incorporate energy conservation techniques.			
	STS.HS.2.3 Demonstrate use of construction communications.					
			STS.HS.2.3.a Accurately interpret construction terminology, plans, drawings and schedules.	STS.HS.2.3.a Accurately interpret construction terminology, plans, drawings and schedules.	STS.HS.2.3.a Accurately interpret construction terminology, plans, drawings and schedules.	STS.HS.2.3.a Accurately interpret construction terminology, plans, drawings and schedules.
			STS.M.HS.2.3.d Retrieve prices from vendors.			
			STS.M.HS.2.3.e Write a proposal to a client with a business name, expected income, expenses, logo, etc.			
			STS.M.HS.2.3.f Write a bid.			
	STS.HS.5.3 Demonstrate use of manufacturing communications.					
				STS.HS.5.3.a Interpret manufacturing terminology, plans, sketches, drawings and schedules.	STS.HS.5.3.a Interpret manufacturing terminology, plans, sketches, drawings and schedules.	STS.HS.5.3.a Interpret manufacturing terminology, plans, sketches, drawings and schedules.
					STS.HS.5.3.b Develop a flowchart of a project schedule.	STS.HS.5.3.b Develop a flowchart of a project schedule.

	Home Maintenance	Construction Systems	Construction & Management	Introduction to Carpentry	Carpentry	Advanced Carpentry
Technical Skills					STS.HS.5.3.c Develop a schedule of materials in proper sequence.	STS.HS.5.3.c Develop a schedule of materials in proper sequence.
		STS.M.HS.5.3.d Create a scale model demonstrating structural members and framing.	STS.M.HS.5.3.d Create a scale model demonstrating structural members and framing.			
	STS.HS.5.5 Manufacture a product using manufacturing technology.					
	STS.HS.5.5.a Correctly use math functions and formulas to complete job/workplace tasks.	STS.HS.5.5.a Correctly use math functions and formulas to complete job/workplace tasks.	STS.HS.5.5.a Correctly use math functions and formulas to complete job/workplace tasks.	STS.HS.5.5.a Correctly use math functions and formulas to complete job/workplace tasks.	STS.HS.5.5.a Correctly use math functions and formulas to complete job/workplace tasks.	STS.HS.5.5.a Correctly use math functions and formulas to complete job/workplace tasks.
	STS.HS.5.5.c Demonstrate proper and accurate measurement.	STS.HS.5.5.c Demonstrate proper and accurate measurement.	STS.HS.5.5.c Demonstrate proper and accurate measurement.	STS.HS.5.5.c Demonstrate proper and accurate measurement.	STS.HS.5.5.c Demonstrate proper and accurate measurement.	STS.HS.5.5.c Demonstrate proper and accurate measurement.
		STS.M.HS.5.5.e Manufacture a physical structure (ex. playhouse, shed).	STS.M.HS.5.5.e Manufacture a physical structure (ex. playhouse, shed).			
	STS.HS.9.1 Applies appropriate academic and technical skills.					
	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.
	STS.HS.9.1.b Communicates effectively and appropriately.	STS.HS.9.1.b Communicates effectively and appropriately.	STS.HS.9.1.b Communicates effectively and appropriately.	STS.HS.9.1.b Communicates effectively and appropriately.	STS.HS.9.1.b Communicates effectively and appropriately.	STS.HS.9.1.b Communicates effectively and appropriately.

	Home Maintenance	Construction Systems	Construction & Management	Introduction to Carpentry	Carpentry	Advanced Carpentry
Technical Skills	STS.HS.9.2 Produce a product.					
	STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.9.2.a Demonstrate the ability to produce a product.
Primary Instructional Resource	MPS created and OER Resources	MPS created and OER Resources	MPS created and OER Resources	Exploring Woodworking textbook: Goodheart - Wilcox	Exploring Woodworking textbook: Goodheart - Wilcox	Exploring Woodworking textbook: Goodheart - Wilcox

6-12 Comprehensive Engineering Pathway Standards: Students will demonstrate competency in the practices and skills in the Engineering Pathway.							
Concepts	**Course Level Standards**						
	Introduction to Engineering	**Robotics A**	**Robotics B**	**Civil Engineering & Architecture A**	**Civil Engineering & Architecture B**	**Engineering & Design A**	**Engineering & Design B**
Safety Training & Practice	STS.HS.4.1 Apply safety principles, practices and guidelines to the work environment.						
	STS.HS.4.1.a Successfully complete written safety assessment.		STS.HS.4.1.a Successfully complete written safety assessment.				STS.HS.4.1.a Successfully complete written safety assessment.
	STS.HS.4.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).		STS.HS.4.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).				STS.HS.4.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).
	STS.HS.4.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.		STS.HS.4.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.			STS.HS.4.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.	STS.HS.4.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.
	STS.M.HS.4.1.d Demonstrate the safe use of tools, machines, and equipment in alignment with industry standards.		STS.M.HS.4.1.d Demonstrate the safe use of tools, machines, and equipment in alignment with industry standards.			STS.M.HS.4.1.d Demonstrate the safe use of tools, machines, and equipment in alignment with industry standards.	STS.M.HS.4.1.d Demonstrate the safe use of tools, machines, and equipment in alignment with industry standards.

	Introduction to Engineering	Robotics A	Robotics B	Civil Engineering & Architecture A	Civil Engineering & Architecture B	Engineering & Design A	Engineering & Design B
Safety Training & Practice	STS.M.HS.4.1.e Describe the role of government agencies in providing a safe workplace.		STS.M.HS.4.1.e Describe the role of government agencies in providing a safe workplace.				STS.M.HS.4.1.e Describe the role of government agencies in providing a safe workplace.
	STS.M.HS.4.1.f Analyze the role of government agencies in providing a safe workplace.		STS.M.HS.4.1.f Analyze the role of government agencies in providing a safe workplace.				STS.M.HS.4.1.f Analyze the role of government agencies in providing a safe workplace.
	STS.HS.1.1 Identify safety guidelines.						
				STS.HS.1.1.a Successfully complete written safety assessment.	STS.HS.1.1.a Successfully complete written safety assessment.		
				STS.HS.1.1.b Identify the consents necessary to enter a confined space on a construction site.	STS.HS.1.1.b Identify the consents necessary to enter a confined space on a construction site.		
				STS.HS.1.1.c Identify the requirements of Personal Protective Equipment (PPE).	STS.HS.1.1.c Identify the requirements of Personal Protective Equipment (PPE).		
				STS.HS.1.1.d Identify protocol involved in crisis management such as an employee injury, equipment damage, and a collapse on a project of people or materials.	STS.HS.1.1.d Identify protocol involved in crisis management such as an employee injury, equipment damage, and a collapse on a project of people or materials.		

	Introduction to Engineering	Robotics A	Robotics B	Civil Engineering & Architecture A	Civil Engineering & Architecture B	Engineering & Design A	Engineering & Design B
Contextual Academics	STS.HS.4.3 Employ engineering design process principles to solve an engineering problem.						
	STS.HS.4.3.a Define an engineering problem and research possible solutions.	STS.HS.4.3.a Define an engineering problem and research possible solutions.	STS.HS.4.3.a Define an engineering problem and research possible solutions.			STS.HS.4.3.a Define an engineering problem and research possible solutions.	STS.HS.4.3.a Define an engineering problem and research possible solutions.
	STS.HS.4.3.b Use basic technical sketching and drawing skills, engineering notebook standards and engineering protocols to document research and solutions.	STS.HS.4.3.b Use basic technical sketching and drawing skills, engineering notebook standards and engineering protocols to document research and solutions.	STS.HS.4.3.b Use basic technical sketching and drawing skills, engineering notebook standards and engineering protocols to document research and solutions.			STS.HS.4.3.b Use basic technical sketching and drawing skills, engineering notebook standards and engineering protocols to document research and solutions.	STS.HS.4.3.b Use basic technical sketching and drawing skills, engineering notebook standards and engineering protocols to document research and solutions.
	STS.M.HS.4.3.c Explain and justify an engineering design process.					STS.M.HS.4.3.c Explain and justify an engineering design process.	STS.M.HS.4.3.c Explain and justify an engineering design process.
	STS.M.HS.4.3.d Make judgements and decisions based on evidence.					STS.M.HS.4.3.d Make judgements and decisions based on evidence.	STS.M.HS.4.3.d Make judgements and decisions based on evidence.
	STS.M.HS.4.3.e Using a variety of measuring devices, measure and report quantities accurately and to a precision appropriate for the purpose.					STS.M.HS.4.3.e Using a variety of measuring devices, measure and report quantities accurately and to a precision appropriate for the purpose.	STS.M.HS.4.3.e Using a variety of measuring devices, measure and report quantities accurately and to a precision appropriate for the purpose.

	Introduction to Engineering	Robotics A	Robotics B	Civil Engineering & Architecture A	Civil Engineering & Architecture B	Engineering & Design A	Engineering & Design B
Contextual Academics						STS.M.HS.4.3.f Use spatial visualization to create and interpret graphical communication of two- and three dimensional objects.	STS.M.HS.4.3.f Use spatial visualization to create and interpret graphical communication of two- and three dimensional objects.
						STS.M.HS.4.3.g Properly dimension technical drawings of simple objects or parts according to a set of dimensioning standards and accepted practices.	
							STS.M.HS.4.3.h Apply appropriate engineering tolerances to specify the allowable variation, size of individual features, and orientation and location between features of an object.
	STS.M.HS.4.3.i Analyze a consumer product using reverse engineering techniques to document visual, functional, and structural aspects of the design.					STS.M.HS.4.3.i Analyze a consumer product using reverse engineering techniques to document visual, functional, and structural aspects of the design.	

	Introduction to Engineering	Robotics A	Robotics B	Civil Engineering & Architecture A	Civil Engineering & Architecture B	Engineering & Design A	Engineering & Design B
Contextual Academics							STS.M.HS.4.3.j Determine physical properties associated with an object.
	STS.M.HS.4.3.k Generate multiple potential solution concepts.				STS.M.HS.4.3.k Generate multiple potential solution concepts.		
							STS.M.HS.4.3.l Select a solution path from many options to successfully address a problem or opportunity.
	STS.M.HS.4.3.m Persevere to solve a problem or achieve a goal.						
	STS.M.HS.4.3.n Reflect critically on past experiences to inform future progress.						
				STS.M.HS.4.3.o Collect, analyze, and interpret information relevant to the problem or opportunity at hand to support engineering decisions.			

	Introduction to Engineering	Robotics A	Robotics B	Civil Engineering & Architecture A	Civil Engineering & Architecture B	Engineering & Design A	Engineering & Design B
Contextual Academics	STS.HS.4.4 Build an engineering related product or structure.						
						STS.HS.4.4.a Determine structural requirements, specifications and estimate costs for the products or structures.	STS.HS.4.4.a Determine structural requirements, specifications and estimate costs for the products or structures.
						STS.HS.4.4.b Accurately follow plans to construct an engineering related product or structure.	STS.HS.4.4.b Accurately follow plans to construct an engineering related product or structure.
	STS.M.HS.4.4.c Create a set of working drawings using 3D computer-aided design (CAD) software to document a design according to standard engineering practices.					STS.M.HS.4.4.c Create a set of working drawings using 3D computer-aided design (CAD) software to document a design according to standard engineering practices.	STS.M.HS.4.4.c Create a set of working drawings using 3D computer-aided design (CAD) software to document a design according to standard engineering practices.
	STS.M.HS.4.4.d Create an assembly model using 3D computer-aided design (CAD) software to represent an assembly of parts.					STS.M.HS.4.4.d Create an assembly model using 3D computer-aided design (CAD) software to represent an assembly of parts.	STS.M.HS.4.4.d Create an assembly model using 3D computer-aided design (CAD) software to represent an assembly of parts.
	STS.M.HS.4.4.e Create a solid part model using 3D computer-aided design (CAD) software to represent an object.						

	Introduction to Engineering	Robotics A	Robotics B	Civil Engineering & Architecture A	Civil Engineering & Architecture B	Engineering & Design A	Engineering & Design B
Contextual Academics	STS.HS.4.5 Describe the functions of a basic robot.						
		STS.HS.4.5.a Identify basic programming concepts: structures, variables, constants and logical operators.	STS.HS.4.5.a Identify basic programming concepts: structures, variables, constants and logical operators.				
		STS.HS.4.5.b Identify various aspects of robotics in industry.	STS.HS.4.5.b Identify various aspects of robotics in industry.				
		STS.M.HS.4.5.c Distinguish between digital and analog data, and the inputs and outputs of a computational system.					
	STS.HS.4.6 Design and assemble robots that are functionally and structurally sound.						
		STS.HS.4.6.a Generate a solution for a robot to overcome a physics challenge.	STS.HS.4.6.a Generate a solution for a robot to overcome a physics challenge.				
		STS.HS.4.6.b Construct a fully functioning robot that has proof of concept through engineering notebook protocols.	STS.HS.4.6.b Construct a fully functioning robot that has proof of concept through engineering notebook protocols.				
		STS.HS.4.6.c Assemble drive trains that utilize different gear ratios to understand mechanical setups.	STS.HS.4.6.c Assemble drive trains that utilize different gear ratios to understand mechanical setups.				

	Introduction to Engineering	Robotics A	Robotics B	Civil Engineering & Architecture A	Civil Engineering & Architecture B	Engineering & Design A	Engineering & Design B
Contextual Academics	STS.HS.4.7 Demonstrate use of engineering communications.						
	STS.HS.4.7.a Apply engineering design and process standards to begin investigating a problem.					STS.HS.4.7.a Apply engineering design and process standards to begin investigating a problem.	STS.HS.4.7.a Apply engineering design and process standards to begin investigating a problem.
	STS.HS.4.7.b Identify a concise problem statement that provides a foundation in solving problems.					STS.HS.4.7.b Identify a concise problem statement that provides a foundation in solving problems.	STS.HS.4.7.b Identify a concise problem statement that provides a foundation in solving problems.
	STS.HS.4.7.c Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.					STS.HS.4.7.c Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.	STS.HS.4.7.c Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.
	STS.HS.4.7.d Locate, organize and reference written information from various sources to communicate with co-workers and clients/participants.					STS.HS.4.7.d Locate, organize and reference written information from various sources to communicate with co-workers and clients/participants.	STS.HS.4.7.d Locate, organize and reference written information from various sources to communicate with co-workers and clients/participants.
	STS.HS.4.7.e Document the design process and project through written and multimedia forms.					STS.HS.4.7.e Document the design process and project through written and multimedia forms.	STS.HS.4.7.e Document the design process and project through written and multimedia forms.

	Introduction to Engineering	Robotics A	Robotics B	Civil Engineering & Architecture A	Civil Engineering & Architecture B	Engineering & Design A	Engineering & Design B
Contextual Academics	STS.HS.4.7.f Formally present their design solution to peers and other stakeholders.	STS.HS.4.7.f Formally present a design solution to peers and other stakeholders.	STS.HS.4.7.f Formally present a design solution to peers and other stakeholders.			STS.HS.4.7.f Formally present their design solution to peers and other stakeholders.	STS.HS.4.7.f Formally present their design solution to peers and other stakeholders.
	STS.HS.4.7.g Apply engineering notebook standards and protocols during documentation.					STS.HS.4.7.g Apply engineering notebook standards and protocols during documentation.	STS.HS.4.7.g Apply engineering notebook standards and protocols during documentation.
	STS.M.HS.4.7.h Read and interpret technical drawings.						
						STS.M.HS.4.7.i Create technical drawings to fully detail an object or part.	STS.M.HS.4.7.i Create technical drawings to fully detail an object or part.
	STS.HS.1.3 Analyze the historical beginnings of architecture.						
				STS.HS.1.3.a Identify design principles, elements, and architectural styles.			
				STS.HS.1.3.b Identify the building materials, locations, and design that have historically influenced civil engineering and architecture.			

	Introduction to Engineering	Robotics A	Robotics B	Civil Engineering & Architecture A	Civil Engineering & Architecture B	Engineering & Design A	Engineering & Design B
Contextual Academics				STS.HS. 1.3.c Relate the influence that historical buildings have on today's architecture.			
				STS.HS.1.3.d Identify general categories of structural systems used in historical buildings.			
	STS.HS.1.4 Apply geometric object measurements to architecture.						
				STS.HS.1.4.a Define the characteristics of an equilateral triangle, isosceles triangle, square, parallelogram, hexagon, octagon, and circle and their application to architecture.			
				STS.HS.1.4.b Calculate the surface area and perimeter of two- dimensional objects.			
				STS.HS.1.4.c Calculate the volume and surface area of three- dimensional objects.			
				STS.HS.1.4.d Calculate the roof slopes, light angles, ground surfaces, structural loads and heights of structures.			

	Introduction to Engineering	Robotics A	Robotics B	Civil Engineering & Architecture A	Civil Engineering & Architecture B	Engineering & Design A	Engineering & Design B
Contextual Academics	STS.HS.1.5 Identify site characteristics and how they affect building design and land development.						
					STS.HS.1.5.a Identify the impact of site development (I.e. storm water runoff, pedestrian and vehicular access).		
					STS.HS.1.5.b Explain the purpose for the use of Low Impact Development techniques in site development.		
					STS.HS.1.5.c Identify specifications and codes for a site design process.		
					STS.HS.1.5.d Identify soil characteristics important to the design and construction of a building on the site.		
	STS.HS.1.6 Identify typical building design and construction methods and practices.						
					STS.HS.1.6.a Identify various digital drafting and modeling options (i.e. CADD/BIM).		

	Introduction to Engineering	Robotics A	Robotics B	Civil Engineering & Architecture A	Civil Engineering & Architecture B	Engineering & Design A	Engineering & Design B
Contextual Academics					STS.HS.1.6.b Identify the components that comprise architectural construction (working) drawings.		
				STS.HS.1.6.c Identify the types of materials, their properties and applications used in building construction.	STS.HS.1.6.c Identify the types of materials, their properties and applications used in building construction.		
				STS.HS.1.6.d Identify different types of fasteners, adhesives and finishes.	STS.HS.1.6.d Identify different types of fasteners, adhesives and finishes.		
				STS.HS.1.6.e Identify the environmental impact of material usage.	STS.HS.1.6.e Identify the environmental impact of material usage.		
	STS.HS.1.7 Identify residential and commercial building systems.						
				STS.HS.1.7.a Describe how construction is affected by the availability, quality, and quantity of resources.	STS.HS.1.7.a Describe how construction is affected by the availability, quality, and quantity of resources.		
				STS.HS.1.7.b Identify typical utility services, transmission and usage measuring required for a residential and commercial building.	STS.HS.1.7.b Identify typical utility services, transmission and usage measuring required for a residential and commercial building.		

	Introduction to Engineering	Robotics A	Robotics B	Civil Engineering & Architecture A	Civil Engineering & Architecture B	Engineering & Design A	Engineering & Design B
Contextual Academics				STS.HS.1.7.c Identify code requirements and constraints as they pertain to the installation of services and utilities.	STS.HS.1.7.c Identify code requirements and constraints as they pertain to the installation of services and utilities.		
				STS.HS.1.7.d Identify the criteria and constraints to determine the size and location of new utility service connections.	STS.HS.1.7.d Identify the criteria and constraints to determine the size and location of new utility service connections.		
				STS.HS.1.7.e Identify system designs to incorporate energy conservation techniques.	STS.HS.1.7.e Identify system designs to incorporate energy conservation techniques.		
	STS.HS.1.8 Create a cost and efficiency analysis.						
				STS.HS.1.8.a Compare and contrast the terms R-value and U-factor.	STS.HS.1.8.a Compare and contrast the terms R-value and U-factor.		
				STS.HS.1.8.b Create a cost estimate for a small construction project, including a detailed cost break-down.	STS.HS.1.8.b Create a cost estimate for a small construction project, including a detailed cost break-down.		
				STS.HS.1.8.c Calculate the heat loss for a building envelope.	STS.HS.1.8.c Calculate the heat loss for a building envelope.		

	Introduction to Engineering	Robotics A	Robotics B	Civil Engineering & Architecture A	Civil Engineering & Architecture B	Engineering & Design A	Engineering & Design B
Contextual Academics				STS.HS.1.8.d Calculate the overall R-value of a wall or roof section composed of multiple building components.	STS.HS.1.8.d Calculate the overall R-value of a wall or roof section composed of multiple building components.		
					STS.HS.1.8.e Identify principles of sustainable design.		
	STS.HS.1.9 Identify current local and national building codes.						
					STS.HS.1.9.a Describe how current building codes determine the type, sizing, and placement of site features (i.e. parking lots, and entrances and exit roads, pedestrian and handicapped access, and stormwater facilities).		
	STS.HS.1.10 Apply conventional General Drafting Standards used in architectural drafting situations.						
				STS.HS.1.10.a Identify terms and definitions commonly used in the architectural profession including detail drawings, working drawings and drafting.	STS.HS.1.10.a Identify terms and definitions commonly used in the architectural profession including detail drawings, working drawings and drafting.		

	Introduction to Engineering	Robotics A	Robotics B	Civil Engineering & Architecture A	Civil Engineering & Architecture B	Engineering & Design A	Engineering & Design B
Contextual Academics				STS.HS.1.10.c Describe the orthographic elevation projection.	STS.HS.1.10.c Describe the orthographic elevation projection.		
				STS.HS.1.10.d Create different views such as floor plans, elevations, sections, site, and perspectives.	STS.HS.1.10.d Create different views such as floor plans, elevations, sections, site, and perspectives.		
				STS.HS.1.10.e Apply dimensional information and general notes in architectural views and plans.	STS.HS.1.10.e Apply dimensional information and general notes in architectural views and plans.		
				STS.HS.1.10.f Apply schedules such as doors, windows and rooms in architectural views and plans.	STS.HS.1.10.f Apply schedules such as doors, windows and rooms in architectural views and plans.		
				STS.HS.1.10.g Describe the components that comprise architectural construction (working) drawings.	STS.HS.1.10.g Describe the components that comprise architectural construction (working) drawings.		
					STS.HS.1.10.h Indicate plan review requirements needed to obtain a building permit.		

	Introduction to Engineering	Robotics A	Robotics B	Civil Engineering & Architecture A	Civil Engineering & Architecture B	Engineering & Design A	Engineering & Design B
Contextual Academics	STS.HS.1.11 Communicate design solutions.						
				STS.HS.1.11.a Prepare design ideas using architectural terminology for a presentation.	STS.HS.1.11.a Prepare design ideas using architectural terminology for a presentation.		
				STS.HS.1.11.b Deliver an oral presentation with accompanying visuals featuring both physical and digital work.	STS.HS.1.11.b Deliver an oral presentation with accompanying visuals featuring both physical and digital work.		
				STS.HS.1.11.c Develop and maintain an architectural portfolio that includes physical and digital works.	STS.HS.1.11.c Develop and maintain an architectural portfolio that includes physical and digital works.		
				STS.HS.1.11.d Create shaded and rendered presentation drawings.	STS.HS.1.11.d Create shaded and rendered presentation drawings.		
	STS.HS.3.4 Classify the various types of energy and their uses.						
	STS.HS.3.4.a Evaluate the seven forms of energy.						
	STS.HS.3.4.d Identify the law of conservation of energy.						

	Introduction to Engineering	Robotics A	Robotics B	Civil Engineering & Architecture A	Civil Engineering & Architecture B	Engineering & Design A	Engineering & Design B
Contextual Academics	STS.HS.3.6 Employ various measures of energy.						
						STS.HS.3.6.a Calculate equations using Ohm's Law.	
					STS.HS.3.6.b Calculate equations using thermal energy formulas.	STS.HS.3.6.b Calculate equations using thermal energy formulas.	
					STS.HS.3.6.c Utilize energy related measurement tools in appropriate scenarios.	STS.HS.3.6.c Utilize energy related measurement tools in appropriate scenarios.	
					STS.HS.3.6.d Demonstrate mathematics and measurement proficiency.		
					STS.HS.3.6.e Analyze a building as a system.		
					STS.HS.3.6.f Design an energy audit.		
Employment Skills	STS.HS.4.2 Investigate careers in the engineering field to gain knowledge for informed career decisions.						
	STS.HS.4.2.a Identify opportunities and employment trends in various engineering sectors.	STS.HS.4.2.a Identify opportunities and employment trends in various engineering sectors.	STS.HS.4.2.a Identify opportunities and employment trends in various engineering sectors.	STS.HS.4.2.a Identify opportunities and employment trends in various engineering sectors.	STS.HS.4.2.a Identify opportunities and employment trends in various engineering sectors.	STS.HS.4.2.a Identify opportunities and employment trends in various engineering sectors.	STS.HS.4.2.a Identify opportunities and employment trends in various engineering sectors.

	Introduction to Engineering	Robotics A	Robotics B	Civil Engineering & Architecture A	Civil Engineering & Architecture B	Engineering & Design A	Engineering & Design B
Employment Skills	STS.HS.4.2.b Identify training, education, certification and licensing requirements for occupational choice.	STS.HS.4.2.b Identify training, education, certification and licensing requirements for occupational choice.	STS.HS.4.2.b Identify training, education, certification and licensing requirements for occupational choice.	STS.HS.4.2.b Identify training, education, certification and licensing requirements for occupational choice.	STS.HS.4.2.b Identify training, education, certification and licensing requirements for occupational choice.	STS.HS.4.2.b Identify training, education, certification and licensing requirements for occupational choice.	STS.HS.4.2.b Identify training, education, certification and licensing requirements for occupational choice.
	STS.M.HS.4.2.c Describe work behaviors needed to be employable.	STS.M.HS.4.2.c Describe work behaviors needed to be employable.	STS.M.HS.4.2.c Describe work behaviors needed to be employable.	STS.M.HS.4.2.c Describe work behaviors needed to be employable.	STS.M.HS.4.2.c Describe work behaviors needed to be employable.	STS.M.HS.4.2.c Describe work behaviors needed to be employable.	STS.M.HS.4.2.c Describe work behaviors needed to be employable.
	STS.M.HS.4.2.d Understand the educational, professional, and technical skills required for professional engineering practice.	STS.M.HS.4.2.d Understand the educational, professional, and technical skills required for professional engineering practice.	STS.M.HS.4.2.d Understand the educational, professional, and technical skills required for professional engineering practice.	STS.M.HS.4.2.d Understand the educational, professional, and technical skills required for professional engineering practice.	STS.M.HS.4.2.d Understand the educational, professional, and technical skills required for professional engineering practice.	STS.M.HS.4.2.d Understand the educational, professional, and technical skills required for professional engineering practice.	STS.M.HS.4.2.d Understand the educational, professional, and technical skills required for professional engineering practice.
	STS.M.HS.4.2.e Describe the role of engineers in society.		-	STS.M.HS.4.2.e Describe the role of engineers in society.	STS.M.HS.4.2.e Describe the role of engineers in society.	STS.M.HS.4.2.e Describe the role of engineers in society.	STS.M.HS.4.2.e Describe the role of engineers in society.
		STS.M.HS.4.2.f Identify opportunities and employment trends in various robotic careers.	STS.M.HS.4.2.f Identify opportunities and employment trends in various robotic careers.				
Technical Skills	STS.HS.1.12 Demonstrate the utilization of technology.						
				STS.HS.1.12.a Use the appropriate technology tools for conveying information, solving problems and expediting workplace processes.	STS.HS.1.12.a Use the appropriate technology tools for conveying information, solving problems and expediting workplace processes.		

	Introduction to Engineering	Robotics A	Robotics B	Civil Engineering & Architecture A	Civil Engineering & Architecture B	Engineering & Design A	Engineering & Design B
Technical Skills				STS.HS.1.12.b Utilize basic computer and information technology skills.	STS.HS.1.12.b Utilize basic computer and information technology skills.		
	STS.HS.1.13 Utilize mathematical skills needed in architectural design.						
				STS.HS.1.13.a Apply basic arithmetic.	STS.HS.1.13.a Apply basic arithmetic.		
				STS.HS.1.13.b Apply basic Algebraic skills to solve problems involving area, volume and angles.	STS.HS.1.13.b Apply basic Algebraic skills to solve problems involving area, volume and angles.		
	STS.HS.9.1 Applies appropriate academic and technical skills.						
	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.
	STS.HS.9.1.b Communicates effectively and appropriately.	STS.HS.9.1.b Communicates effectively and appropriately.	STS.HS.9.1.b Communicates effectively and appropriately.	STS.HS.9.1.b Communicates effectively and appropriately.	STS.HS.9.1.b Communicates effectively and appropriately.	STS.HS.9.1.b Communicates effectively and appropriately.	STS.HS.9.1.b Communicates effectively and appropriately.
	STS.HS.9.2 Produce a product.						
		STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.9.2.a Demonstrate the ability to produce a product.
Primary Instructional Resource	MPS created and OER Resources	MPS created and OER Resources	MPS created and OER Resources	MPS created and OER Resources	MPS created and OER Resources	MPS created and OER Resources	MPS created and OER Resources

6-12 Comprehensive Manufacturing Pathway Standards: Students will demonstrate competency in the practices and skills in the Manufacturing Pathway.								
Concepts	**Course Level Standards**							
	Introduction to Metalworking	**Small Engines**	**Welding I**	**Welding II**	**Precision Machining A**	**Precision Machining B**	**Computer Integrated Machining**	**Advanced Precision Machining**
Safety Training & Practice	STS.HS.5.1, STS.HS.6.1, STS.HS.7.1 Apply safety principles, practices and guidelines to the work environment.							
	STS.HS.5.1.a Successfully complete written safety assessment.	STS.HS.7.1.a Successfully complete written safety assessment.	STS.HS.6.1.a Successfully complete written safety assessment.	STS.HS.6.1.a Successfully complete written safety assessment.	STS.HS.5.1.a Successfully complete written safety assessment.	STS.HS.5.1.a Successfully complete written safety assessment.	STS.HS.5.1.a Successfully complete written safety assessment.	STS.HS.5.1.a Successfully complete written safety assessment.
	STS.HS.5.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).	STS.HS.7.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).	STS.HS.6.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).	STS.HS.6.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).	STS.HS.5.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).	STS.HS.5.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).	STS.HS.5.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).	STS.HS.5.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).
	STS.HS.5.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.	STS.HS.7.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.	STS.HS.6.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.	STS.HS.6.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.	STS.HS.5.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.	STS.HS.5.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.	STS.HS.5.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.	STS.HS.5.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.
	STS.HS.5.1.e Research the main hazards that are possible in the shop setting.		STS.HS.6.1.e Research the main hazards that are possible in the shop setting.	STS.HS.6.1.e Research the main hazards that are possible in the shop setting.	STS.HS.5.1.e Research the main hazards that are possible in the shop setting.	STS.HS.5.1.e Research the main hazards that are possible in the shop setting.	STS.HS.5.1.e Research the main hazards that are possible in the shop setting.	STS.HS.5.1.e Research the main hazards that are possible in the shop setting.

	Introduction to Metalworking	Small Engines	Welding I	Welding II	Precision Machining A	Precision Machining B	Computer Integrated Machining	Advanced Precision Machining
Safety Training & Practice	STS.HS.5.1.f Demonstrate proper handling and storing of materials.		STS.HS.6.1.f Demonstrate proper handling and storing of materials.	STS.HS.6.1.f Demonstrate proper handling and storing of materials.	STS.HS.5.1.f Demonstrate proper handling and storing of materials.	STS.HS.5.1.f Demonstrate proper handling and storing of materials.	STS.HS.5.1.f Demonstrate proper handling and storing of materials.	STS.HS.5.1.f Demonstrate proper handling and storing of materials.
	STS.HS.5.1.g Identify methods of disposing of hazardous materials.		STS.HS.6.1.g Identify methods of disposing of hazardous materials.	STS.HS.6.1.g Identify methods of disposing of hazardous materials.	STS.HS.5.1.g Identify methods of disposing of hazardous materials.	STS.HS.5.1.g Identify methods of disposing of hazardous materials.	STS.HS.5.1.g Identify methods of disposing of hazardous materials.	STS.HS.5.1.g Identify methods of disposing of hazardous materials.
	STS.HS.5.1.h Demonstrate principles of safe physical movement to avoid slips, trips, and spills.		STS.HS.6.1.h Demonstrate principles of safe physical movement to avoid slips, trips, and spills.	STS.HS.6.1.h Demonstrate principles of safe physical movement to avoid slips, trips, and spills.	STS.HS.5.1.h Demonstrate principles of safe physical movement to avoid slips, trips, and spills	STS.HS.5.1.h Demonstrate principles of safe physical movement to avoid slips, trips, and spills	STS.HS.5.1.h Demonstrate principles of safe physical movement to avoid slips, trips, and spills	STS.HS.5.1.h Demonstrate principles of safe physical movement to avoid slips, trips, and spills
	STS.HS.5.1.i Demonstrate the correct way to lift and move materials.		STS.HS.6.1.i Demonstrate the correct way to lift and move materials.	STS.HS.6.1.i Demonstrate the correct way to lift and move materials.	STS.HS.5.1.i Demonstrate the correct way to lift and move materials.	STS.HS.5.1.i Demonstrate the correct way to lift and move materials.	STS.HS.5.1.i Demonstrate the correct way to lift and move materials.	STS.HS.5.1.i Demonstrate the correct way to lift and move materials.
	STS.HS.5.1.j Properly handle metal/wood chips and waste material.		STS.HS.6.1.j Properly handle metal/wood chips and waste material.	STS.HS.6.1.j Properly handle metal/wood chips and waste material.	STS.HS.5.1.j Properly handle metal/wood chips and waste material.	STS.HS.5.1.j Properly handle metal/wood chips and waste material.	STS.HS.5.1.j Properly handle metal/wood chips and waste material.	STS.HS.5.1.j Properly handle metal/wood chips and waste material.

	Introduction to Metalworking	Small Engines	Welding I	Welding II	Precision Machining A	Precision Machining B	Computer Integrated Machining	Advanced Precision Machining
Contextual Academics	STS.HS.5.3 Demonstrate use of manufacturing communications.							
	STS.HS.5.3.a Interpret manufacturing terminology, plans, sketches, drawings and schedules.	STS.HS.5.3.a Interpret manufacturing terminology, plans, sketches, drawings and schedules.	STS.HS.5.3.a Interpret manufacturing terminology, plans, sketches, drawings and schedules.	STS.HS.5.3.a Interpret manufacturing terminology, plans, sketches, drawings and schedules.	STS.HS.5.3.a Interpret manufacturing terminology, plans, sketches, drawings and schedules.	STS.HS.5.3.a Interpret manufacturing terminology, plans, sketches, drawings and schedules.	STS.HS.5.3.a Interpret manufacturing terminology, plans, sketches, drawings and schedules.	STS.HS.5.3.a Interpret manufacturing terminology, plans, sketches, drawings and schedules.
		STS.HS.5.3.c Develop a schedule of materials in proper sequence.	STS.HS.5.3.c Develop a schedule of materials in proper sequence.	STS.HS.5.3.c Develop a schedule of materials in proper sequence.	STS.HS.5.3.c Develop a schedule of materials in proper sequence.	STS.HS.5.3.c Develop a schedule of materials in proper sequence.	STS.HS.5.3.c Develop a schedule of materials in proper sequence.	STS.HS.5.3.c Develop a schedule of materials in proper sequence.
	STS.HS.6.3 Demonstrate use of welding communications.							
			STS.HS.6.3.a Accurately interpret welding terminology, plans, sketches, drawings and schedules.	STS.HS.6.3.a Accurately interpret welding terminology, plans, sketches, drawings and schedules.				
				STS.HS.6.3.c Develop a schedule of materials in proper sequence.				
	STS.HS.6.5 Produce a product using welding technology.							
			STS.HS.6.5.a Correctly use math functions and formulas to complete job/workplace tasks.	STS.HS.6.5.a Correctly use math functions and formulas to complete job/workplace tasks.				
			STS.HS.6.5.e Demonstrate knowledge of welding inspection & testing principles.	STS.HS.6.5.e Demonstrate knowledge of welding inspection & testing principles.				

	Introduction to Metalworking	Small Engines	Welding I	Welding II	Precision Machining A	Precision Machining B	Computer Integrated Machining	Advanced Precision Machining
Employment Skills	STS.HS.5.2 Investigate career opportunities in the manufacturing industry.							
	STS.HS.5.2.a Identify the responsibilities and characteristics of professionals in the manufacturing industry.	STS.HS.5.2.a Identify the responsibilities and characteristics of professionals in the manufacturing industry.	STS.HS.5.2.a Identify the responsibilities and characteristics of professionals in the manufacturing industry.	STS.HS.5.2.a Identify the responsibilities and characteristics of professionals in the manufacturing industry.	STS.HS.5.2.a Identify the responsibilities and characteristics of professionals in the manufacturing industry.	STS.HS.5.2.a Identify the responsibilities and characteristics of professionals in the manufacturing industry.	STS.HS.5.2.a Identify the responsibilities and characteristics of professionals in the manufacturing industry.	STS.HS.5.2.a Identify the responsibilities and characteristics of professionals in the manufacturing industry.
	STS.HS.5.2.b Identify employment trends in manufacturing.	STS.HS.5.2.b Identify employment trends in manufacturing.	STS.HS.5.2.b Identify employment trends in manufacturing.	STS.HS.5.2.b Identify employment trends in manufacturing.	STS.HS.5.2.b Identify employment trends in manufacturing.	STS.HS.5.2.b Identify employment trends in manufacturing.	STS.HS.5.2.b Identify employment trends in manufacturing.	STS.HS.5.2.b Identify employment trends in manufacturing.
	STS.HS.5.2.c Describe work behaviors needed to be employable.	STS.HS.5.2.c Describe work behaviors needed to be employable.	STS.HS.5.2.c Describe work behaviors needed to be employable.	STS.HS.5.2.c Describe work behaviors needed to be employable.	STS.HS.5.2.c Describe work behaviors needed to be employable.	STS.HS.5.2.c Describe work behaviors needed to be employable.	STS.HS.5.2.c Describe work behaviors needed to be employable.	STS.HS.5.2.c Describe work behaviors needed to be employable.
	STS.HS.5.2.d Identify the training, education, certification and licensing requirements for various careers in the manufacturing industry.	STS.HS.5.2.d Identify the training, education, certification and licensing requirements for various careers in the manufacturing industry.	STS.HS.5.2.d Identify the training, education, certification and licensing requirements for various careers in the manufacturing industry.	STS.HS.5.2.d Identify the training, education, certification and licensing requirements for various careers in the manufacturing industry.	STS.HS.5.2.d Identify the training, education, certification and licensing requirements for various careers in the manufacturing industry.	STS.HS.5.2.d Identify the training, education, certification and licensing requirements for various careers in the manufacturing industry.	STS.HS.5.2.d Identify the training, education, certification and licensing requirements for various careers in the manufacturing industry.	STS.HS.5.2.d Identify the training, education, certification and licensing requirements for various careers in the manufacturing industry.
		STS.HS.5.2.e Identify the various careers, primary duties and attributes of a draftsman or design engineer.			STS.HS.5.2.e Identify the various careers, primary duties and attributes of a draftsman or design engineer.	STS.HS.5.2.e Identify the various careers, primary duties and attributes of a draftsman or design engineer.	STS.HS.5.2.e Identify the various careers, primary duties and attributes of a draftsman or design engineer.	STS.HS.5.2.e Identify the various careers, primary duties and attributes of a draftsman or design engineer.

	Introduction to Metalworking	Small Engines	Welding I	Welding II	Precision Machining A	Precision Machining B	Computer Integrated Machining	Advanced Precision Machining
Employment Skills	STS.HS.6.2 Investigate career opportunities in the welding industry.							
			STS.HS.6.2.a Identify the responsibilities and characteristics of professionals in the welding industry.	STS.HS.6.2.a Identify the responsibilities and characteristics of professionals in the welding industry.				
			STS.HS.6.2.b Identify employment trends in welding.	STS.HS.6.2.b Identify employment trends in welding.				
	STS.HS.7.2 Investigate career opportunities in the transportation industry.							
		STS.HS.7.2.a Identify the responsibilities and characteristics of professionals in the transportation industry.						
		STS.HS.7.2.b Identify employment trends in the transportation industry.						
		STS.HS.7.2.c Describe work behaviors needed to be employable.						

	Introduction to Metalworking	Small Engines	Welding I	Welding II	Precision Machining A	Precision Machining B	Computer Integrated Machining	Advanced Precision Machining
Employment Skills		STS.HS.7.2.d Identify the training, education, certification and licensing requirements for various careers in the transportation industry.						
Technical Skills	STS.HS.5.4, STS.HS.6.4 Identify the materials, tools and equipment needed to manufacture a product.							
	STS.HS.5.4.a Determine types of materials, fasteners, adhesives and finishes needed to produce a specific product.		STS.HS.6.4.a Determine types of materials, fasteners, adhesives and finishes needed to produce a specific product.	STS.HS.6.4.a Determine types of materials, fasteners, adhesives and finishes needed to produce a specific product.	STS.HS.5.4.a Determine types of materials, fasteners, adhesives and finishes needed to produce a specific product.	STS.HS.5.4.a Determine types of materials, fasteners, adhesives and finishes needed to produce a specific product.	STS.HS.5.4.a Determine types of materials, fasteners, adhesives and finishes needed to produce a specific product.	STS.HS.5.4.a Determine types of materials, fasteners, adhesives and finishes needed to produce a specific product.
	STS.HS.5.4.b Determine the correct tools and equipment needed to produce a specific product.		STS.HS.6.4.b Determine the correct tools and equipment needed to produce a specific product.	STS.HS.6.4.b Determine the correct tools and equipment needed to produce a specific product.	STS.HS.5.4.b Determine the correct tools and equipment needed to produce a specific product.	STS.HS.5.4.b Determine the correct tools and equipment needed to produce a specific product.	STS.HS.5.4.b Determine the correct tools and equipment needed to produce a specific product.	STS.HS.5.4.b Determine the correct tools and equipment needed to produce a specific product.
	STS.HS.5.4.c Demonstrate proper use of the drill press.				STS.HS.5.4.c Demonstrate proper use of the drill press.	STS.HS.5.4.c Demonstrate proper use of the drill press.	STS.HS.5.4.c Demonstrate proper use of the drill press.	STS.HS.5.4.c Demonstrate proper use of the drill press.
				STS.HS.5.4.d Demonstrate the proper utilization of the engine lathe.	STS.HS.5.4.d Demonstrate the proper utilization of the engine lathe.	STS.HS.5.4.d Demonstrate the proper utilization of the engine lathe.	STS.HS.5.4.d Demonstrate the proper utilization of the engine lathe.	STS.HS.5.4.d Demonstrate the proper utilization of the engine lathe.
					STS.HS.5.4.e Demonstrate proper utilization of the vertical milling machine and/or router	STS.HS.5.4.e Demonstrate proper utilization of the vertical milling machine and/or router	STS.HS.5.4.e Demonstrate proper utilization of the vertical milling machine and/or router	STS.HS.5.4.e Demonstrate proper utilization of the vertical milling machine and/or router

	Introduction to Metalworking	Small Engines	Welding I	Welding II	Precision Machining A	Precision Machining B	Computer Integrated Machining	Advanced Precision Machining
Technical Skills						STS.HS.5.4.f Properly use a surface grinder.	STS.HS.5.4.f Properly use a surface grinder.	STS.HS.5.4.f Properly use a surface grinder.
								STS.HS.5.4.g Demonstrate the proper use of a table saw.
					STS.HS.5.4.h Operate the CNC Mill, Router, and/or Lathe.	STS.HS.5.4.h Operate the CNC Mill, Router, and/or Lathe.	STS.HS.5.4.h Operate the CNC Mill, Router, and/or Lathe.	
	STS.HS.5.4.i Demonstrate proper use of equipment not specifically mentioned.		STS.HS.5.4.i Demonstrate proper use of equipment not specifically mentioned.	STS.HS.5.4.i Demonstrate proper use of equipment not specifically mentioned.	STS.HS.5.4.i Demonstrate proper use of equipment not specifically mentioned.	STS.HS.5.4.i Demonstrate proper use of equipment not specifically mentioned.	STS.HS.5.4.i Demonstrate proper use of equipment not specifically mentioned.	STS.HS.5.4.i Demonstrate proper use of equipment not specifically mentioned.
	STS.HS.5.5 Manufacture a product using manufacturing technology.							
	STS.HS.5.5.a Correctly use math functions and formulas to complete job/workplace tasks.				STS.HS.5.5.a Correctly use math functions and formulas to complete job/workplace tasks.	STS.HS.5.5.a Correctly use math functions and formulas to complete job/workplace tasks.	STS.HS.5.5.a Correctly use math functions and formulas to complete job/workplace tasks.	STS.HS.5.5.a Correctly use math functions and formulas to complete job/workplace tasks.
	STS.HS.5.5.b Correctly and accurately use tools and equipment to perform manufacturing operations according to drawings and specifications.	STS.HS.5.5.b Correctly and accurately use tools and equipment to perform manufacturing operations according to drawings and specifications.	STS.HS.5.5.b Correctly and accurately use tools and equipment to perform manufacturing operations according to drawings and specifications.	STS.HS.5.5.b Correctly and accurately use tools and equipment to perform manufacturing operations according to drawings and specifications.	STS.HS.5.5.b Correctly and accurately use tools and equipment to perform manufacturing operations according to drawings and specifications.	STS.HS.5.5.b Correctly and accurately use tools and equipment to perform manufacturing operations according to drawings and specifications.	STS.HS.5.5.b Correctly and accurately use tools and equipment to perform manufacturing operations according to drawings and specifications.	STS.HS.5.5.b Correctly and accurately use tools and equipment to perform manufacturing operations according to drawings and specifications.

	Introduction to Metalworking	Small Engines	Welding I	Welding II	Precision Machining A	Precision Machining B	Computer Integrated Machining	Advanced Precision Machining
Technical Skills	STS.HS.5.5.c Demonstrate proper and accurate measurement.	STS.HS.5.5.c Demonstrate proper and accurate measurement .	STS.HS.5.5.c Demonstrate proper and accurate measurement.	STS.HS.5.5.c Demonstrate proper and accurate measurement.	STS.HS.5.5.c Demonstrate proper and accurate measurement.	STS.HS.5.5.c Demonstrate proper and accurate measurement.	STS.HS.5.5.c Demonstrate proper and accurate measurement.	STS.HS.5.5.c Demonstrate proper and accurate measurement.
	STS.HS.6.5 Produce a product using welding technology.							
			STS.HS.6.5.b Correctly and accurately use tools and equipment to perform welding operations according to drawings and specifications.	STS.HS.6.5.b Correctly and accurately use tools and equipment to perform welding operations according to drawings and specifications.				
			STS.HS.6.5.c Perform metal cutting operations using various methods (i.e. oxy-acetylene, mechanized oxy fuel gas, plasma arc and manual air carbon arc).	STS.HS.6.5.c Perform metal cutting operations using various methods (i.e. oxy-acetylene, mechanized oxy fuel gas, plasma arc and manual air carbon arc).				
			STS.HS.6.5.d Weld using various methods of welding (i.e. gas metal arc welding, GMAW-S, GMAW spray transfer, flux core arc welding, gas tungsten arc welding, shielded metal arc welding, oxy-acetylene) and using various positions (i.e. flat, horizontal, vertical up, vertical down, and overhead).	STS.HS.6.5.d Weld using various methods of welding (i.e. gas metal arc welding, GMAW-S, GMAW spray transfer, flux core arc welding, gas tungsten arc welding, shielded metal arc welding, oxy-acetylene) and using various positions (i.e. flat, horizontal, vertical up, vertical down, and overhead).				

	Introduction to Metalworking	Small Engines	Welding I	Welding II	Precision Machining A	Precision Machining B	Computer Integrated Machining	Advanced Precision Machining
Technical Skills	STS.HS.7.3 Describe the systems and components used in the transportation technician industry.							
		STS.HS.7.3.a Describe the function and operation of the systems of a vehicle or equipment (i.e. mechanical, electrical, fuel, suspension, etc.) and the components needed to operate those systems.						
		STS.HS.7.3.b Demonstrate the use of communication tools (i.e. manuals, on-line specification and service procedures, etc.) used in the transportation service industry.						
		STS.HS.7.3.c Identify the different modes of transportation.						
	STS.HS.7.4 Diagnose and repair the systems and components of a vehicle or equipment.							
		STS.HS.7.4.a Determine the correct tools and equipment used for the diagnosis, service and repair of the systems and components.						

	Introduction to Metalworking	Small Engines	Welding I	Welding II	Precision Machining A	Precision Machining B	Computer Integrated Machining	Advanced Precision Machining
Technical Skills		STS.HS.7.4.b Determine the different types of fasteners, adhesives and finishes needed to complete service and repair of the vehicle or equipment.						
		STS.HS.7.4.c Demonstrate the use of measurement and math functions/formulas needed to complete job/workplace tasks.						
	STS.HS.9.1 Applies appropriate academic and technical skills.							
	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.
	STS.HS.9.1.b Communicates effectively and appropriately.	STS.HS.9.1.b Communicates effectively and appropriately.	STS.HS.9.1.b Communicates effectively and appropriately.	STS.HS.9.1.b Communicates effectively and appropriately.	STS.HS.9.1.b Communicates effectively and appropriately.	STS.HS.9.1.b Communicates effectively and appropriately.	STS.HS.9.1.b Communicates effectively and appropriately.	STS.HS.9.1.b Communicates effectively and appropriately.

	Introduction to Metalworking	Small Engines	Welding I	Welding II	Precision Machining A	Precision Machining B	Computer Integrated Machining	Advanced Precision Machining
Technical Skills	STS.HS.9.2 Produce a product.							
	STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.9.2.a Demonstrate the ability to produce a product.
Primary Instructional Resource	MPS created and OER Resources	Briggs and Stratton Small Engines Textbook and online resources	MPS created and OER Resources	MPS created and OER Resources	MPS created and OER Resources	MPS created and OER Resources	MPS created and OER Resources	MPS created and OER Resources

6-12 Comprehensive Advanced Topics Standards: Students will demonstrate competency in the practices and skills in the Construction, Manufacturing, and Engineering Pathways in order to solve a design problem.									
Concepts	**Construction Pathway Capstone Courses**		**Engineering Pathway Capstone Courses**			**Manufacturing Pathway Capstone Courses**			**Advanced Topics Course**
	Advanced Carpentry	**Construction & Management**	**Robotics B**	**Engineering & Design B**	**Civil Engineering & Architecture B**	**Welding II**	**Computer Integrated Machining**	**Advanced Precision Machining**	**STEM Design & Development**
Safety Training & Practice	STS.HS.1.1 Identify safety guidelines.		STS.HS.4.1 Apply safety principles, practices and guidelines to the work environment.		STS.HS.1.1 Identify safety guidelines.	STS.HS.5.1, STS.HS.6.1 Apply safety principles, practices and guidelines to the work environment.			STS.HS.4.1 Apply safety principles, practices and guidelines to the work environment.
	STS.HS.1.1.b Identify the consents necessary to enter a confined space on a construction site.	STS.HS.1.1.b Identify the consents necessary to enter a confined space on a construction site.	STS.HS.4.1.a Successfully complete written safety assessment.	STS.HS.4.1.a Successfully complete written safety assessment.	STS.HS.1.1.a Successfully complete written safety assessment.	STS.HS.6.1.a Successfully complete written safety assessment.	STS.HS.5.1.a Successfully complete written safety assessment.	STS.HS.5.1.a Successfully complete written safety assessment.	STS.HS.4.1.a Successfully complete written safety assessment.
	STS.M.HS.1.1.e Model general shop safety practices.	STS.M.HS.1.1.e Model general shop safety practices.	STS.HS.4.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).	STS.HS.4.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).	STS.HS.1.1.b Identify the consents necessary to enter a confined space on a construction site.	STS.HS.6.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).	STS.HS.5.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).	STS.HS.5.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).	STS.HS.4.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).
	STS.HS.2.1 Apply safety principles, practices and guidelines to the work environment.		STS.HS.4.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.	STS.HS.4.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.	STS.HS.1.1.c Identify the requirements of Personal Protective Equipment (PPE).	STS.HS.6.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.	STS.HS.5.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.	STS.HS.5.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.	STS.HS.4.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.

	Advanced Carpentry	Construction & Management	Robotics B	Engineering & Design B	Civil Engineering & Architecture B	Welding II	Computer Integrated Machining	Advanced Precision Machining	STEM Design & Development
Safety Training & Practice	STS.HS.2.1.a Successfully complete written safety assessment.	STS.HS.2.1.a Successfully complete written safety assessment.	STS.M.HS.4.1.d Demonstrate the safe use of tools, machines, and equipment in alignment with industry standards.	STS.M.HS.4.1.d Demonstrate the safe use of tools, machines, and equipment in alignment with industry standards.	STS.HS.1.1.d Identify protocol involved in crisis management such as an employee injury, equipment damage, and a collapse on a project of people or materials.	STS.HS.6.1.e Research the main hazards that are possible in the shop setting.	STS.HS.5.1.e Research the main hazards that are possible in the shop setting.	STS.HS.5.1.e Research the main hazards that are possible in the shop setting.	STS.M.HS.4.1.d Demonstrate the safe use of tools, machines, and equipment in alignment with industry standards.
	STS.HS.2.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).	STS.HS.2.1.b Apply the requirements of safety glasses and other Personal Protective Equipment (PPE).	STS.M.HS.4.1.e Describe the role of government agencies in providing a safe workplace.	STS.M.HS.4.1.e Describe the role of government agencies in providing a safe workplace.		STS.HS.6.1.f Demonstrate proper handling and storing of materials.	STS.HS.5.1.f Demonstrate proper handling and storing of materials.	STS.HS.5.1.f Demonstrate proper handling and storing of materials.	STS.M.HS.4.1.e Describe the role of government agencies in providing a safe workplace.
	STS.HS.2.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.	STS.HS.2.1.c Apply the safe use of tools, machines, and equipment in alignment with industry standards to maintain a safe workplace.	STS.M.HS.4.1.f Analyze the role of government agencies in providing a safe workplace.	STS.M.HS.4.1.f Analyze the role of government agencies in providing a safe workplace.		STS.HS.6.1.g Identify methods of disposing of hazardous materials.	STS.HS.5.1.g Identify methods of disposing of hazardous materials.	STS.HS.5.1.g Identify methods of disposing of hazardous materials.	
	STS.HS.2.1.d Describe the role of government agencies in providing a safe workplace.	STS.HS.2.1.d Describe the role of government agencies in providing a safe workplace.				STS.HS.6.1.h Demonstrate principles of safe physical movement to avoid slips, trips, and spills.	STS.HS.5.1.h Demonstrate principles of safe physical movement to avoid slips, trips, and spills	STS.HS.5.1.h Demonstrate principles of safe physical movement to avoid slips, trips, and spills	
	STS.HS.2.1.e Demonstrate methods to correct common design and construction hazards.	STS.HS.2.1.e Demonstrate methods to correct common design and construction hazards.				STS.HS.6.1.i Demonstrate the correct way to lift and move materials.	STS.HS.5.1.i Demonstrate the correct way to lift and move materials.	STS.HS.5.1.i Demonstrate the correct way to lift and move materials.	

	Advanced Carpentry	Construction & Management	Robotics B	Engineering & Design B	Civil Engineering & Architecture B	Welding II	Computer Integrated Machining	Advanced Precision Machining	STEM Design & Development
Safety Training & Practice	STS.M.HS.2.1.g Demonstrate safe working practices when using pneumatic tools.	STS.M.HS.2.1.g Demonstrate safe working practices when using pneumatic tools.				STS.HS.6.1.j Properly handle metal/wood chips and waste material.	STS.HS.5.1.j Properly handle metal/wood chips and waste material.	STS.HS.5.1.j Properly handle metal/wood chips and waste material.	
	STS.M.HS.2.1.h Demonstrate principles of safe physical movement to avoid slips, trips, and spills.	STS.M.HS.2.1.h Demonstrate principles of safe physical movement to avoid slips, trips, and spills.							
	STS.M.HS.2.1.i Understand the correct way to lift and move materials.	STS.M.HS.2.1.i Understand the correct way to lift and move materials.							
	STS.M.HS.2.1.j Properly handle metal/wood chips and waste material.	STS.M.HS.2.1.j Properly handle metal/wood chips and waste material.							
Contextual Academics	STS.HS.1.6 Identify typical building design and construction methods and practices.		STS.HS.4.3 Employ engineering design process principles to solve an engineering problem.			STS.HS.5.3 Demonstrate use of manufacturing communications.			STS.HS.4.3 Employ engineering design process principles to solve an engineering problem.
	STS.HS.1.6.a Identify various digital drafting and modeling options (i.e. CADD/BIM).	STS.HS.1.6.a Identify various digital drafting and modeling options (i.e. CADD/BIM).	STS.HS.4.3.a Define an engineering problem and research possible solutions.	STS.HS.4.3.a Define an engineering problem and research possible solutions.	STS.M.HS.4.3.k Generate multiple potential solution concepts.	STS.HS.5.3.a Interpret manufacturing terminology, plans, sketches, drawings and schedules.	STS.HS.5.3.a Interpret manufacturing terminology, plans, sketches, drawings and schedules.	STS.HS.5.3.a Interpret manufacturing terminology, plans, sketches, drawings and schedules.	STS.M.HS.4.3.c Explain and justify an engineering design process.

	Advanced Carpentry	Construction & Management	Robotics B	Engineering & Design B	Civil Engineering & Architecture B	Welding II	Computer Integrated Machining	Advanced Precision Machining	STEM Design & Development
Contextual Academics	STS.HS.1.6.c Identify the types of materials, their properties and applications used in building construction.	STS.HS.1.6.c Identify the types of materials, their properties and applications used in building construction.	STS.HS.4.3.b Use basic technical sketching and drawing skills, engineering notebook standards and engineering protocols to document research and solutions.	STS.HS.4.3.b Use basic technical sketching and drawing skills, engineering notebook standards and engineering protocols to document research and solutions.	STS.HS.1.5 Identify site characteristics and how they affect building design and land development.	STS.HS.5.3.c Develop a schedule of materials in proper sequence.	STS.HS.5.3.c Develop a schedule of materials in proper sequence.	STS.HS.5.3.c Develop a schedule of materials in proper sequence.	STS.M.HS.4.3.d Make judgements and decisions based on evidence.
	STS.HS.1.6.e Identify the environmental impact of material usage.	STS.HS.1.6.e Identify the environmental impact of material usage.	STS.HS.4.5 Describe the functions of a basic robot.	STS.M.HS.4.3.e Using a variety of measuring devices, measure and report quantities accurately and to a precision appropriate for the purpose.	STS.HS.1.5.a Identify the impact of site development (I.e. storm water runoff, pedestrian and vehicular access).	STS.HS.6.3 Demonstrate use of welding communications.			STS.M.HS.4.3.e Using a variety of measuring devices, measure and report quantities accurately and to a precision appropriate for the purpose.
	STS.HS.1.8 Create a cost and efficiency analysis.		STS.HS.4.5.a Identify basic programming concepts: structures, variables, constants and logical operators.	STS.M.HS.4.3.f Use spatial visualization to create and interpret graphical communication of two- and three dimensional objects.	STS.HS.1.5.b Explain the purpose for the use of Low Impact Development techniques in site development.	STS.HS.6.3.a Accurately interpret welding terminology, plans, sketches, drawings and schedules.			STS.M.HS.4.3.f Use spatial visualization to create and interpret graphical communication of two- and three dimensional objects.
		STS.HS.1.8.a Compare and contrast the terms R-value and U-factor.	STS.HS.4.5.b Identify various aspects of robotics in industry.	STS.M.HS.4.3.h Apply appropriate engineering tolerances to specify the allowable variation, size of individual features, and orientation and location between features of an object.	STS.HS.1.5.c Identify specifications and codes for a site design process.	STS.HS.6.3.c Develop a schedule of materials in proper sequence.			STS.M.HS.4.3.k Generate multiple potential solution concepts.

	Advanced Carpentry	Construction & Management	Robotics B	Engineering & Design B	Civil Engineering & Architecture B	Welding II	Computer Integrated Machining	Advanced Precision Machining	STEM Design & Development
Contextual Academics	STS.HS.1.8.b Create a cost estimate for a small construction project, including a detailed cost break-down.	STS.HS.1.8.b Create a cost estimate for a small construction project, including a detailed cost break-down.	STS.HS.4.6 Design and assemble robots that are functionally and structurally sound.	STS.M.HS.4.3.j Determine physical properties associated with an object.	STS.HS.1.5.d Identify soil characteristics important to the design and construction of a building on the site.	STS.HS.6.5 Produce a product using welding technology.			STS.M.HS.4.3.m Persevere to solve a problem or achieve a goal.
	STS.HS.1.8.e Identify principles of sustainable design.	STS.HS.1.8.e Identify principles of sustainable design.	STS.HS.4.6.a Generate a solution for a robot to overcome a physics challenge.	STS.M.HS.4.3.l Select a solution path from many options to successfully address a problem or opportunity.	STS.HS.1.6 Identify typical building design and construction methods and practices.	STS.HS.6.5.a Correctly use math functions and formulas to complete job/workplace tasks.			STS.M.HS.4.3.p Demonstrate independent thinking and self-direction in pursuit of accomplishing a goal.
	STS.HS.1.10 Apply conventional General Drafting Standards used in architectural drafting situations.		STS.HS.4.6.b Construct a fully functioning robot that has proof of concept through engineering notebook protocols.	STS.HS.4.4 Build an engineering related product or structure.	STS.HS.1.6.a Identify various digital drafting and modeling options (i.e. CADD/BIM).	STS.HS.6.5.e Demonstrate knowledge of welding inspection & testing principles.			STS.M.HS.4.3.q Demonstrate flexibility and adaptability to change.
	STS.HS.1.10.d Create different views such as floor plans, elevations, sections, site, and perspectives.	STS.HS.1.10.d Create different views such as floor plans, elevations, sections, site, and perspectives.	STS.HS.4.6.c Assemble drive trains that utilize different gear ratios to understand mechanical setups.	STS.HS.4.4.a Determine structural requirements, specifications and estimate costs for the products or structures.	STS.HS.1.6.b Identify the components that comprise architectural construction (working) drawings.				STS.HS.4.7 Demonstrate use of engineering communications.
	STS.HS.1.12 Demonstrate the utilization of technology		STS.HS.4.7 Demonstrate use of engineering communications	STS.HS.4.4.b Accurately follow plans to construct an engineering related product or structure.	STS.HS.1.6.c Identify the types of materials, their properties and applications used in building construction.				STS.HS.4.7.a Apply engineering design and process standards to begin investigating a problem.

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Contextual Academics	STS.HS.1.12.b Utilize basic computer and information technology skills	STS.HS.1.12.b Utilize basic computer and information technology skills	STS.HS.4.7.f Formally present a design solution to peers and other stakeholders.	STS.M.HS.4.4.c Create a set of working drawings using 3D computer-aided design (CAD) software to document a design according to standard engineering practices.	STS.HS.1.6.d Identify different types of fasteners, adhesives and finishes.				STS.HS.4.7.b Identify a concise problem statement that provides a foundation in solving problems.
	STS.HS.1.13 Utilize mathematical skills needed in architectural design.			STS.M.HS.4.4.d Create an assembly model using 3D computer-aided design (CAD) software to represent an assembly of parts.	STS.HS.1.6.e Identify the environmental impact of material usage.				STS.HS.4.7.c Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.
	STS.HS.1.13.a Apply basic arithmetic	STS.HS.1.13.a Apply basic arithmetic			STS.HS.1.7 Identify residential and commercial building systems.				STS.HS.4.7.d Locate, organize and reference written information from various sources to communicate with co-workers and clients/participants.
	STS.HS.1.13.b Apply basic Algebraic skills to solve problems involving area, volume and angles.	STS.HS.1.13.b Apply basic Algebraic skills to solve problems involving area, volume and angles.			STS.HS.1.7.a Describe how construction is affected by the availability, quality, and quantity of resources.				STS.HS.4.7.g Apply engineering notebook standards and protocols during documentation.

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Contextual Academics	STS.HS.2.5 Summarize building systems and components.				STS.HS.1.7.b Identify typical utility services, transmission and usage measuring required for a residential and commercial building.				STS.HS.4.8 Identify the materials, tools and equipment needed to manufacture a product.
	STS.HS.2.5.a Describe the building systems needed to complete a construction	STS.HS.2.5.a Describe the building systems needed to complete a construction project.			STS.HS.1.7.c Identify code requirements and constraints as they pertain to the installation of services and utilities.				STS.HS.4.8.a Determine types of materials, fasteners, adhesives and finishes needed to produce a specific product.
		STS.HS.2.5.b Describe the building components needed to complete a construction project (i.e. trusses, joists, beams, etc.)..			STS.HS.1.7.d Identify the criteria and constraints to determine the size and location of new utility service connections.				STS.HS.4.8.b Select tools for the correct operation.
	STS.HS.2.5.c Identify the types and sizes of construction materials needed to complete a construction project.	STS.HS.2.5.c Identify the types and sizes of construction materials needed to complete a construction project.			STS.HS.1.7.e Identify system designs to incorporate energy conservation techniques.				

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Contextual Academics		STS.HS.2.6 Demonstrate the installation of construction sub-systems.			STS.HS.1.8 Create a cost and efficiency analysis.				
		STS.HS.2.6.a Accurately use math functions and formulas to complete job/workplace tasks.			STS.HS.1.8.a Compare and contrast the terms R-value and U-factor.				
		STS.HS.2.6.b Correctly and accurately use tools and equipment to perform material takeoff (MTO) to drawings and specifications.			STS.HS.1.8.b Create a cost estimate for a small construction project, including a detailed cost break-down.				
		STS.HS.2.9 Demonstrate the proper installation of electrical components.			STS.HS.1.8.c Calculate the heat loss for a building envelope.				
		STS.HS.2.9.a Apply knowledge of basic wiring theory and terminology.			STS.HS.1.8.d Calculate the overall R-value of a wall or roof section composed of multiple building components.				
	STS.HS.5.4 Identify the materials, tools and equipment needed to manufacture a product.				STS.HS.1.8.e Identify principles of sustainable design.				

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Contextual Academics	STS.HS.5.4.a Determine types of materials, fasteners, adhesives and finishes needed to produce a specific product.	STS.HS.5.4.a Determine types of materials, fasteners, adhesives and finishes needed to produce a specific product.			STS.HS.1.9 Identify current local and national building codes.				
	STS.HS.5.4.b Determine the correct tools and equipment needed to produce a specific product.	STS.HS.5.4.b Determine the correct tools and equipment needed to produce a specific product.			STS.HS.1.9.a Describe how current building codes determine the type, sizing, and placement of site features (i.e. parking lots, and entrances and exit roads, pedestrian and handicapped access, and stormwater facilities).				
	STS.HS.5.4.i Demonstrate proper use of equipment not specifically mentioned.	STS.HS.5.4.i Demonstrate proper use of equipment not specifically mentioned.			STS.HS.1.10 Apply conventional General Drafting Standards used in architectural drafting situations.				
	STS.M.HS.5.4.j Identify the parts of a board.				STS.HS.1.10.a Identify terms and definitions commonly used in the architectural profession including detail drawings, working drawings and drafting.				
	STS.M.HS.5.4.k Differentiate between cuts on a board.				STS.HS.1.10.c Describe the orthographic elevation projection.				

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Contextual Academics	STS.M.HS.5.4.l Demonstrate basic joinery and fasteners.				STS.HS.1.10.d Create different views such as floor plans, elevations, sections, site, and perspectives.				
					STS.HS.1.10.e Apply dimensional information and general notes in architectural views and plans.				
					STS.HS.1.10.f Apply schedules such as doors, windows and rooms in architectural views and plans.				
					STS.HS.1.10.g Describe the components that comprise architectural construction drawings.				
					STS.HS.1.10.h Indicate plan review requirements needed to obtain a building permit.				
					STS.HS.1.11 Communicate design solutions.				
					STS.HS.1.11.a Prepare design ideas using architectural terminology for a presentation.				

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Contextual Academics					STS.HS.1.11.b Deliver an oral presentation with accompanying visuals featuring both physical and digital work.				
					STS.HS.1.11.c Develop and maintain an architectural portfolio that includes physical and digital works.				
					STS.HS.1.11.d Create shaded and rendered presentation drawings.				
					STS.HS.3.6 Employ various measures of energy.				
					STS.HS.3.6.b Calculate equations using thermal energy formulas.				
					STS.HS.3.6.c Utilize energy related measurement tools in appropriate scenarios.				

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Contextual Academics					STS.HS.3.6.d Demonstrate mathematics and measurement proficiency.				
					STS.HS.3.6.e Analyze a building as a system.				
					STS.HS.3.6.f Design an energy audit				
Employment Skills	STS.HS.2.2 Investigate career opportunities in the construction industry.		STS.HS.4.2 Investigate careers in the engineering field to gain knowledge for informed career decisions.			STS.HS.5.2 Investigate career opportunities in the manufacturing industry.			STS.HS.4.2 Investigate careers in the engineering field to gain knowledge for informed career decisions.
	STS.HS.2.2.a Identify the responsibilities and characteristics of professionals in the construction industry.	STS.HS.2.2.a Identify the responsibilities and characteristics of professionals in the construction industry.	STS.HS.4.2.a Identify opportunities and employment trends in various engineering sectors.	STS.HS.4.2.a Identify opportunities and employment trends in various engineering sectors.	STS.HS.4.2.a Identify opportunities and employment trends in various engineering sectors.	STS.HS.5.2.a Identify the responsibilities and characteristics of professionals in the manufacturing industry.	STS.HS.5.2.a Identify the responsibilities and characteristics of professionals in the manufacturing industry.	STS.HS.5.2.a Identify the responsibilities and characteristics of professionals in the manufacturing industry.	STS.HS.4.2.a Identify opportunities and employment trends in various engineering sectors.
	STS.HS.2.2.b Identify employment trends in various construction sectors (residential, commercial, industrial, energy, green technologies, etc.).	STS.HS.2.2.b Identify employment trends in various construction sectors (residential, commercial, industrial, energy, green technologies, etc.).	STS.HS.4.2.b Identify training, education, certification and licensing requirements for occupational choice.	STS.HS.4.2.b Identify training, education, certification and licensing requirements for occupational choice.	STS.HS.4.2.b Identify training, education, certification and licensing requirements for occupational choice.	STS.HS.5.2.b Identify employment trends in manufacturing.	STS.HS.5.2.b Identify employment trends in manufacturing.	STS.HS.5.2.b Identify employment trends in manufacturing.	STS.HS.4.2.b Identify training, education, certification and licensing requirements for occupational choice.

	Advanced Carpentry	Construction & Management	Robotics B	Engineering & Design B	Civil Engineering & Architecture B	Welding II	Computer Integrated Machining	Advanced Precision Machining	STEM Design & Development
Employment Skills	STS.HS.2.2.c Describe work behaviors needed to be employable.	STS.HS.2.2.c Describe work behaviors needed to be employable.	STS.M.HS.4.2.c Describe work behaviors needed to be employable.	STS.M.HS.4.2.c Describe work behaviors needed to be employable.	STS.M.HS.4.2.c Describe work behaviors needed to be employable.	STS.HS.5.2.c Describe work behaviors needed to be employable.	STS.HS.5.2.c Describe work behaviors needed to be employable.	STS.HS.5.2.c Describe work behaviors needed to be employable.	STS.M.HS.4.2.c Describe work behaviors needed to be employable.
	STS.HS.2.2.d Identify the training, education, certification and licensing requirements for various careers in the construction industry.	STS.HS.2.2.d Identify the training, education, certification and licensing requirements for various careers in the construction industry.	STS.M.HS.4.2.d Understand the educational, professional, and technical skills required for professional engineering practice.	STS.M.HS.4.2.d Understand the educational, professional, and technical skills required for professional engineering practice.	STS.M.HS.4.2.d Understand the educational, professional, and technical skills required for professional engineering practice.	STS.HS.5.2.d Identify the training, education, certification and licensing requirements for various careers in the manufacturing industry.	STS.HS.5.2.d Identify the training, education, certification and licensing requirements for various careers in the manufacturing industry.	STS.HS.5.2.d Identify the training, education, certification and licensing requirements for various careers in the manufacturing industry.	
	STS.HS.5.2 Investigate career opportunities in the manufacturing industry.	STS.HS.2.7 Investigate career opportunities in the electrical industry.		STS.M.HS.4.2.e Describe the role of engineers in society.	STS.M.HS.4.2.e Describe the role of engineers in society.	STS.HS.6.2 Investigate career opportunities in the welding industry.	STS.HS.5.2.e Identify the various careers, primary duties and attributes of a draftsman or design engineer.	STS.HS.5.2.e Identify the various careers, primary duties and attributes of a draftsman or design engineer.	
	STS.HS.5.2.a Identify the responsibilities and characteristics of professionals in the manufacturing industry.	STS.HS.2.7.a Identify the responsibilities and characteristics of professionals in the electrical industry.	STS.M.HS.4.2.f Identify opportunities and employment trends in various robotic careers.			STS.HS.6.2.a Identify the responsibilities and characteristics of professionals in the welding industry.			
	STS.HS.5.2.b Identify employment trends in manufacturing.	STS.HS.2.7.b Identify employment trends in electrical industry.				STS.HS.6.2.b Identify employment trends in welding.			
	STS.HS.5.2.c Describe work behaviors needed to be employable.	STS.HS.2.7.c Describe work behaviors needed to be employable.							
		STS.HS.2.7.d Identify the training, education, certification and licensing requirements for careers in the electrical industry.							

	Advanced Carpentry	Construction & Management	Robotics B	Engineering & Design B	Civil Engineering & Architecture B	Welding II	Computer Integrated Machining	Advanced Precision Machining	STEM Design & Development
Technical Skills	STS.HS.2.3 Demonstrate use of construction communications.	STS.HS.1.5 Identify site characteristics and how they affect building design and land development.	STS.HS.9.1 Applies appropriate academic and technical skills.		STS.HS.1.12 Demonstrate the utilization of technology.	STS.HS.5.4, STS.HS.6.4 Identify the materials, tools and equipment needed to manufacture a product.			STS.HS.9.1 Applies appropriate academic and technical skills.
	STS.HS.2.3.a Accurately interpret construction terminology, plans, drawings and schedules.	STS.HS.1.5.a Identify the impact of site development (I.e. storm water runoff, pedestrian and vehicular access).	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.	STS.HS.1.12.a Use the appropriate technology tools for conveying information, solving problems and expediting workplace processes.	STS.HS.6.4.a Determine types of materials, fasteners, adhesives and finishes needed to produce a specific product.	STS.HS.5.4.a Determine types of materials, fasteners, adhesives and finishes needed to produce a specific product.	STS.HS.5.4.a Determine types of materials, fasteners, adhesives and finishes needed to produce a specific product.	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.
	STS.HS.5.3 Demonstrate use of manufacturing communications.	STS.HS.1.5.c Identify specifications and codes for a site design process.	STS.HS.9.1.b Communicates effectively and appropriately.	STS.HS.9.1.b Communicates effectively and appropriately.	STS.HS.1.12.b Utilize basic computer and information technology skills	STS.HS.6.4.b Determine the correct tools and equipment needed to produce a specific product.	STS.HS.5.4.b Determine the correct tools and equipment needed to produce a specific product.	STS.HS.5.4.b Determine the correct tools and equipment needed to produce a specific product.	STS.HS.9.1.b Communicates effectively and appropriately.
	STS.HS.5.3.a Interpret manufacturing terminology, plans, sketches, drawings and schedules.	STS.HS.1.7 Identify residential and commercial building systems.	STS.HS.9.2 Produce a product.		STS.HS.1.13 Utilize mathematical skills needed in architectural design.		STS.HS.5.4.c Demonstrate proper use of the drill press.	STS.HS.5.4.c Demonstrate proper use of the drill press.	STS.HS.9.2 Produce a product.
	STS.HS.5.3.b Develop a flowchart of a project schedule.	STS.HS.1.7.c Identify code requirements and constraints as they pertain to the installation of services and utilities.	STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.1.13.a Apply basic arithmetic	STS.HS.5.4.d Demonstrate the proper utilization of the engine lathe.	STS.HS.5.4.d Demonstrate the proper utilization of the engine lathe.	STS.HS.5.4.d Demonstrate the proper utilization of the engine lathe.	STS.HS.9.2.a Demonstrate the ability to produce a product.

	Advanced Carpentry	Construction & Management	Robotics B	Engineering & Design B	Civil Engineering & Architecture B	Welding II	Computer Integrated Machining	Advanced Precision Machining	STEM Design & Development
Technical Skills	STS.HS.5.3.c Develop a schedule of materials in proper sequence.	STS.HS.1.7.e Identify system designs to incorporate energy conservation techniques.			STS.HS.1.13.b Apply basic Algebraic skills to solve problems involving area, volume and angles.		STS.HS.5.4.e Demonstrate proper utilization of the vertical milling machine and/or router	STS.HS.5.4.e Demonstrate proper utilization of the vertical milling machine and/or router	
		STS.HS.2.3 Demonstrate use of construction communications.			STS.HS.9.1 Applies appropriate academic and technical skills.		STS.HS.5.4.f Properly use a surface grinder.	STS.HS.5.4.f Properly use a surface grinder.	
		STS.HS.2.3.a Accurately interpret construction terminology, plans, drawings and schedules.			STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.			STS.HS.5.4.g Demonstrate the proper use of a table saw.	
		STS.M.HS.2.3.d Retrieve prices from vendors.			STS.HS.9.1.b Communicates effectively and appropriately.		STS.HS.5.4.h Operate the CNC Mill, Router, and/or Lathe.		
		STS.M.HS.2.3.e Write a proposal to a client with a business name, expected income, expenses, logo, etc.			STS.HS.9.2 Produce a product.	STS.HS.5.4.i Demonstrate proper use of equipment not specifically mentioned.	STS.HS.5.4.i Demonstrate proper use of equipment not specifically mentioned.	STS.HS.5.4.i Demonstrate proper use of equipment not specifically mentioned.	
		STS.M.HS.2.3.f Write a bid.			STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.5.5 Manufacture a product using manufacturing technology.			
		STS.HS.5.3 Demonstrate use of manufacturing communications.					STS.HS.5.5.a Correctly use math functions and formulas to complete job/workplace tasks.	STS.HS.5.5.a Correctly use math functions and formulas to complete job/workplace tasks.	

	Advanced Carpentry	Construction & Management	Robotics B	Engineering & Design B	Civil Engineering & Architecture B	Welding II	Computer Integrated Machining	Advanced Precision Machining	STEM Design & Development
Technical Skills		STS.M.HS.5.3.d Create a scale model demonstrating structural members and framing.				STS.HS.5.5.b Correctly and accurately use tools and equipment to perform manufacturing operations according to drawings and specifications.	STS.HS.5.5.b Correctly and accurately use tools and equipment to perform manufacturing operations according to drawings and specifications.	STS.HS.5.5.b Correctly and accurately use tools and equipment to perform manufacturing operations according to drawings and specifications.	
	STS.HS.5.5 Manufacture a product using manufacturing technology.					STS.HS.5.5.c Demonstrate proper and accurate measurement.	STS.HS.5.5.c Demonstrate proper and accurate measurement.	STS.HS.5.5.c Demonstrate proper and accurate measurement.	
	STS.HS.5.5.a Correctly use math functions and formulas to complete job/workplace tasks.	STS.HS.5.5.a Correctly use math functions and formulas to complete job/workplace tasks.				STS.HS.6.5 Produce a product using welding technology.			
	STS.HS.5.5.c Demonstrate proper and accurate measurement	STS.HS.5.5.c Demonstrate proper and accurate measurement				STS.HS.6.5.b Correctly and accurately use tools and equipment to perform welding operations according to drawings and specifications.			
		STS.M.HS.5.5.e Manufacture a physical structure (ex. playhouse, shed).				STS.HS.6.5.c Perform metal cutting operations using various methods (i.e. oxy-acetylene, mechanized oxy fuel gas, plasma arc and manual air carbon arc).			

	Advanced Carpentry	Construction & Management	Robotics B	Engineering & Design B	Civil Engineering & Architecture B	Welding II	Computer Integrated Machining	Advanced Precision Machining	STEM Design & Development
Technical Skills	STS.HS.9.1 Applies appropriate academic and technical skills.					STS.HS.6.5.d Weld using various methods of welding (i.e. gas metal arc welding, GMAW-S, GMAW spray transfer, flux core arc welding, gas tungsten arc welding, shielded metal arc welding, oxy-acetylene) and using various positions (i.e. flat, horizontal, vertical up, vertical down, and overhead).			
	STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.					STS.HS.9.1 Applies appropriate academic and technical skills.			
	STS.HS.9.1.b Communicates effectively and appropriately.					STS.HS.9.1.a Accurately use math functions and formulas to complete job/workplace tasks.			
	STS.HS.9.2 Produce a product.					STS.HS.9.1.b Communicates effectively and appropriately.			
	STS.HS.9.2.a Demonstrate the ability to produce a product.	STS.HS.9.2.a Demonstrate the ability to produce a product.				STS.HS.9.2 Produce a product.			
						STS.HS.9.2.a Demonstrate the ability to produce a product.			
Primary Instructional Resource	Exploring Woodworking textbook: Goodheart - Wilcox	MPS created and OER Resources	MPS created and OER Resources	MPS created and OER Resources	MPS created and OER Resources	MPS created and OER Resources	MPS created and OER Resources	MPS created and OER Resources	MPS created and OER Resources

Appendix

6-12 Skilled and Technical Sciences Rationale for Identified Pathways

The 6-12 Skilled and Technical Sciences Framework is based on industry standards and aligned with the Nebraska Career Education Model defined by the Nebraska Department of Education. Each pathway contains a sequence of courses which will allow a student to build expertise for success in post-secondary and career opportunities.

- The middle school Skilled and Technical Sciences program is based upon hands-on modules which explore the high school career pathways. A greater emphasis on connecting middle school program with the high school pathways was established by tailoring 8th grade projects to Construction, Engineering, and Manufacturing.
- The high school Skilled and Technical Sciences curriculum is based upon three career pathways: Construction, Engineering, and Manufacturing,.
- The course sequences in all pathways were revised to reflect current industry standards.
- The Engineering pathway has been revised to align to current Nebraska career and workforce needs.

In addition to a realignment of courses, the following parameters were considered:

- Proposed course changes must be accommodated in existing facilities.
- Proposed changes could not require hiring additional staff.
- Proposed changes must maximize course capacity.
- Students are encouraged to complete a single pathway and expand their knowledge through exploration of additional pathways.
- All existing course updates reflect current workforce demands.

Comparison of Previous and Proposed Courses

Previous Course	Proposed Course	IMPACT
Middle School		
Industrial Technology 6	Skilled and Technical Sciences 6	Continue current modular instructional format with updated modules.
Industrial Technology 7	Skilled and Technical Sciences 7	Continue current modular instructional format with updated modules.
Industrial Technology 8	Skilled and Technical Sciences 8	Continue current modular instructional format with updated modules to align to the Construction and Manufacturing Pathways in High School.
	Engineering & Design 8	Modular instructional format with updated modules to align to the Engineering Pathway in High School.
Construction Pathway		
Consumer Maintenance 5 credits	Home Maintenance 5 credits	Use existing instructional space and equipment with minimal update.
Construction & Management 5 credits	Construction Systems 5 credits	Use existing instructional space and equipment with curriculum update. Course separated into two semester courses to allow students to complete a Program of Study in the Construction Pathway.
	Construction Management 5 credits	Use existing instructional space and equipment with curriculum update. Course separated into two semester courses to allow students to complete a Program of Study in the Construction Pathway.

Introduction to Carpentry 5 credits	Introduction to Carpentry 5 credits	Use existing instructional space and equipment with curriculum update.
Carpentry 5 credits	Carpentry 5 credits	Use existing instructional space and equipment with curriculum update.
Advanced Finish Carpentry 5 credits	Advanced Carpentry 5 credits	Use existing instructional space and equipment with curriculum update.
Engineering Pathway		
Introduction to Engineering Design I 5 credits	Introduction to Engineering 5 credits	Use existing instructional space and equipment with curriculum update. The Power and Mechanized Systems Pathway was absorbed into the Engineering Pathway. Course compacted into one semester course to allow students to explore all areas of Engineering and then specialize.
Introduction to Engineering Design II 5 credits		
Introduction to Power, Energy and Mechanized Systems 5 credits		
Mechanical Systems Operations 5 credits	Robotics A 5 credits	The Power and Mechanized Systems Pathway was absorbed into the Engineering Pathway. The content of the course remains robotics and will use existing instructional space and equipment with curriculum update.
Power Systems Design and Fabrication I 5 credits	Robotics B 5 credits	The Power and Mechanized Systems Pathway was absorbed into the Engineering Pathway. The content of the course remains robotics and will use existing instructional space and equipment with curriculum update.
Power Systems Design and Fabrication II 5 credits		

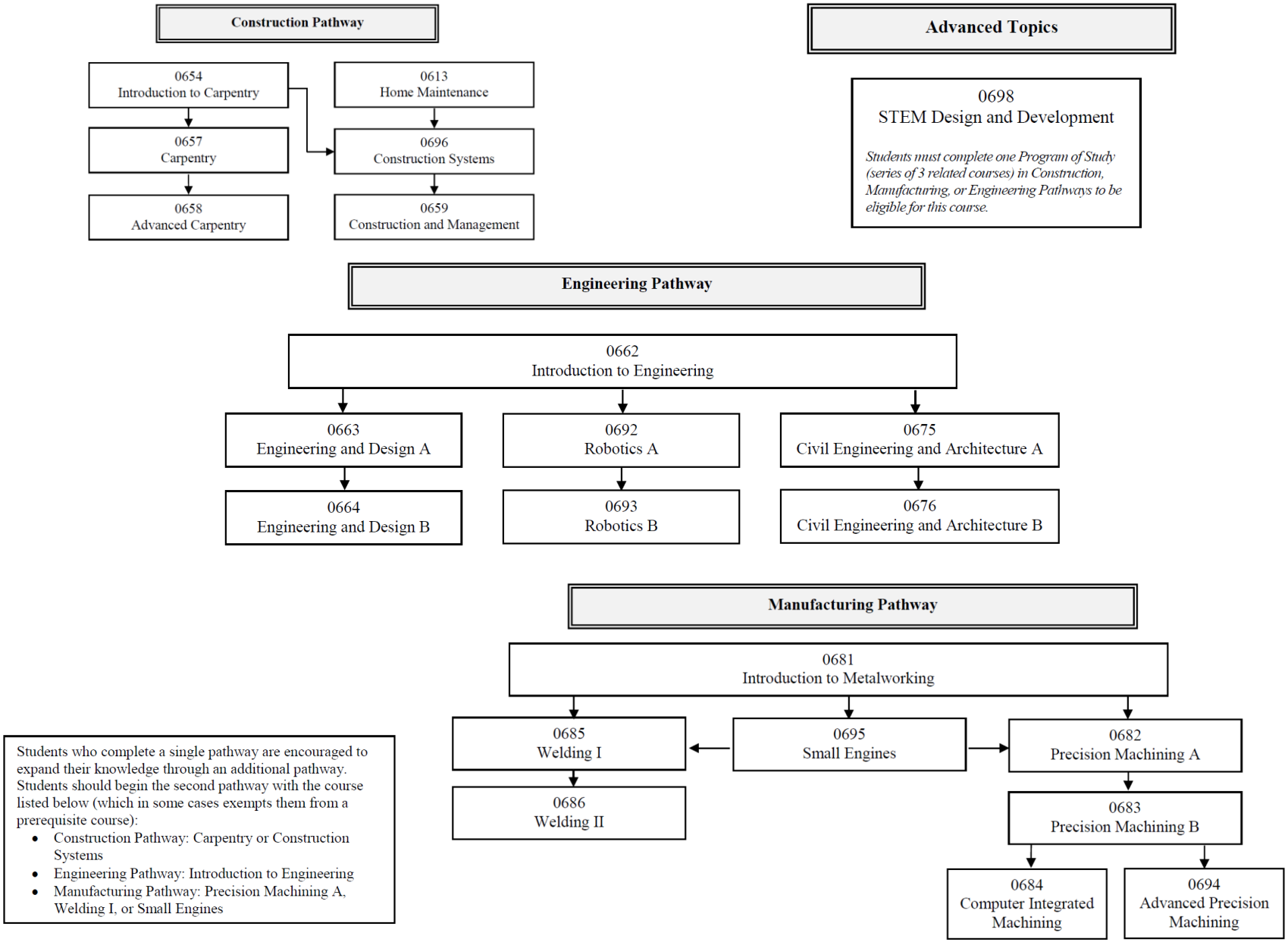
Civil Engineering and Architecture I 5 credits	Civil Engineering and Architecture A 5 credits	Use existing instructional space and equipment with curriculum update.
Civil Engineering and Architecture II 5 credits	Civil Engineering and Architecture B 5 credits	Use existing instructional space and equipment with curriculum update.
Principles of Engineering I 5 credits	Engineering & Design A 5 credits	Use existing instructional space and equipment with curriculum update.
Principles of Engineering II 5 credits	Engineering & Design B 5 credits	Use existing instructional space and equipment with curriculum update.
Digital Electronics I 5 credits	*Discontinue this course.*	Content will be embedded into the Introduction to Engineering, Engineering and Design A/B, and Robotics A/B.
Digital Electronics II 5 credits	*Discontinue this course.*	Content will be embedded into the Introduction to Engineering, Engineering and Design A/B, and Robotics A/B.
Manufacturing Pathway		
Introduction to Metalworking 5 credits	Introduction to Metalworking 5 credits	Use existing instructional space and equipment with curriculum update.
No current equivalent	Small Engines 5 credits	This course was added because of community industry workforce needs and to capitalize on student interest. Use existing instructional space and projects through community industry partners.
Manufacturing Processes 5 credits	Precision Machining A 5 credits	This Program of Study was redesigned to allow for greater depth of study before specializing. Use existing instructional space and equipment with curriculum update.
	Precision Machining B 5 credits	
Automated Manufacturing Technology I 5 credits	Computer Integrated Machining 5 credits	Use existing instructional space and equipment with curriculum update.
Automated Manufacturing Technology II	Advanced Precision Machining	Use existing instructional space and

5 credits	5 credits	equipment with curriculum update.
Advanced Topic Capstone Course		
Engineering Design & Development I 5 credits	STEM Design & Development 10 credits	Students who complete Programs of Study in any STS Pathway can take this course to collaborate with students of different skills to solve problems identified by them. Previously EDD was the capstone course of the Engineering Pathway.
Engineering Design & Development II 5 credits		
No Current Pathway		
Computer-Aided Drafting 5 credits	*Discontinue current course.*	Content will be embedded into the design of all projects in all pathways.

As with all adoptions, staff development will be provided with newly implement course guides, materials, resources, and equipment.

Skilled and Technical Sciences Flowchart

Materials for basic projects will be provided; however, students who select specialized projects may be required to purchase extra materials. Students may donate money, materials, or equipment to defray the cost of consumable materials or provide appropriate personal equipment. Students who qualify for free and reduced meals waivers should discuss cost with their instructors.



New or Revised Course Descriptions

MIDDLE SCHOOL

SKILLED AND TECHNICAL SCIENCES 6

Students will be introduced to several areas of the skilled and technical sciences. Each area is called a Mission. Mission options are listed below. Paired students work for three days on a Mission. Each day students complete a hands on activity. Creative problem solving is taught through Discovery Day activities that occur between Missions.

SKILLED AND TECHNICAL SCIENCES 7

Students will continue to explore the skilled and technical sciences through hands on activities. Safety, tool use, design process, and career exploration will be covered in a variety of construction, manufacturing, and engineering stations. Students will apply academics and employ innovative technical problem solving skills.

SKILLED AND TECHNICAL SCIENCES 8

Students will continue to explore the skilled and technical sciences through hands on activities. Safety, tool use, design process, and career exploration will be covered in a variety of construction, manufacturing, and engineering stations. Students will apply academics and innovative technical problem solving skills. Stations will prepare students for high school STS courses.

ENGINEERING & DESIGN 8

Students will explore concepts in engineering and design using computer drafting software. Concepts learned in this class will allow students to complete a solution based design project for presentation. Projects will include manufacturing processes exploring information and skills necessary for high school STS engineering courses and career opportunities.

CONSTRUCTION PATHWAY

INTRODUCTION TO CARPENTRY 5 credits

Description: Introduction to Carpentry provides instruction in the use and safe handling of hand tools, portable power, and stationary power tools. Fundamental principles of project planning, design, fabrication, and career exploration are completed through multiple hands-on projects.

Prerequisites: None

CARPENTRY 5 credits

Description: Carpentry provides students with the skills and knowledge needed to correctly perform construction/woodworking operations using hand tools, power tools, stationary power tools. Instruction emphasizes safe, proper operation and care of equipment, selection of construction materials, understanding processes, and the importance of design. Students will design, build, and finish multiple hands-on projects.

Prerequisites: Introduction to Carpentry

ADVANCED CARPENTRY 5 credits

Description: Advanced Carpentry provides students with advanced skills and knowledge needed to perform upper level construction/woodworking operations using woodworking tools and machines. Students will obtain job-related, entry-level skills in cabinet/furniture design, material selection, project estimating, and construction. Independent student projects within this class are based on student interests and abilities.

Prerequisites: Carpentry

HOME MAINTENANCE 5 credits

Description: Home Maintenance is an exploratory level course for all future homeowners. This course will introduce the learner to knowledge and skills in the areas of masonry, carpentry, plumbing, electricity, insulation, drywall, interior wall finish, exterior wall finish and repair, and basic auto maintenance. The students will also explore career opportunities in these areas.

Prerequisites: None

CONSTRUCTION SYSTEMS 5 credits

Description: Construction Systems introduces students to house construction framing basics, fasteners, materials, and print reading through hands-on project based activities. Included in the class will be hands-on experiences in material selection, framing of exterior/interior walls, door/window openings, and other common residential construction components.

Prerequisites: Home Maintenance or Introduction to Carpentry

CONSTRUCTION & MANAGEMENT 5 credits

Description: Construction and Management provides students with a hands-on career exploratory experience in the construction industry. Students will study surveying and site preparation, residential construction styles, foundations, framing, roofing, siding, and applying construction management skills such as estimating and project planning to build a physical structure. Emphasis will be placed on basic entry-level skills, demonstration of employability skills, and development of an awareness of the opportunities in the building trades.

Prerequisites: Construction Systems

ENGINEERING PATHWAY

INTRODUCTION TO ENGINEERING 5 credits

Description: Introduction to Engineering encourages students to use a problem-solving model to explore the principles of Robotics, Engineering, Architecture and Design. Students will use sophisticated three-dimensional modeling software to communicate the details of these products. Students will use this course to help decide which Engineering Paths they would like to explore further.

Prerequisites: None

ROBOTICS A 5 credits

Description: In Robotics A students work with mechanical systems such as gear systems, mechanical advantage, motion, as well as programming. This hands on course will have students problem solve and creatively think about Robotic Engineering tasks and challenges.

Prerequisites: Introduction to Engineering

ROBOTICS B 5 credits

Description: Robotics B expands on the concepts of Robotics A. Students will have to work with others as they are tasked with completing a challenge. These larger projects will require more advanced mechanism and programming skills to be able to successfully complete the required task. This course can be taken multiple times for credit.

Prerequisites: Robotics A

CIVIL ENGINEERING & ARCHITECTURE A 5 credits

Description: Have you ever looked at a building, bridge or structure and wondered how they were built, thought about the amazing ability of humans to design and build structures that are as much art as they are function? Then you might be interested in Civil Engineering and Architecture (CEA). In this course we will learn about the history of CEA and how generations of the past have solved engineering problems. Learn a design software program to help your ideas become a reality, and apply engineering principles to real world problems.

Prerequisites: Introduction to Engineering

CIVIL ENGINEERING & ARCHITECTURE B 5 credits

Description: Buildings and structures in our world can inspire and amaze us, but they also need to function well for their intended inhabitants and visitors. In CEA-B we will investigate Design and Architecture techniques involved in Commercial Construction. We will advance our CAD skills developing a deeper understanding of Building Information Management (BIM), and we will learn how Engineers and Architects work together to create structures for the future.

Prerequisites: Civil Engineering & Architecture A

ENGINEERING PATHWAY (continued)

ENGINEERING & DESIGN A 5 credits

Description: How was your phone designed, why was it designed in that way? Have you ever taken something apart just to see how it works; or to improve it? In Engineering & Design, we will continue to improve our design skills and begin taking the next step from design to creation using 3D printers and laser technology.

Prerequisites: Introduction to Engineering

ENGINEERING & DESIGN B 5 credits

Description: Ever flown a drone or rode a bike and thought that you could improve it somehow, make it better than others? In Engineering Design B students will continue learning about product design while developing the knowledge of tools and machines used in the creation of products. Students will learn about Electronics and Coding to create control devices, and the use of Computer Integrated Machining (CIM) to create precision parts for their products.

Prerequisites: Engineering & Design A

MANUFACTURING PATHWAY

INTRODUCTION TO METALWORKING 5 credits

Description: This course provides the skills and technical knowledge for a beginning student in areas of industry, safety, material, equipment and process understanding.

Prerequisites: None

SMALL ENGINES 5 credits

Description: This course will provide students with basic knowledge and skills of the tools and systems needed to maintain small engines.

Prerequisites: Introduction to Metalworking

WELDING I 5 credits

Description: This course introduces students to arc welding and cutting processes.

Prerequisites: Introduction to Metalworking

WELDING II 5 credits

Description: This course is a continuation of learning the knowledge and skills of the welding industry.

Prerequisites: Welding I

PRECISION MACHINING A 5 credits

Description: Students will be introduced to the basic modern manufacturing process of metals.

Prerequisites: Introduction to Metalworking

PRECISION MACHINING B 5 credits

Description: Students will be introduced to modern manufacturing automated processes using computer numerical controlled tools and equipment (CNC).

Prerequisites: Precision Machining A

COMPUTER INTEGRATED MACHINING 5 credits

Description: Students will use advanced computer numerical controlled tools and equipment (CNC) to produce parts and projects to industry standards and specifications.

Prerequisites: Precision Machining B

ADVANCED PRECISION MACHINING 5 credits

Description: Students will utilize tools and equipment to produce parts and projects within specifications using metal.

Prerequisites: Precision Machining B

ADVANCED TOPICS

STEM DESIGN & DEVELOPMENT 10 credits

Description: STEM Design & Development is a collaborative course where students from diverse educational experiences come together as a team to define and solve real world problems through the use of Science, Technological skills and Engineering application.

Prerequisites: Students must complete one Program of Study (series of 3 related courses) in Construction, Manufacturing, or Engineering Pathways to be eligible for this course.

CAREER AND TECHNICAL EDUCATION INTERNSHIP 5 credits

Description: At this "capstone" level, students will demonstrate the specific technical and career readiness skills they have gained through their previous Career and Technical Education preparation coursework. This workplace experience is a proactive approach to bridge education and workplace performances. Work-Based Learning Experiences provide supervised on-the-job opportunities for students to continue to develop and demonstrate their academic, technical, and career readiness skills.

Students are required to:

- Participate in a paid internship learning experience.
- Work part-time, 180 hours minimum (approx. 10 hours/week).
- Complete Work-Based Learning Experience documents.
- Participate in Safety and Equipment Training where required.

Prerequisites: Concurrent classroom instruction in a career and technical education course that aligns with internship focus

AGENDA ITEM:	Administrator Recommended for Hire
MEETING DATE:	May 4, 2020
DEPARTMENT:	Human Resources
TITLE & DESCRIPTION:	Assistant Principal at Russell Middle School
ACTION DESIRED:	Approval
BACKGROUND:	The position was advertised on Millard's job posting website, Career Link (Regionally and Nationally) and the NCSA website. Eighteen internal and fourteen external applications were received. The applications were reviewed by Dr. Kevin Chick and Dr. Jim Sutfin. Three internal and one external candidate were interviewed for the position. The interview team included Dr. Kevin Chick, Dr. Beth Fink, Mitch Mollring, Dr. Kim Saum-Mills, Dr. Tony Weers, Dr. Ted Esser, Bill Jelkin, Brett Metzger, Jeanine Beaudin, Missy Betts, Brent Snow, Beth Hemphill, Beth Reinsch, Connie Novacek and Stacy Kester-Pearson.
RECOMMENDATION:	The Superintendent's recommendation is approval of Katharine L. Hadan for Assistant Principal at Russell Middle School. Previous experience includes; IB-MYP Programme Coordinator and High Ability Learner Facilitator (2017-Present) and History Teacher (2014-2017) at Millard North Middle School; Social Studies Teacher for JFK American School of Queretaro, Mexico (2013-2014)
EDUCATION:	BA – University of Nebraska, Lincoln – Education (2013) MA– Wayne State University – Education (2018)
OPTIONS & ALTERNATIVES:	N/A
RECOMMENDATION:	Approval
PERSON RECOMMENDING:	Dr. Kevin Chick, Associate Superintendent of Human Resources
SUPERINTENDENT APPROVAL:	

AGENDA SUMMARY SHEET

Agenda Item: **Human Resources**

Meeting Date: **May 4, 2020**

Background:

Description: **Personnel Items: (1) Recommendation to Hire; (2) Resignation Agenda; (3) Contract Addendum**

Action Desired: **Approval**

Policy / Strategic Plan Reference: **N/A**

Responsible Person(s): **Dr. Kevin Chick**
Associate Superintendent of Human Resources

Superintendent's Signature: 

May 4, 2020

TEACHER RECOMMENDED FOR HIRE

Recommend: The following teachers be hired for the 2020-2021 school year:

1. Hannah D. Allfree – BA+12 – Doane State University. Grade 4 teacher at Morton Elementary School for the 2020-2021 school year.
2. Stephanie D. Leonard – MA+9 – University of Nebraska, Omaha. Speech Language Pathologist for the 2020-2021 school year. Previous Experience: Fremont Public Schools (2012-present)
3. Jaci L. Henderson – MA – University of Nebraska, Omaha. Speech Language Pathologist at Russell Middle School for the 2020-2021 school year.
4. Josie L. Babin – MA – University of University of Nebraska, Kearney. Resource teacher at Millard South High School for the 2020-2021 school year. Previous Experience: South Sioux City Public School District (2018-present); Omaha Public School District (2016-2018)
5. Ashley L. Tobey – MA – Nebraska Wesleyan University. Grade 5 teacher at Reagan Elementary School for the 2020-2021 school year. Previous Experience: Waverly Public Schools (2015-present); Lincoln Public Schools (2008-2015)
6. Ashley N. Ericksen – BA – University of Nebraska, Omaha. Special Education teacher at Millard South High School for the 2020-2021 school year.
7. Bridget K. Bliefernich – BA – University of Nebraska, Kearney. Family and Consumer Science teacher at Millard North Middle School for the 2020-2021 school year.
8. Monica M. Fisher – MA – College of St. Mary. Grade 4 teacher at Rohwer Elementary School for the 2020-2021 school year.
9. Riley J. Herringer – BA+12 – Doane University. Vocal Music teacher at Kiewit Middle School for the 2020-2021 school year.
10. Wayne M. Trevett – BA+22 – Wayne State College. Industrial Tech teacher at Millard North High School for the 2020-2021 school year. Previous Experience: Lincoln Public School District (2004-present)
11. Allison W. Harrold – BA+12 – Kansas State University. Grade 3 teacher at Reagan Elementary School for the 2020-2021 school year. Previous Experience: Kansas Public School District (2015-present)
12. Allison T. Reznicek – BA – Grand Canyon University. Special Education teacher at Millard South High School for the 2020-2021 school year.
13. Shelby A. Maschmann – MA – Peru State College. Kindergarten teacher at Ackerman Elementary School for the 2020-2021 school year. Previous Experience: Omaha Public School District (2017-present)
14. Michele C. Humpal – MA+3 – University of Nebraska, Omaha. Speech Language Pathologist at Neihardt Elementary School for the 2020-2021 school year. Previous Experience: Westside Public School District and Select Rehab (2012-present); Millard Public Schools (2007-2012)
15. Ashley L. Meyer – MA+12 – Creighton University. Resource teacher at Disney Elementary School for the 2020-2021 school year. Previous Experience: Omaha Public School District (2012-present)

16. Jamisen L. Goodell – MA+18 – University of Nebraska, Lincoln. Math teacher at Millard South High School for the 2020-2021 school year. Previous Experience: Salt Lake City, Utah (2018-present); Omaha Public School District (2003-2018)
17. Hannah A. Frasier – BA—University of Nebraska, Omaha. French teacher at Millard South High School for the 2020-2021 school year.
18. Megan R. Eckley – BA+36 – University of Nebraska, Omaha. Grade 1 teacher at Hitchcock Elementary School for the 2020-2021 school year. Previous Experience: Omaha Public Schools (2018-2019)
19. Dr. Cameron Pentland – Ed.D – Creighton University. Language Arts teacher at Millard North High School for the 2020-2021 school year. Previous Experience: Omaha Public School District (2006-present)

May 4, 2020

RESIGNATIONS

Recommend: The following resignation(s) be accepted:

1. Jessica M. Martys – Special Education Resource teacher at Norris Elementary School. Resigning at the end of the 2019-2020 school year to take a CADRE teaching position for Millard Public Schools.
2. Katherine M. Pickering – Grade 1 teacher at Willowdale Elementary School. Resigning at the end of the 2019-2020 school year to take a CADRE teaching position for Millard Public Schools.
3. Bonnie Lamay – Special Education teacher at Millard West High School. Retiring at the end of the 2019-2020 school year.
4. Amy M. Hougland – Grade 1 teacher at Wheeler Elementary School. Resigning at the end of the 2019-2020 school year because of family relocation.
5. Jamie M. Schnieber – Grade 4 teacher at Cody Elementary School. Resigning at the end of the 2019-2020 school year to take a teaching position with District 66.
6. Laura M. Innes – Special Education teacher at Upchurch Elementary School. Resigning at the end of the 2019-2020 school year to take a position with Papillion LaVista School District.
7. MacKenzie. C. Lambert – Kindergarten teacher at Morton Elementary School. Resigning at the end of the 2019-2020 school year because of continuing education plans.
8. Kirstin A. Granatowicz – Kindergarten teacher at Bryan Elementary School. Resigning at the end of the 2019-2020 school year because of family relocation.
9. Patrick M. Spieler – Math teacher at Millard South High School. Resigning at the end of the 2019-2020 school year for personal reasons.
10. Anna R. Ahrens – Science teacher at Millard South High School. Resigning at the end of the 2019-2020 school year to take a teaching position with South Sioux City Schools.
11. Jesse L. Flanagan – Grade 5 teacher at Reeder Elementary School. Resigning at the end of the 2019-2020 school year to take a teaching position with Fremont Public School District.
12. Timothy S. Higgins – Math teacher at Millard North High School. Retiring at the end of the 2019-2020 school year.
13. Melanie S. Burke – Science teacher at Millard North High School. Resigning at the end of the 2019-2020 school year for personal reasons.
14. Jason J. Rypkema – Math teacher at Millard North High School. Resigning at the end of the 2019-2020 school year to take a position with Cave Creek Unified School District.
15. Theresa A. Iliff – Special Education teacher at Millard South High School. Retiring at the end of the 2019-2020 school year.

16. Stephanie L. Kopecky – Special Education Resource teacher at Bryan Elementary School. Resigning at the end of the 2019-2020 school year to take a teaching position with Brooke Valley Schools.
17. Dan Innes – School Psychologist for Millard Public Schools. Resigning at the end of the 2019-2020 school year to take a psychologist position with Papillion LaVista Community Schools.
18. Kelli J. Heller – Grade 5 teacher at Ackerman Elementary School. Resigning at the end of the 2019-2020 school year to take a teaching positon with Brooke Valley Schools.
19. Jennifer M. Allgood – Learning Center teacher at Russell Middle School. Resigning at the end of the 2019-2020 school year to take a teaching position with Elkhorn Public School District.
20. Kelly A. Shafer – Science teacher at Millard South High School. Resigning at the end of the 2019-2020 school year for further education opportunities.
21. Heather A. Pohl – Speech Pathologist at Harvey Oaks Elementary School. Resigning at the end of the 2019-2020 school year to take a position at the Nebraska Department of Education.
22. Aimee M. Poljanac – Kindergarten teacher at Abbott Elementary School. Resigning at the end of the 2019-2020 school year because of family relocation.
23. Stephanie D. Heater – Health teacher at Central Middle School. Resigning at the end of the 2019-2020 school year to take a teaching position with the Omaha Public School District.
24. Bailey Morley – Spanish teacher at Millard North Middle School. Resigning at the end the 2019-2020 school year to take a teaching position for Lincoln Public Schools District.

May 4, 2020

AMENDMENT TO CONTINUING CONTRACTS

Recommend: Amendment to the following contract:

1. Sierra Becker – English Language Learner teacher for the Millard Public School District. Amend contract from (.50) FTE to (1.0) FTE for the 2020-2021 school year.

AGENDA SUMMARY SHEET

Agenda Item: Early College High School Program Evaluation

Meeting Date: May 4, 2020

Background/ Description: The Millard Public Schools Early College Program allows students the opportunity to earn an Associate of Arts degree from Metropolitan Community College (MCC) while earning a high school diploma. This degree will transfer to the University of Nebraska-Omaha to fulfill many of the general education requirements for a Bachelor's Degree. Per Policy 10,001.1, we conduct a program evaluation in the fifth year of any new program.

Action Desired: Information Only

Policy / Strategic Plan Reference: Strategic Plan Parameters:
No existing program, course, and/or service will be maintained unless it:
Meets a clearly demonstrated, mission-related need;
Survives a cost-benefit analysis and periodic evaluation.

Responsible Person(s): Dr. Darin Kelberlau, Dr. Heather Phipps, Sharon Freeman, and Eve Norton

Superintendent's Signature:

Summary of Findings

Early College High School Program Performance

- **Grade Point Average (GPA)** - The Completers had a higher cumulative GPA than the other two groups. Females were higher than Males, Whites higher than Non-Whites, and Paid lunches higher than Free/Reduced lunches.
- **ACT** - Similar results as the GPA scores were seen in Degree Completion, Ethnicity and SES. Females and Males had very similar scores.
- **Dual Enrollment Credit** - As one would expect, Completers had much more potential dual enrollment credit than their counterparts. Females had more potential credits earned than Males, Non-Whites more than Whites, and Paid more than Free/Reduced lunches.
- **School Involvement** - (Activities/Athletics Participation) - As reported by Infinite Campus, Close, Male, White, and Paid students had higher participation rates than their respective counterparts. Nearly all subgroups had participation rates higher than 50%.
- **Behavior** - Completers, on average, had far fewer infractions than those who were Close or Non-Completers. Males, Non-White, and Paid lunch groups all had higher average number of behavior infractions than their comparison groups. Behavior events included did not include tardies.
- **Perceptual Results -** A few highlights regarding the makeup of the ECHS students:
    - More than 90% of Completers and Close reported participating in at least one extra-curricular activity.
    - Most of the Completers and Close students worked 11-20 hours per week, while Non-Completers worked 1-10 hours per week.
    - Of those students planning to attend school after graduation, most Completers and Close students plan to attend school in Omaha or elsewhere in Nebraska.
    - Most Completers and Close students reported that they studied on average 6-10 hours per week. Non-Completers studied 1- 5 hours per week.
    - 93% of Completers shared that they took the most challenging courses while in high school, as compared to 56% for the Non-Completers.
    - The Health Information career field was among the top three in interest for all three groups.

Early College High School Program Comparison

- **Grade Point Average (GPA)** - ECHS students had comparable GPAs as Other MPS students. Both of these groups were higher than Other SHS students and Applied, Not Accepted.
- **ACT** - ECHS students had a higher average Composite ACT score than the other groups. Applied, Not Accepted students were comparable to the other Millard South High school student average.
- **Dual Enrollment Credit** - ECHS students had far more potential to earn dual enrollment credit than all other student groups within the school district.
- **School Involvement** - (Activities/Athletics Participation) - As reported by Infinite Campus, the percent of students participating in at least one activity or athletic team was higher for ECHS students than all other groups.
- **Behavior** - ECHS students had fewer behavior events than all other groups. The Applied, Not Accepted and Other SHS groups had a higher occurrence of behavior events than the ECHS and Other MPS groups. These counts did not include tardy infractions.
- **Perceptual Results -** How ECHS students compared to other groups of MPS students:
    - ECHS students had the highest extra curricular activity rate (87%) of any student group.
    - The most common amount of study time per week, 11-20 hours, for ECHS students was very similar to the Other MPS group.
    - If ECHS students were planning to attend school after graduation, the most common location was Omaha (42%).

- 82% of ECHS students felt that they completed the most challenging courses while in high school. This was much higher than the next highest group of Other MPS students at 66%.
- The career field of Health Information was the most frequent Top 3 interest of all four student groups. It was also the only field that was common across groups.

What is the Early College High School Program in Millard Public Schools?

The Millard Public Schools Early College High School Program allows students the opportunity to earn an Associate of Arts degree from Metropolitan Community College (MCC) while earning a high school diploma. This degree will transfer to the University of Nebraska-Omaha to fulfill many of the general education requirements for a Bachelor's Degree.

All Millard Public School 8th grade students may apply for the Early College High School Program (ECHS). Students accepted to participate in the ECHS Program attend Millard South High School. Students who are not currently assigned to attend Millard South High may apply to transfer to the high school. Students outside of Millard may apply to the Early College program and, if accepted, need to apply for open enrollment into the district.

Program Evaluation Guiding Questions:

This program evaluation sets out to answer two main research questions:

1. To what extent do student outcomes vary across demographics of Early College High School (ECHS) students?
2. To what extent do student outcomes of ECHS students compare to other student groups?

The first research question groups the ECHS students into three categories. "Completers" are defined as those students who completed 96 MCC credits. "Close" are those students who completed at least ⅔ of the credits but did not fully complete (less than 96 credits) the program. Any student who completed fewer than 64 credits is grouped in "Non-Completer."

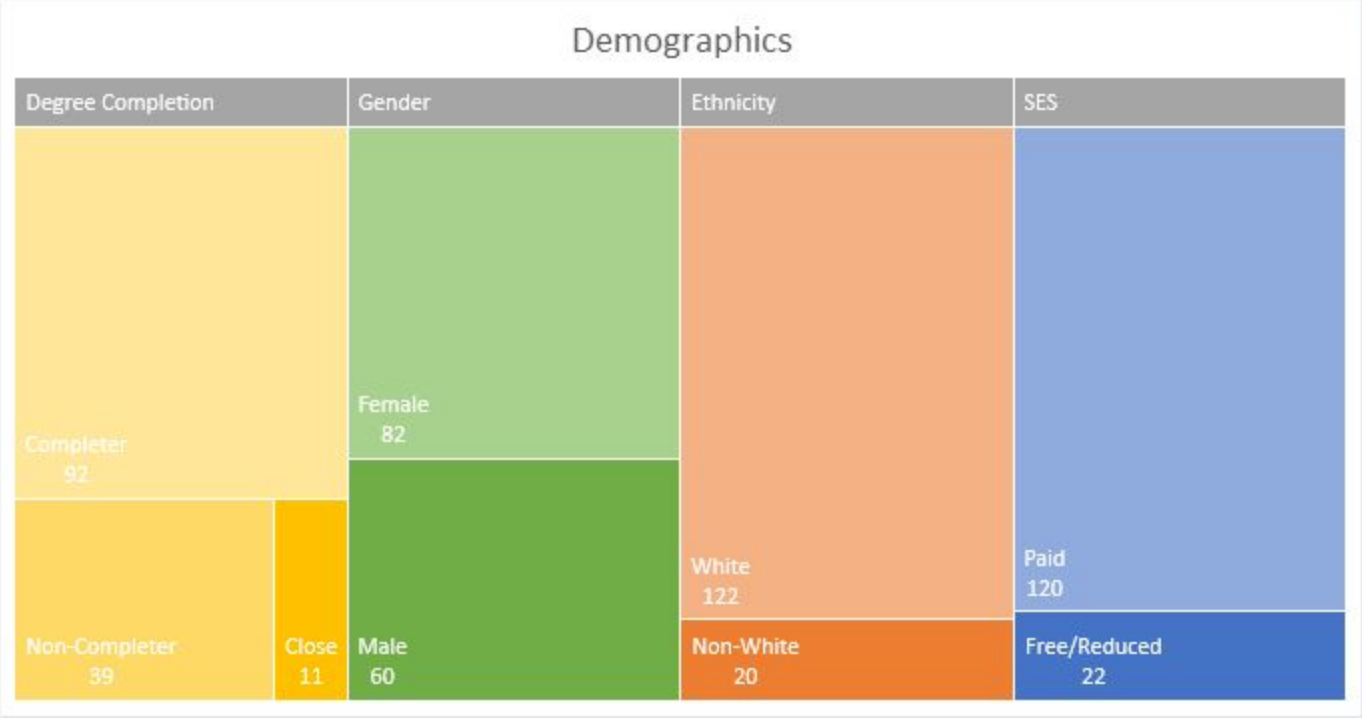
Note: Groups that have less than ten students (English Learners and Special Education) are not included in the group results ("masked").

The students included in this report are those in the Graduating Class of 2019 cohort. Only students who started in the Early College High School program as ninth graders in 2015-2016 and were also Millard students in 2018-2019 are included in the ECHS statistics and comparisons.

Make-up of the Early College High School Students

- "Completer" = completed 96 MCC credits
- "Close" = completed 64 (⅔ of program) or more credits but less than 96
- "Non-Completer" = completed fewer than 64 credits

Demographic		Count	%
Total		142	100%
Completer (96 credits)		92	65%
Close (⅔ or more)		11	8%
Non-Completer		39	27%
Gender	Female	82	58%
	Male	60	42%
Ethnicity	Non-White	20	14%
	White	122	86%
SES	Free/Reduced	22	15%
	Paid	120	85%



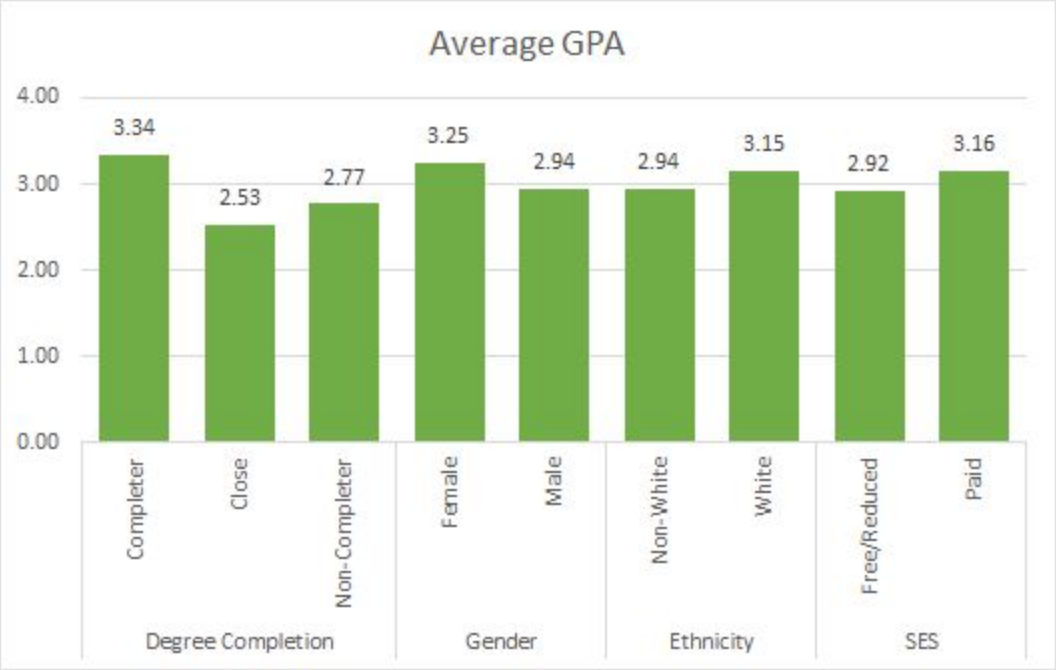
Research Question 1:

To what extent do student outcomes vary across demographics of Early College HIgh School (ECHS) students?

ACADEMIC ACHIEVEMENT

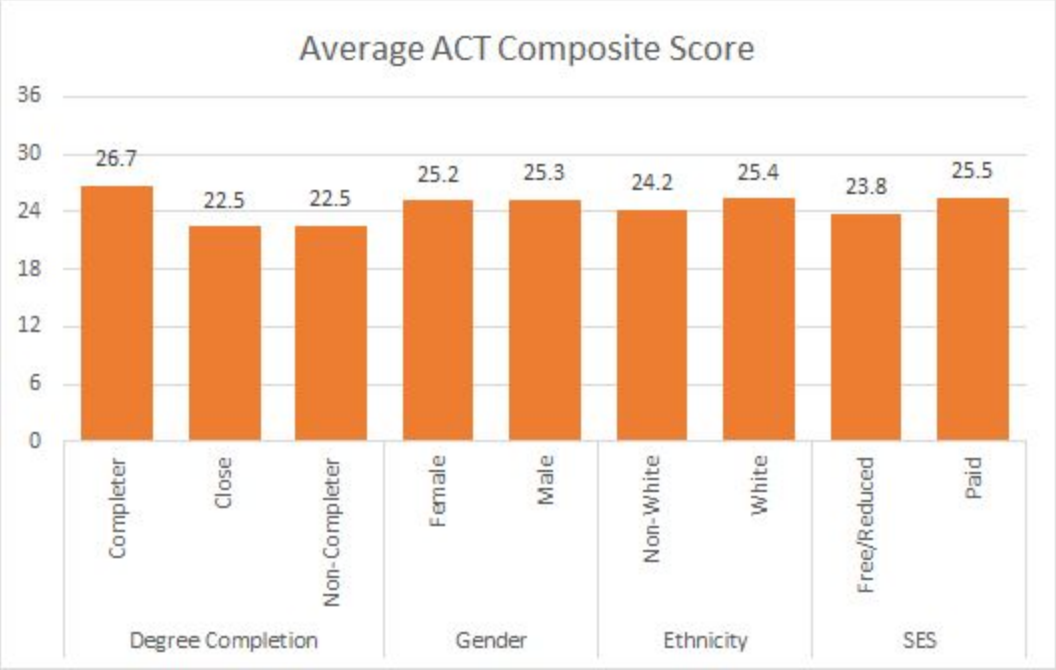
Grade Point Average (GPA)

Average cumulative GPAs for the various demographic groups are graphed below. The Completers had a higher GPA than the other two groups. Females were higher than Males, Whites higher than Non-Whites, and Paid lunches higher than Free/Reduced lunches.



Average ACT Composite Score

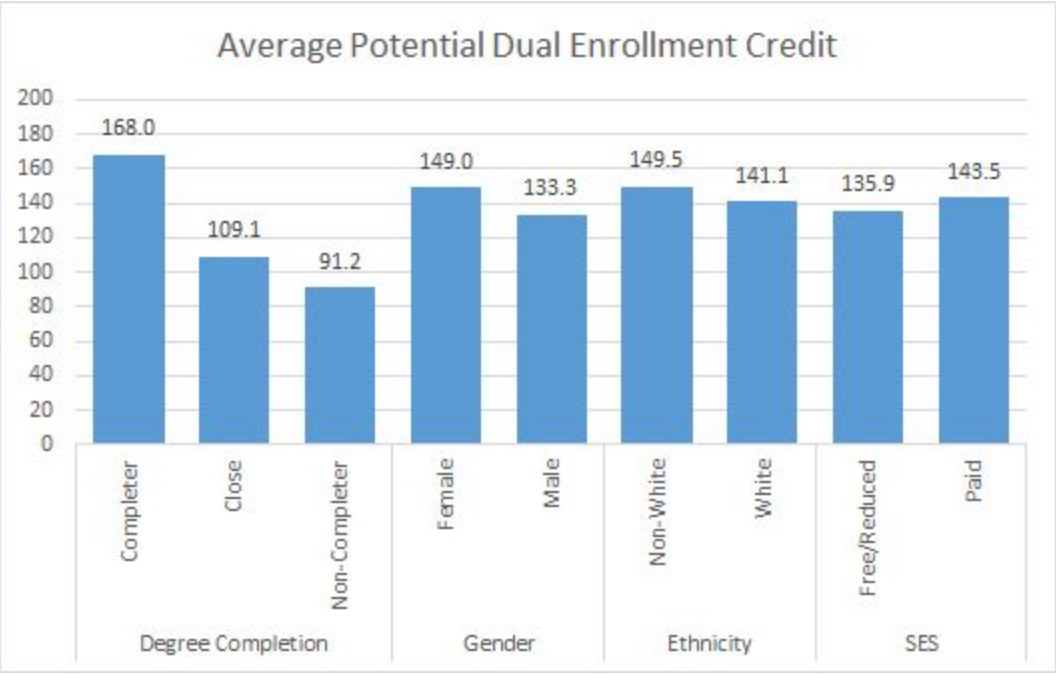
Composite ACT scores by groups are charted below. Similar results as the GPA scores were seen in Degree Completion, Ethnicity and SES. Females and Males had very similar scores. Each student's highest ACT composite score was used for calculations.



Dual Enrollment Credit

As one would expect, Completers had much more potential dual enrollment credit than their counterparts. Females had more potential credits earned than Males, Non-Whites more than Whites, and Paid more than Free/Reduced lunches.

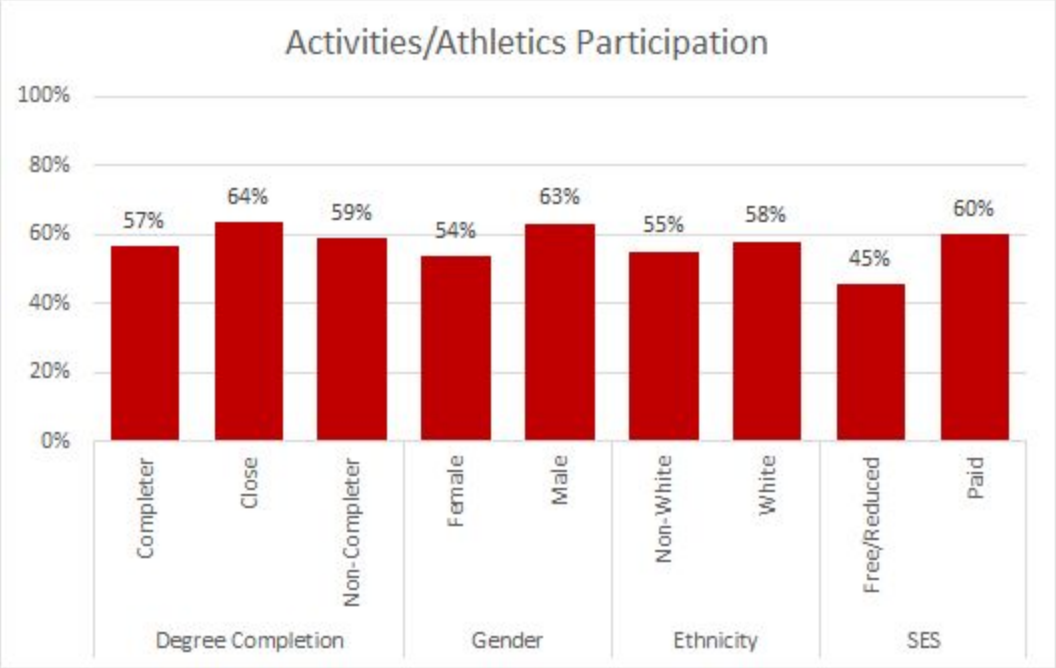
Note: Data used were the number of credits earned in courses that had the potential to be taken for dual credit.



SCHOOL INVOLVEMENT

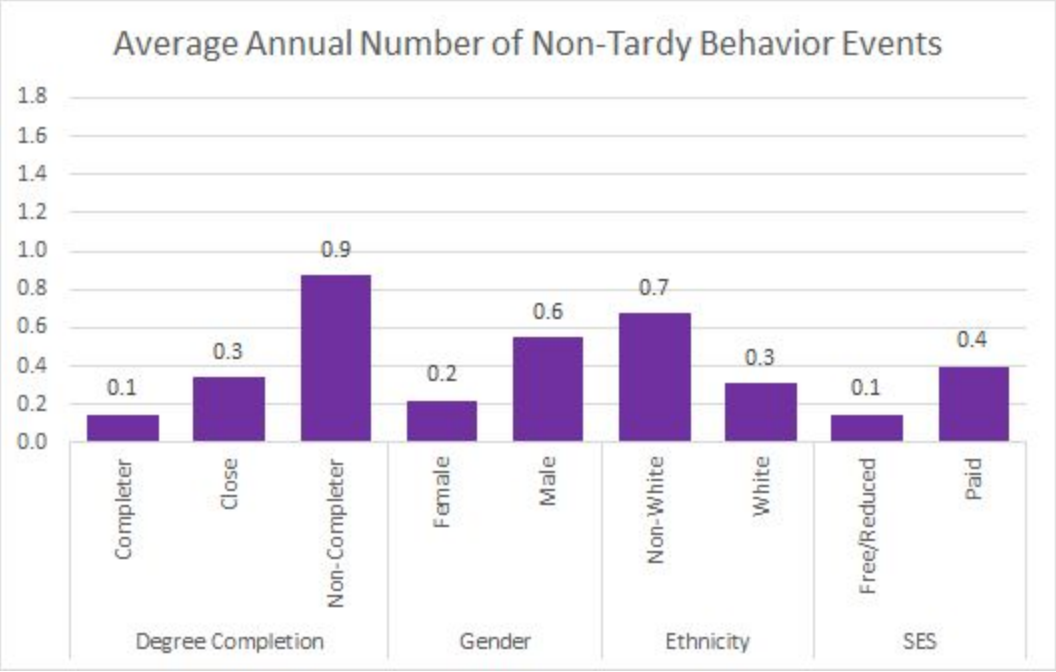
Activities/Athletics Participation

The following graph displays the percent of Early College High School students that participated in at least one activity or athletic team, as recorded in Infinite Campus. Close, Male, White, and Paid students had higher participation rates than their respective counterparts. Nearly all subgroups had participation rates higher than 50%.



BEHAVIOR EVENTS

The mean number of non-tardy behavior events per Early College High School students per year (on average) are represented on the graph below. Only behavior events in which the student was an offender or a participant are included. Completers, on average, had far fewer infractions than those who were Close or Non-Completers. Males, Non-White, and Paid lunch groups all had higher average number of behavior infractions than their comparison groups.

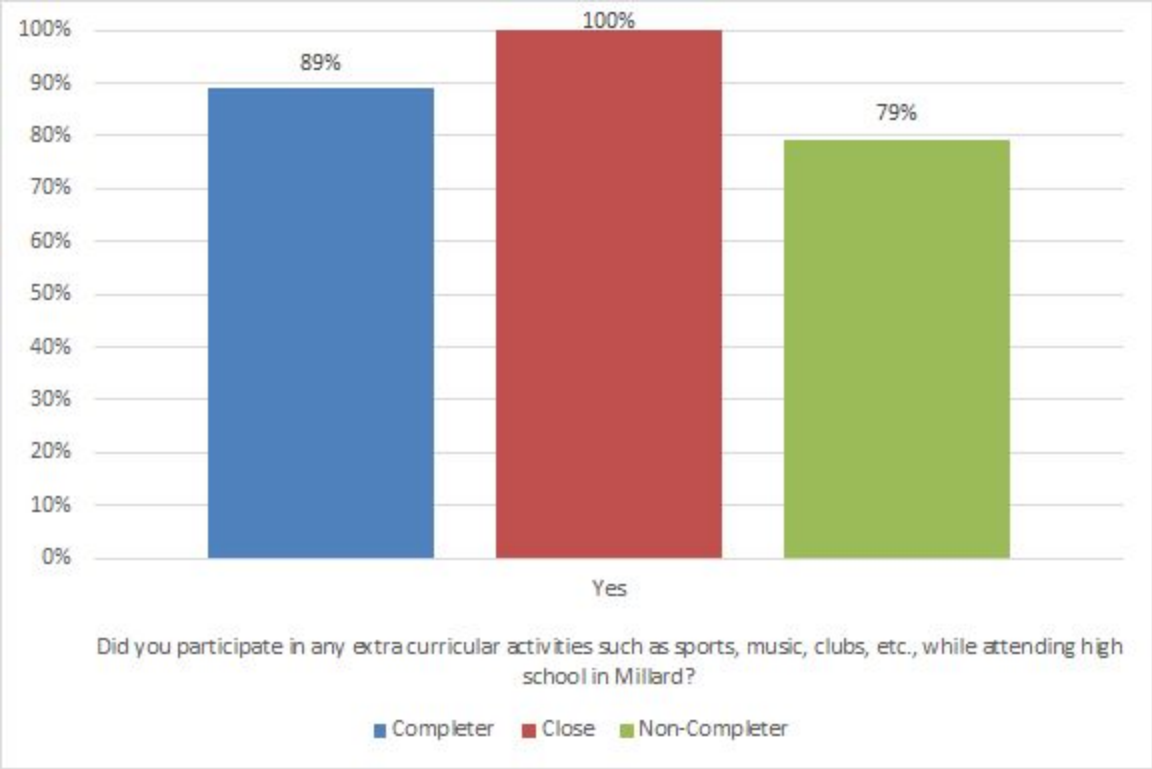


PERCEPTUAL DATA

The following information is from the Senior Exit Survey for the Graduating Class of 2019. 95% (135 of 142) of Early College High School students completed the survey. Percentages are calculated based on the students who did respond to the questions.

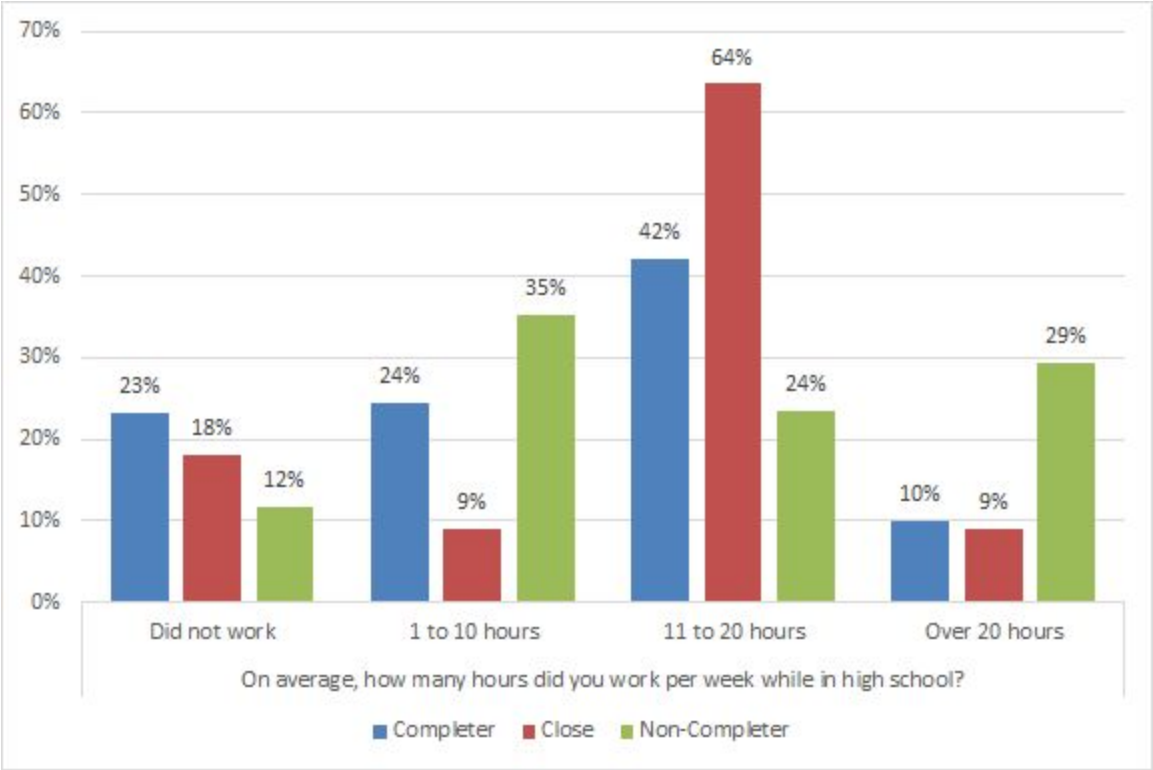
Did you participate in any extra curricular activities such as sports, music, clubs, etc., while attending high school in Millard?

Most ECHS students reported that they participated in activities while in high school in Millard. Non-Completers had the lowest rate of participation.



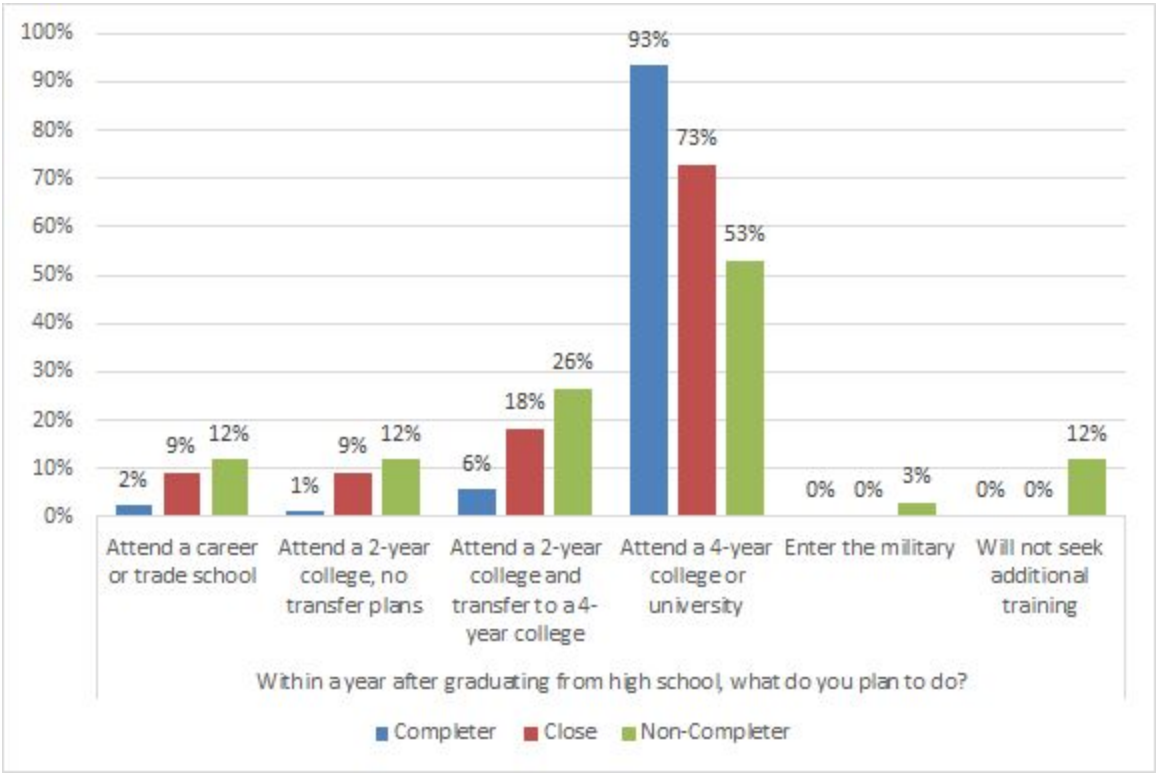
On average, how many hours did you work per week while in high school?

Completer and Close students were more likely to spend an average of 11-20 hours per week working during high school. Non-Completers were more likely than the other two groups to work over 20 hours per week.



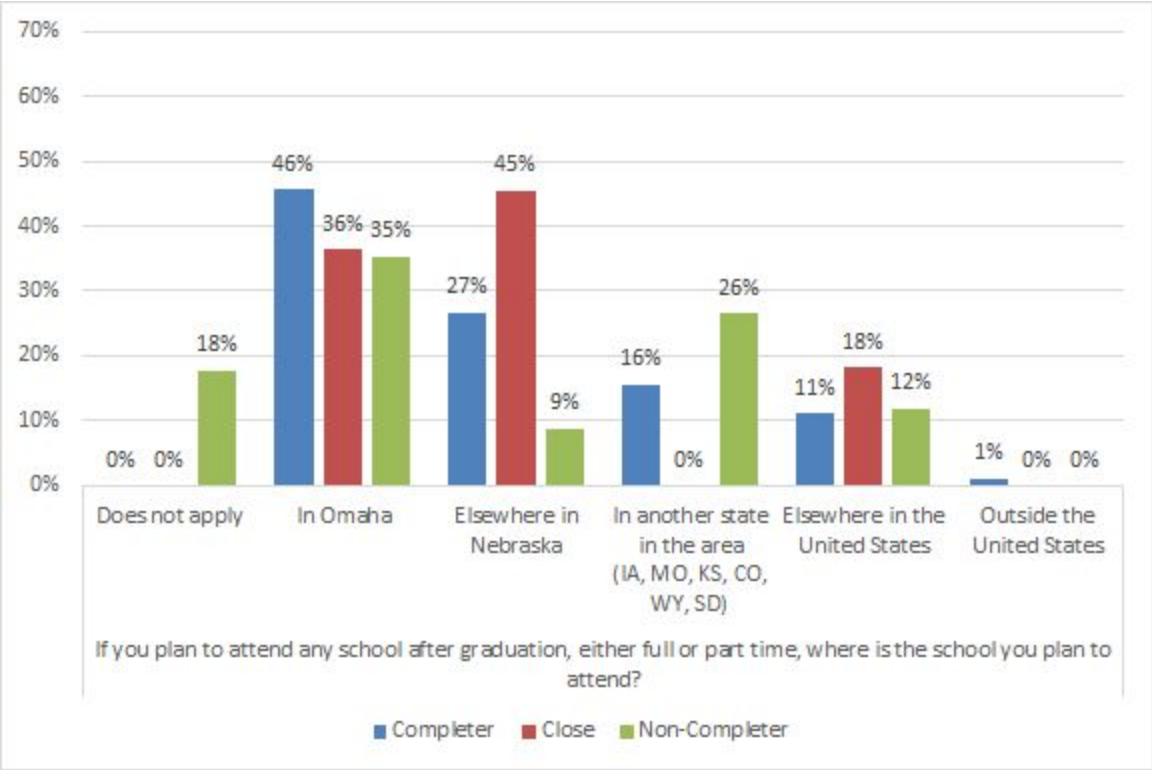
Within a year after graduating from high school, what do you plan to do? (select all that apply)

The majority of students in all three groups plan to attend a 4-year college or university, with the percentage increasing from Non-Completer to Close to Completer.



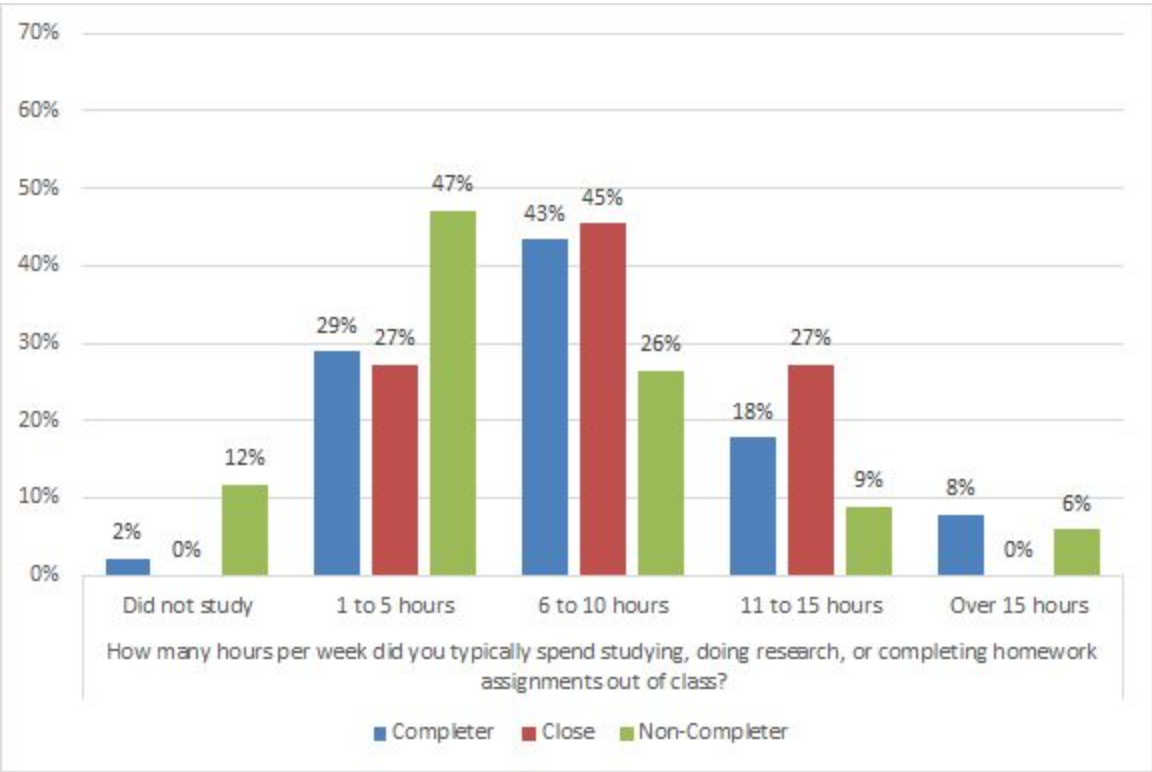
If you plan to attend any school after graduation, either full or part time, where is the school you plan to attend?

A majority of Completer and Close students reported plans to attend an in-state school. Non-Completers gave more varied responses.



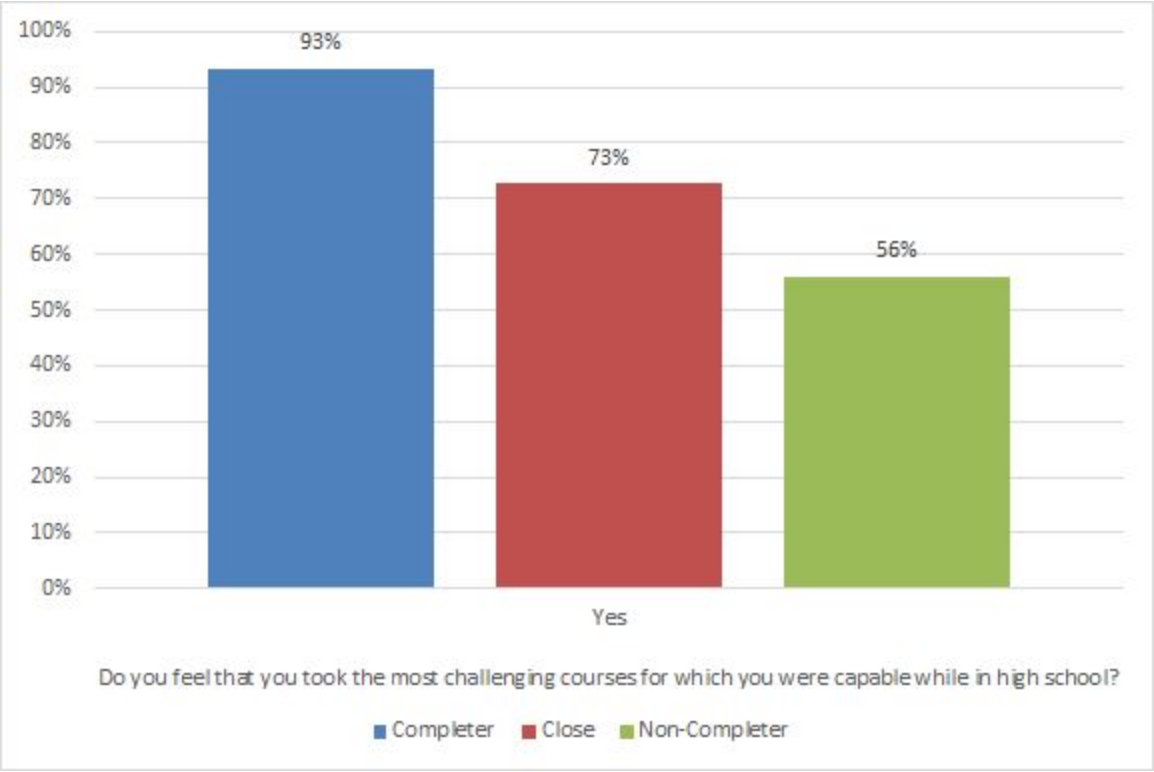
How many hours per week did you typically spend studying, doing research, or completing homework assignments out of class?

The most common response for students in the Completer and Close categories was 6 to 10 hours of study per week. Most Non-Completers reported studying 1 to 5 hours per week.



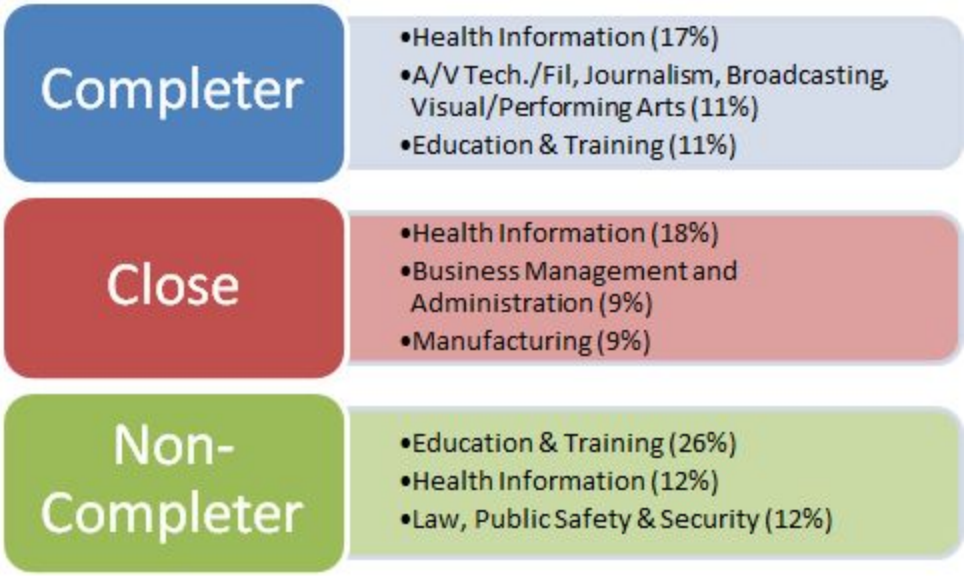
Do you feel that you took the most challenging courses for which you were capable while in high School?

The majority of students in all three groups reported taking challenging courses, with the percentage increasing from Non-Completer to Close to Completer.



Indicate the career field you plan to pursue after high school.

The top three responses from each group are shown.



Research Question 2:

To what extent do student outcomes of Early College High School students compare to other student groups?

The students included in this report are those in the Graduating Class of 2019 cohort. Only students who started in a Millard high school as ninth graders in 2015-2016 and were also Millard students in 2018-2019 are included in these statistics and comparisons. Early College High School students are those who started in the program as ninth graders in 2015-2016 and were also Millard students in 2018-2019.

Make-up of Millard Public Schools Students

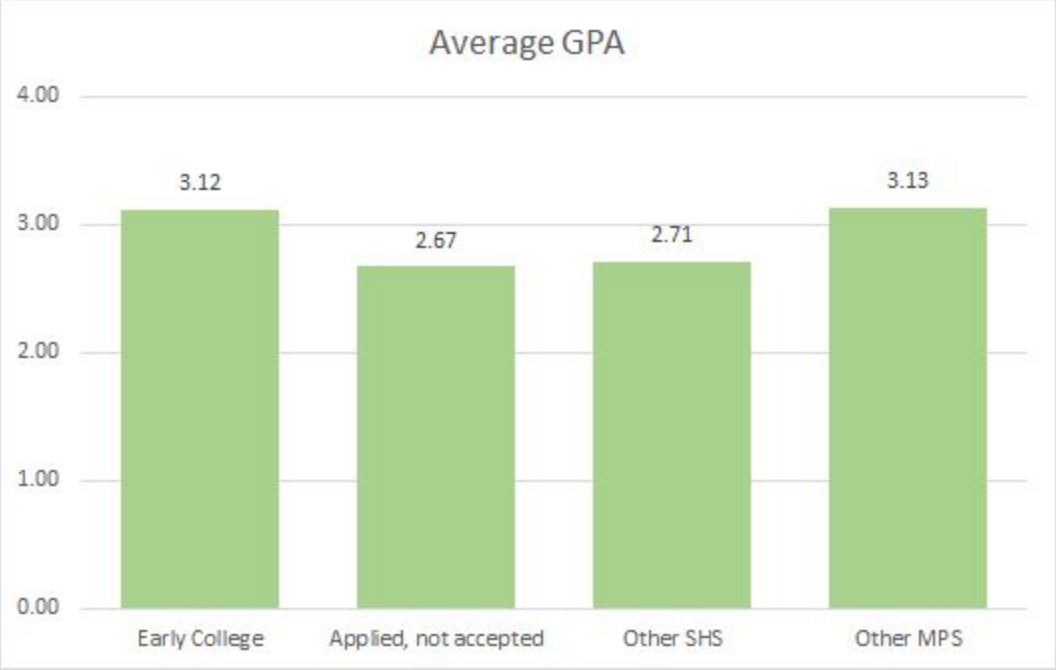
Comparison Group	Count
Early College High School*	192
Applied to ECHS, but not accepted	30
Other SHS	337
Other MPS (NHS, WHS, HHS, etc.)	1,175

*The Early College High School group includes all ECHS students: Completers, Close, and Non-Completers.

ACADEMIC ACHIEVEMENT

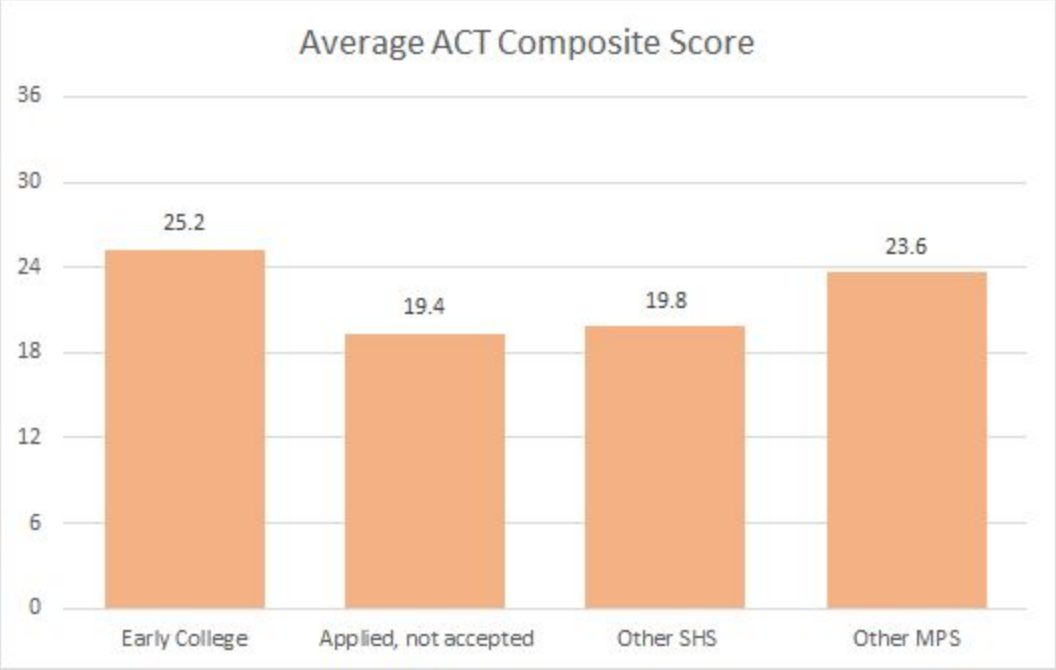
Grade Point Average (GPA)

ECHS students had comparable average cumulative GPA as Other MPS students. Both groups were higher than Other SHS students and Applied, Not Accepted.



Average ACT Composite Score

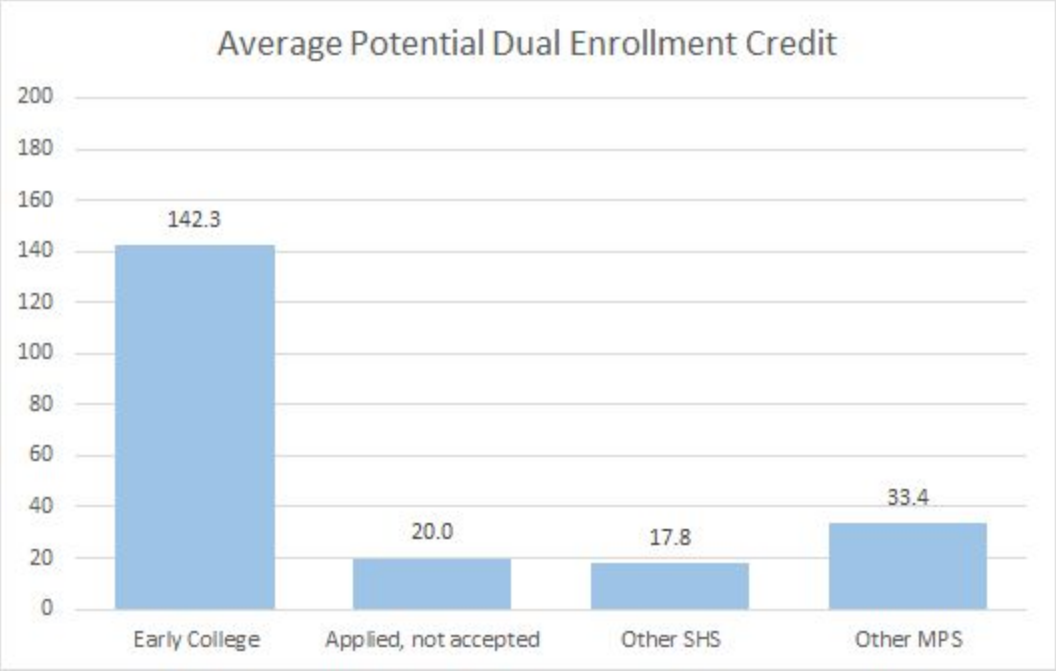
Composite ACT scores by groups are shown below. The highest ACT composite for each student was used. ECHS students had a higher average Composite ACT score than the other groups. Applied, Not Accepted students were comparable to the other Millard South High school student average.



Dual Enrollment Credit

Early College High School students had far more potential to earn dual enrollment credit than all other students within the school district.

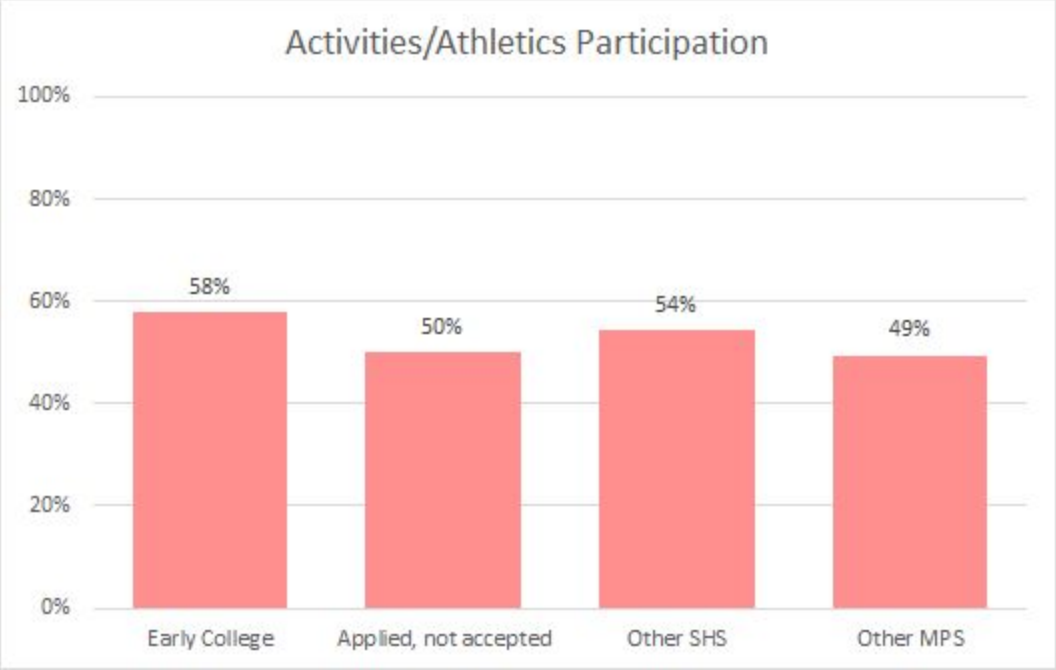
Note: Data used was the number of credits earned in courses that had the potential to be taken for dual credit.



SCHOOL INVOLVEMENT

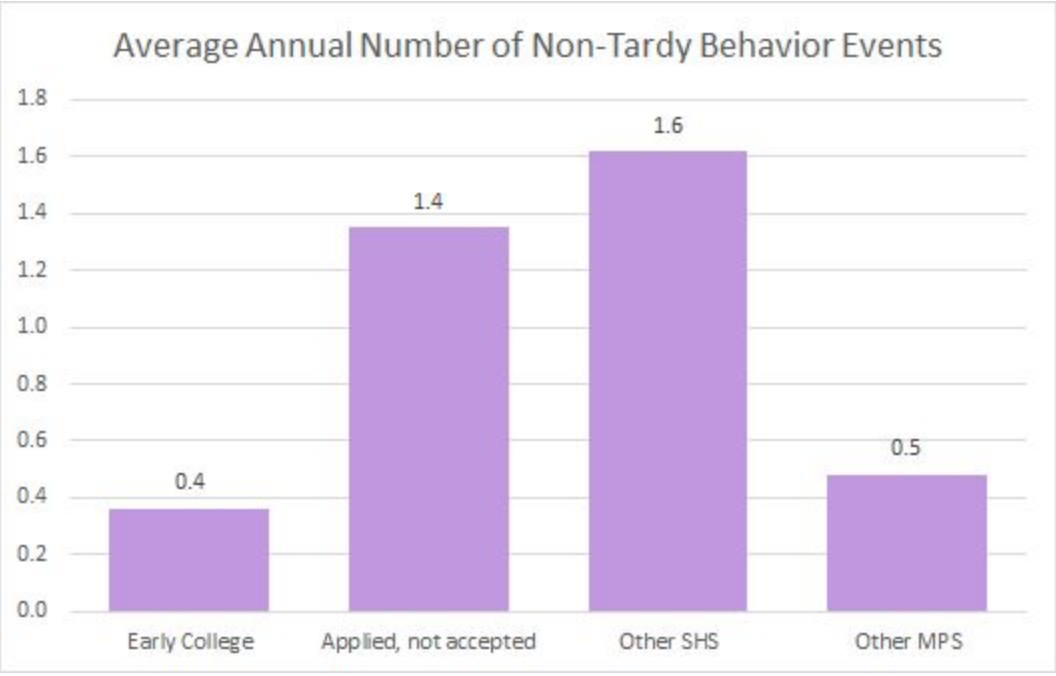
Activities/Athletics Participation

The following graph displays the percent of students in each group that participated in at least one activity or athletic team, as recorded in Infinite Campus. Early College High School students tended to participate in more activities/athletics than students in all other groups.



BEHAVIOR EVENTS

The mean number of non-tardy behavior events per high school student per year are represented on the graph below. Only behavior events in which the student was an offender or a participant are included. Early College High School students had fewer behavior events than all other groups and were similar to the "Other MPS" student group. The Applied, Not Accepted and Other SHS groups had a higher occurrence, on average, of behavior events than the ECHS and Other MPS groups.



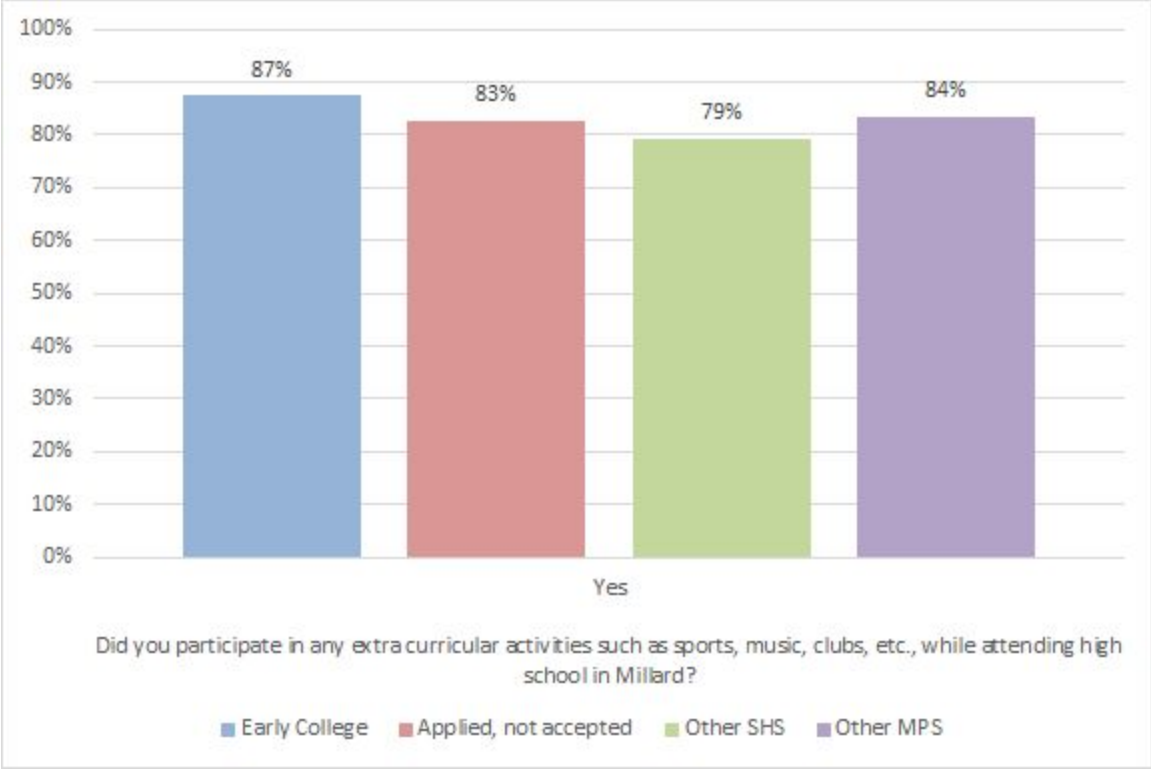
PERCEPTUAL DATA

The following information is from the Senior Exit Survey for the Graduating Class of 2019. Percentages are calculated based on the students who responded to the survey.

		Early College	Applied, not accepted	Other SHS	Other MPS
Responded to Survey	Yes	135	29	274	1,051
	No	7	1	63	124

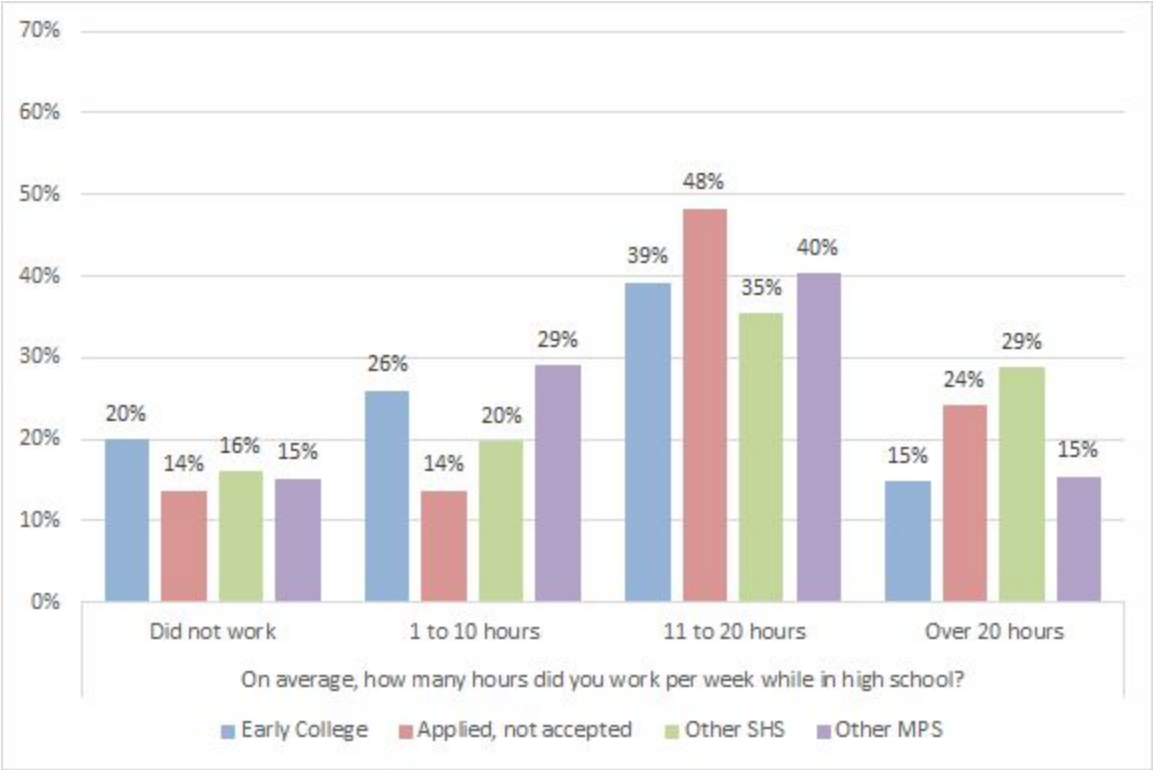
Did you participate in any extra curricular activities such as sports, music, clubs, etc., while attending high school in Millard?

A large majority of students in each group reported participating in extracurricular activities during high school.



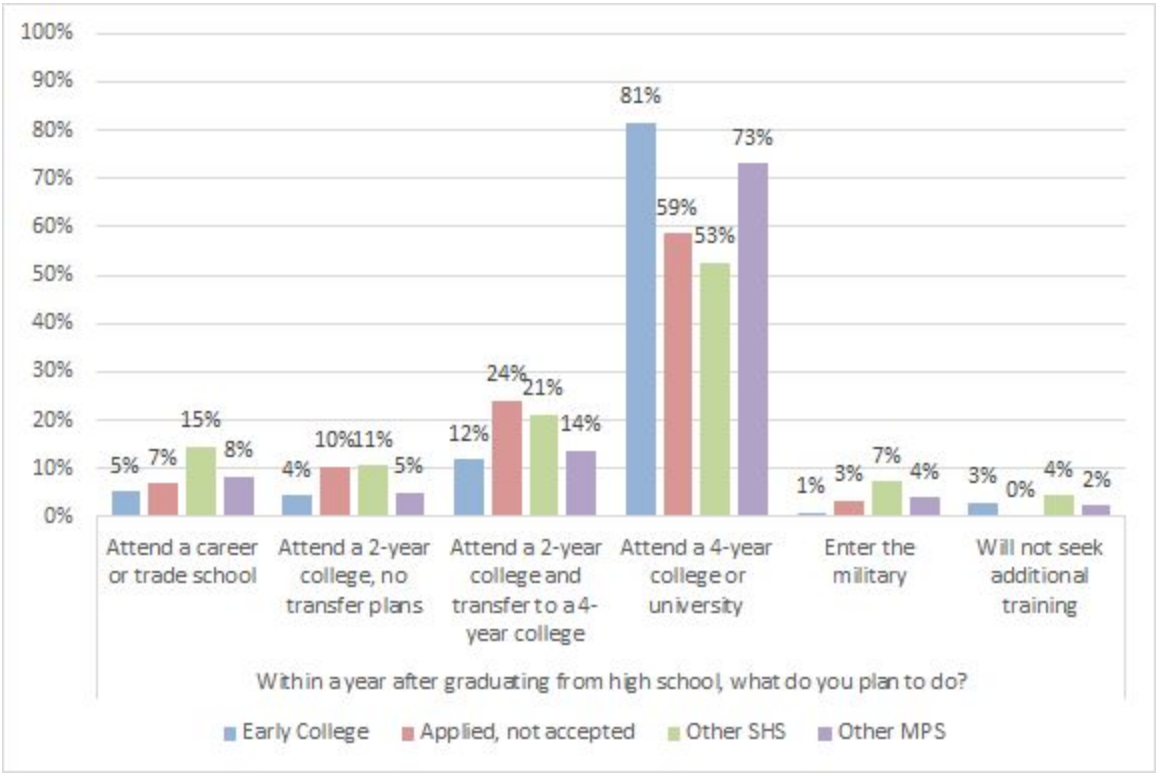
On average, how many hours did you work per week while in high school?

The most common response for all groups was 11-20 hours per week. Students in the Applied, Not Accepted and Other SHS groups were more likely to work over 20 hours per week than students in the Early College and Other MPS groups.



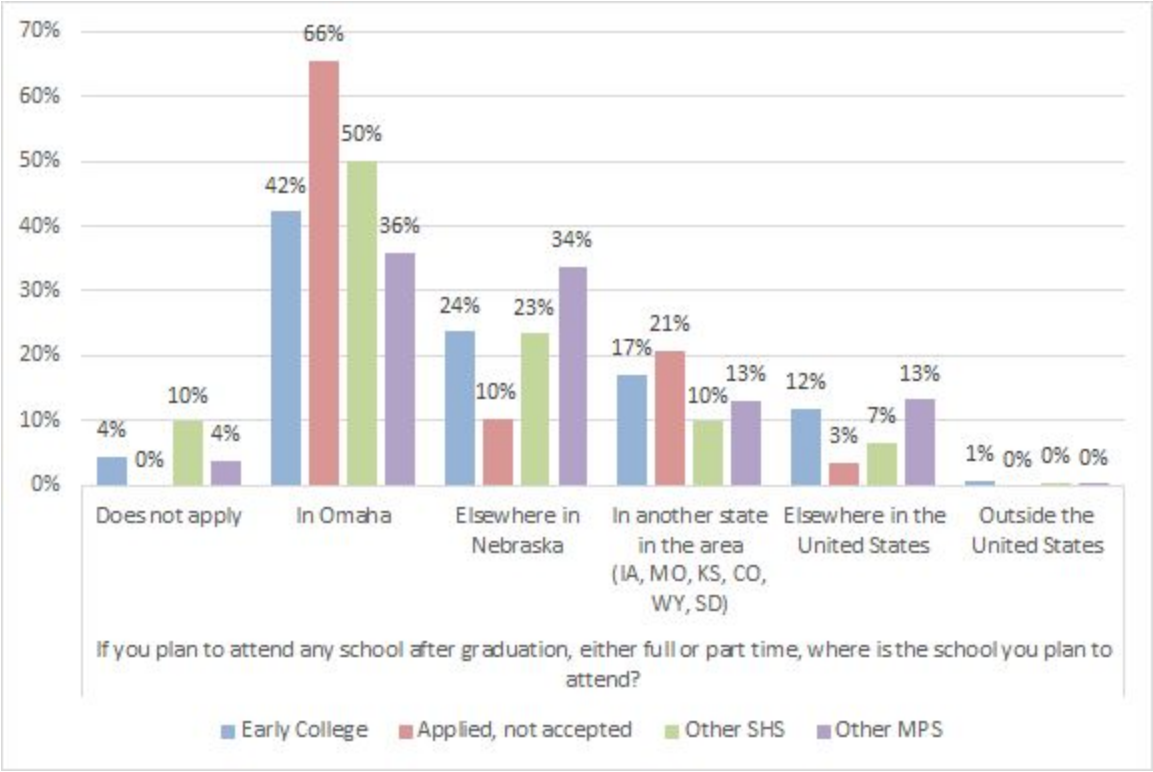
Within a year after graduating from high school, what do you plan to do? (select all that apply)

The majority of students in all groups plan to attend a 4-year college or university. Students in the Applied, Not Accepted and Other SHS groups were more likely to indicate plans to attend a 2-year college than were students in the other two groups.



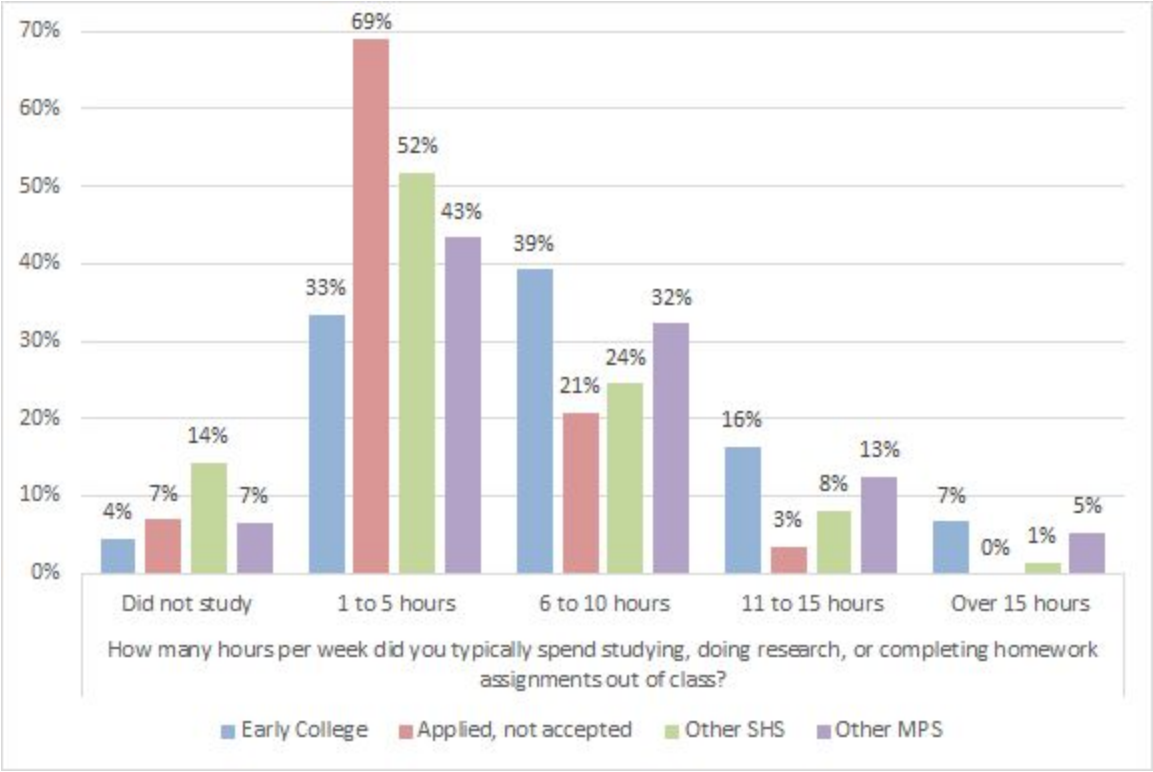
If you plan to attend any school after graduation, either full or part time, where is the school you plan to attend?

At least two thirds of the students in each group indicated plans to attend an in-state school.



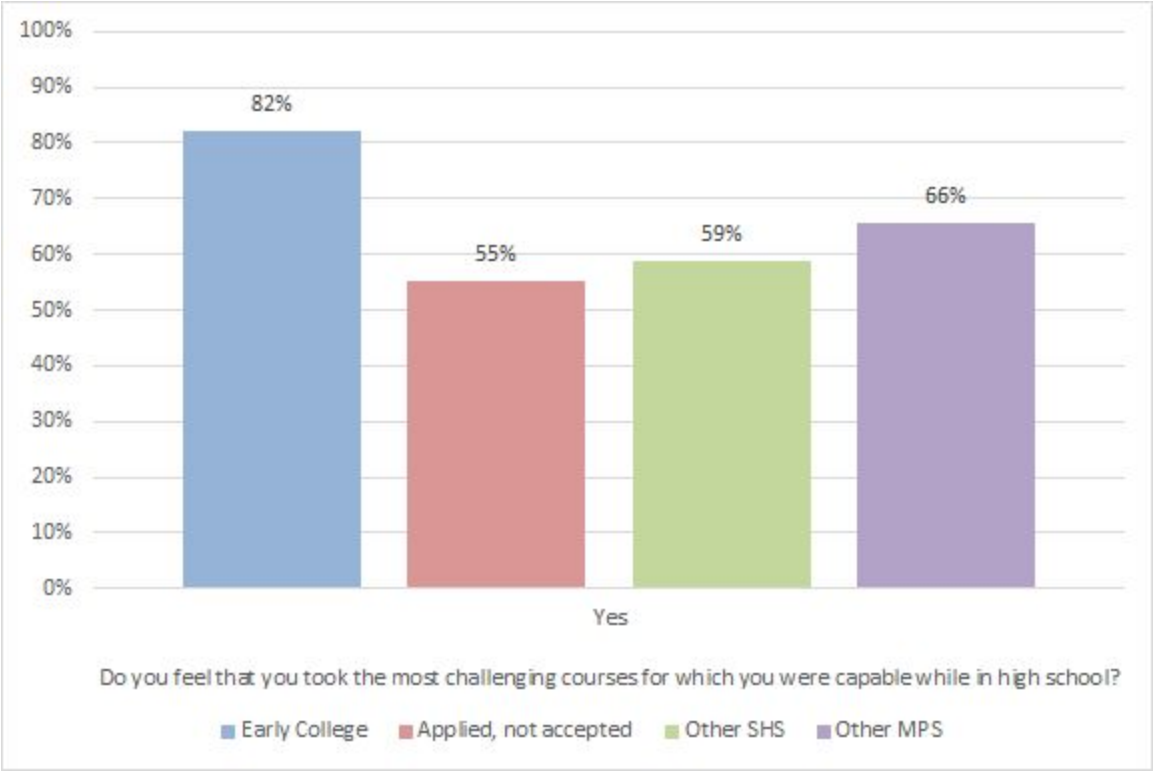
How many hours per week did you typically spend studying, doing research, or completing homework assignments out of class?

Early College High School students reported studying the most, with over 60% studying 6 or more hours weekly.



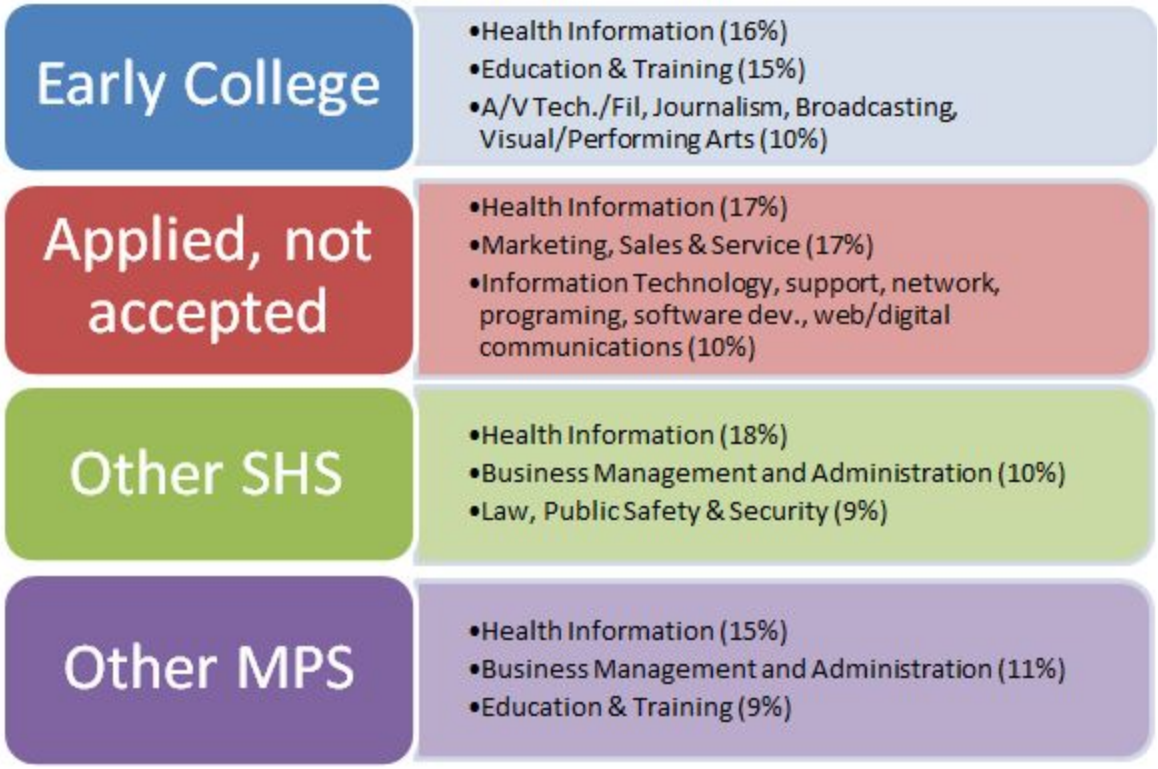
Do you feel that you took the most challenging courses for which you were capable while in high School?

A majority of students in each group reported taking challenging courses, with the Early College group challenging themselves the most.



Indicate the career field you plan to pursue after high school.

The top three responses from each group are shown.



AGENDA SUMMARY SHEET

Agenda Item: Senior Status Report - May 2020

Meeting Date: May 4, 2020

Background/ Description: May Senior Status: This report reflects the number of seniors who have, or are on track to earn, the required credits for graduation, but have not passed the required district assessments in order to receive a diploma.

Action Desired: Information

Policy / Strategic Plan Reference:

Responsible Person(s): Dr. Heather Phipps and Dr. Darin Kelberlau

Superintendent's Signature:

Number of seniors who are on track to earn the required credit for graduation
who have not met the Assessment Requirement as of April 24, 2020

	# students with one or more outstanding ELOs	Analytical Writing	Reading	Math
North High	6	2	4	3
South High	19	5	5	12
West High	4	0	2	3
Keith Lutz Horizon High	4	2	1	3

Millard North High School

Student One	Needs Math Requirements	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Two	Needs Wtg & Rdg Requirements	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Three	Needs Math Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Four	Needs Rdg Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Five	Needs Wtg & Rdg Requirements	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Six	Needs Rdg & Math Requirements	is currently applying for demonstration of proficiency in accordance with 6315.1

Millard South High School

Student One	Needs Math Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Two	Needs Rdg & Math Requirements	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Three	Needs Rdg Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Four	Needs Math Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Five	Needs Wtg Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Six	Needs Math Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Seven	Needs Wtg & Math Requirements	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Eight	Needs Math Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Nine	Needs Rdg Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Ten	Needs Wtg & Rdg Requirements	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Eleven	Needs Rdg Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1

Student Twelve	Needs Math Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Thirteen	Needs Math Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Fourteen	Needs Math Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Fifteen	Needs Wtg Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Sixteen	Needs Math Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Eighteen	Needs Math Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Nineteen	Needs Wtg & Math Requirements	is currently applying for demonstration of proficiency in accordance with 6315.1

Millard West High School

Student One	Needs Rdg Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Two	Needs Math Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Three	Needs Math & Rdg Requirements	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Four	Needs Math Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1

Keith Lutz Horizon High School

Student One	Needs Wtg, Rdg, & Math Requirements	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Two	Needs Math Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Three	Needs Math Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1
Student Four	Needs Wtg Requirement	is currently applying for demonstration of proficiency in accordance with 6315.1

AGENDA SUMMARY SHEET

Agenda Item: Summer School 2020 Modifications Report

Meeting Date: May 4, 2020

Background/ Description: Due to COVID-19, Millard Summer Programming has been modified. All summer school will be offered remotely. For summer school 2020, the schedule will remain as described in Nebraska Statute 79-1003.01. Classes will be three hours long, in blocks of 12 (middle school) or 24 sessions (SLAM and high school).

Action Desired: Information Only

Policy/Strategic Plan Reference: Strategy 2: We will develop and implement plans to differentiate and expand our instructional delivery systems to meet each student's needs in a changing world.

Responsible Person(s): Heather Phipps, Anthony Weers, Andy DeFreece, and Kara Hutton

Superintendent's Signature:

Summer School 2020 Modifications

Due to COVID-19, Millard Summer Programming has been modified. All summer school will be offered remotely. For summer school 2020, the schedule will remain as described in Nebraska Statute 79-1003.01. Classes will be three hours long, in blocks of 12 (middle school) or 24 sessions (SLAM and high school).

ELEMENTARY

Modified Program: Elementary Reading and Enrichment Program
Now: Elementary SLAM (Summer Literacy and Mathematics)
Remote

June 8-July 16 (Monday-Thursday)- 6 weeks

- Synchronous Reading/Writing on Monday/Wednesday plus additional asynchronous reading/writing work each week
- Synchronous Math Tuesday/Thursday plus additional asynchronous math work each week

Canceled: STEM Summer School

MIDDLE SCHOOL

Modified Program: Middle School Summer School
Remote

June 8-June 25 (Monday-Thursday); 8:00-11:15 A.M., 11:50-3:00 P.M
Reading, Writing , Math Focus

- Courses:
  - Read-Write 6 (Incoming 6th)
  - Read-Write 7
  - Read-Write 8
  - Prep for IM I
  - Prep for IM II
  - Prep for IM III
  - English Language Learners

Canceled: Enrichment Courses, Henry Doorly Zoo and Wildlife Safari

HIGH SCHOOL

Modified Program: High School Summer School
Remote
June 8-July 10 (Monday-Friday); 7:45-10:50 A.M., 11:25-2:30 P.M.

Canceled: Step Up to High School; Full Year Courses (Algebra I and Geometry)