

School District of Holmen

Agriculture & Natural Resources Education and Technological Education Curriculum



2011-12

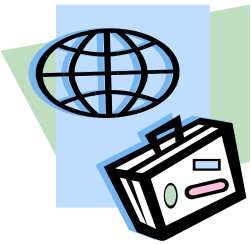
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Executive Summary

*T*he Career Technological Education teachers have worked to develop a curriculum that provides a framework for CTE education and student learning in the School District of Holmen. This document is a road map for teachers, administrators, parents and students. It includes district and content specific information. It is a guide that focuses on student learning by defining a vision and curriculum aligned to the state standards and includes vocabulary and strategies essential for understanding. The result is a dynamic document that supports student achievement in the District.

*T*he main part of the curriculum is divided by content area and grade level. The curriculum for each course outlines what the student should know or be able to do. It is student-focused, defining competencies, embedding standards, and outlining assessment expectations.

- Competencies are the broadest skills, knowledge or attitudes that tell students what primary intended outcomes they will learn. These competencies are developed from state standards, test objectives, textbooks, curriculum guides, and other professional sources. They are student centered, observable, and measurable.
- Assessment expectations establish the acceptable level of performance based on district criteria by grade level or discipline.

*T*he former State Superintendent of Public Instruction, John Benson, stated that “fundamental to every child’s success in school is a clear set of expectations for academic accomplishment. It should be no mystery to parents and community members what educators expect students to know and be able to do.” If we are successful at defining curriculum, using a variety of instructional strategies, and evaluating students through on-going assessments, no children should be left behind and all students should succeed.

From Instructional Services

District Information

SCHOOL DISTRICT POLICY STATEMENT
School District of Holmen SECTION: A
Holmen, WI 54636 FOUNDATIONS & BASIC COMMITMENTS

FILE: AD

EDUCATIONAL PHILOSOPHY STATEMENT

The School District of Holmen exists for the purpose of providing the best possible educational programming with available resources for the youth of the District and for the community. The District will operate under democratic principles, with decisions made in a democratic manner by a representative board elected by the people of the District.

The Board is aware of its commitment to the State of Wisconsin in carrying out the mandates and expectations in the area of education, recognizing that education is a state as well as a local responsibility. To that end, the Board shall strive to represent the State of Wisconsin as well as the School District of Holmen in making decisions regarding the educational program. The wishes and expectations of the community shall be continuously assessed by citizen input and informal contacts with the citizens of the School District. Channels of information shall be kept open to make sure that citizen's voices may be heard.

The District exists for all the youth of the community. In its planning, the Board, administration and faculty shall be aware of the needs of all children and shall strive to establish goals and programs that meet such needs to the greatest extent possible. The District does not exist for any special intent groups or individuals and the Board, administration, and faculty shall strive to make sure that decisions and programs reflect the main consensus of community wishes.

Each individual student is seen as a unique person with great potential and possessing talents and abilities which he/she should be encouraged to develop as much as possible. The District shall provide programming with as much breadth as possible to foster such development. The District through the Board, administration, and faculty and all other staff shall attempt to provide quality schools where good moral standards, patriotism, respect of fellow man, respect for scholarship and achievement prevail, not only in the example set by the workers in the schools, but also in the expectations placed upon the students.

Cross Ref AE, District Goals and Objectives
 JB, Equal Educational Opportunities

Approved: March 1984
Reviewed and Approved: 2002

District Vision Statement

Educating Every Student to Achieve Global Success

District Mission Statement

Educate and inspire students today and prepare them for tomorrow by:

- ▶ **Ensuring that all students learn at high levels.**
- ▶ **Developing the following 21st Century Skills:** innovation, creativity, collaboration, communication, initiative, problem-solving, critical thinking, leadership, self-direction, responsibility, interpersonal skills, cross-cultural skills, and computer and media literacy.
- ▶ **Achieving a deeply held partnership with the entire community.**
- ▶ **Operating and acting in a fiscally responsible manner while ensuring well-rounded educational experiences.**

Strategic Objectives

Strategic Objective #1 Student Learning:

Strategic Objective #2 Communication:

Strategic Initiative #3 Fiscal Responsibility:

Strategic Initiative #4 Improvement Capacity:

LEARNER GOALS

The School District of Holmen is a system that empowers the community. This is accomplished through continuous improvement, enhancement of self-worth, and optimization of student performance. The focus for each student is on joy in learning, optimization of student performance, and preparation in life skills. Therefore, in the Holmen School District, **THE LEARNER WILL:**

1. Build a substantial knowledge base.

Students will build a solid knowledge base developed from challenging subject matter in computer/information, technology, environmental education, fine and performing arts, foreign language, health, language arts, mathematics, physical education, reading, science, social studies, and vocational education.

2. Develop thinking and communication processes.

Students will develop a command of thinking processes (analysis, creative thinking, problem solving, decision making, visualizing, concept development) that permit them to interpret and apply the knowledge base. Communication processes (listening, speaking, reading, writing, viewing, image making, and other symbolizing) enable them to communicate thoughts with others.

3. Apply knowledge and processes.

Students will build upon knowledge and apply learning processes to create new ideas and understanding, enhance human relations, expand awareness, and enrich human experiences.

4. Acquire the capacity and motivation for life-long learning.

Students will develop their natural curiosity to acquire habits of inquiry and a love for learning which will motivate them to continue learning throughout their lives.

5. Develop physical and emotional wellness.

Students will acquire the attitudes, knowledge, and habits to grow physically and emotionally healthy, develop self-esteem and confidence, and exhibit a healthy life style.

6. Develop character.

Students will exhibit personal characteristics, such as compassion, conviction, curiosity, ethics, integrity, motivation, and responsibility.

7. Be a responsible citizen.

Students will possess and exercise the knowledge and processes necessary for full participation in the family, civic, economic, and cultural life of a complex interdependent, global society. Students will acquire an understanding of the basic workings of all levels of government, understanding the duties and responsibilities of citizenship. Students will make a commitment to the basic values of our government including a reverence and respect for the history of the American flag, the Declaration of Independence, the U.S. Constitution and the constitution and laws of this state, and acquire a knowledge of state, national, and world history.

8. Be prepared for productive work.

Students will acquire knowledge, capabilities, and attitudes necessary to make them contributing members of a dynamic national and world economy, and prepare them for the transition from school to work.

9. Respect cultural diversity and pluralism.

Students will demonstrate the knowledge and attitudes necessary to understand and respect individuals and multi-cultural diversity, and to work cooperatively with all people.

10. Develop aesthetic awareness.

Students will become aware and be able to generate those forms of experience that have artistic and aesthetic meaning.

WISCONSIN TEACHER STANDARDS & LICENSURE
Wisconsin's 10 Standards for Teacher Development and Licensure

These standards become the basis of teacher licensing after August 31, 2004. The entire document, which includes knowledge, skills and dispositions under these standards, can be found on DPI's website -

<http://www.dpi.state.wi.us/dpi/dlsis/tel/pdf/10kdp.pdf>

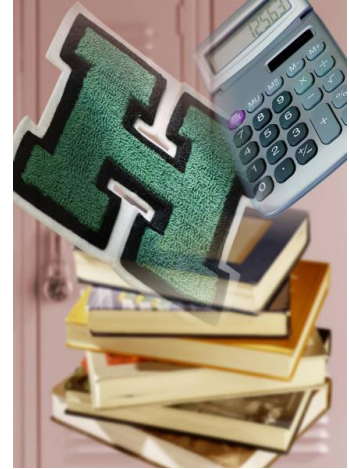
1. **Teachers know the subjects they are teaching.** The teacher understands the central concepts, tools of inquiry and structures of the disciplines she or he teaches and can create learning experiences that make these aspects of **subject matter** meaningful for pupils.
2. **Teachers know how children grow.** The teacher understands how children with **broad ranges of ability** learn and provides instruction that supports their intellectual, social and personal development.
3. **Teachers understand the children learn differently.** The teacher understands how pupils differ in their approaches to learning and the barriers that impede learning and **can adapt instruction to meet the diverse needs** of pupils, including those with disabilities and exceptionalities.
4. **Teachers know how to teach.** The teacher understands and **uses a variety of instructional strategies**, including the use of technology to encourage children's development of critical thinking, problem solving and performance skills.
5. **Teachers know how to manage a classroom.** The teacher uses an understanding of **individual and group motivation** and behavior to create a learning environment that encourages positive social interaction, active engagement in learning and self-motivation.
6. **Teachers communicate well.** The teacher uses effective **verbal and nonverbal communication** techniques as well as instructional media and technology to foster active inquiry, collaboration and supportive interaction in the classroom.
7. **Teachers are able to plan different kinds of lessons.** The teacher **organizes and plans systematic instruction** based upon knowledge of subject matter, pupils, and the community and curriculum goals.
8. **Teachers know how to test for student progress.** The teacher understands and **uses formal and informal assessment** strategies to evaluate and ensure the continuous intellectual, social and physical development of the pupil.
9. **Teachers are able to evaluate themselves.** The teacher is a **reflective practitioner** who continually evaluates the effects of his or her choices and actions on pupils, parents, professionals in the learning community and others and who actively seeks out opportunities to grow professionally.
10. **Teachers are connected with other teachers and the community.** The teacher **fosters relationships** with school colleagues, parents and agencies in the larger community to support pupil learning and well-being and acts with integrity, fairness and in an ethical manner.

School District of Holmen

2011-12

SCHOOL BOARD OF EDUCATION MEMBERS (as of 2/2012)

Tim Medinger - President
Elizabeth Kamprud – Vice President
Anita Jagodzinski - Clerk
Gary Dunlap – Treasurer
Cheryl Hancock
Joe Gittens
Kari Treadway



ADMINISTRATION

Dr. Dale Carlson, District Administrator
Wendy Savaske, Director of Instructional Services
Julie Krackow, Director of Pupil Services
Jay Clark, Associate District Administrator
Joanne Stephens, Evergreen Elementary Principal
Patrice Tronstad, Prairie View Elementary Principal
Brian Oberweiser, Sand Lake Elementary Principal
Bonnie Striegel, Viking Elementary Principal
Ryan Vogler, Middle School Principal
Keri Holter, Middle School Associate Principal
Bob Baer, High School Principal
Darcy Lindquist, High School Associate Principal
Nick Weber, Interim High School Associate Principal
Neal Janssen – 4K Principal
Linzi Gronning, Activities / Athletic Director

School District of Holmen

Board of Education Action Regarding

State Standards for Career Tech. Education

Action was taken by the School Board of Holmen School Board on Monday, May 18, 1998, to adopt the following:

Adoption of the Wisconsin State Standards (CI98-017)

The Holmen curriculum process includes the steps of aligning the curriculum to the Wisconsin State standards, the WSAS testing criteria, as well as what should be included locally. Therefore, the State Standards would be adopted by the District as part of a process to meet the students' needs.

BE IT RESOLVED that the Board of Education approve the adoption of the Wisconsin State Standards as part of a process to meet the students' needs as recommended. Motion by D. Berg. Second by G. Dunlap. Motion carried 6/0.





School District of Holmen

Department Vision Statement

Career and Technical Education focuses on exploration of the self in relation to the world of work. Students discover their interests, talents, abilities, and the niches where their talents and abilities might best be used. Career and Technical Education also equips students with research skills to enable them to form a realistic picture of job opportunities. In essence, Career and Technical Education brings greater satisfaction and relevance to career choices. Career & Technical Education better prepares students for all post-high school opportunities. Whether moving on to further education, training or employment, every Wisconsin student moves through curriculum-based career awareness, exploration, planning and preparation leading to a realistic individualized career plan which is compatible with the student's abilities, aptitudes and interests.

Mission Statement

In order to achieve the vision, our Department will:

The focus is exploratory in nature providing students with knowledge, experience, and hands-on training in the Agriculture and Natural Resources (ANR)/Technology and Engineering Education (TEE) department. Students will learn to apply academic principles that can be put to use in their personal lives. These are project based courses that will enable students to make educated career choices.

School District of Holmen
CTE Staff

Ag. & Natural Resources Ed. & Tech Ed.
Daniel Lilla
Steve Jennings
Roger King
Abe Regan
Jim Schmidt
Chuck Smith

Administrator & Instructional Services Liaison:

Wendy Savaske, Instructional Services Director
Bob Baer, Administrator to CTE
Doug Burge, Instructional Services Liaison

Timeline for CTE Curriculum Writing

September, 2010	Began self-study process with planning session
2010-11	Agriculture and Natural Resource Education <ul style="list-style-type: none"> •
2010-2011	Graphic Communications & Photography <ul style="list-style-type: none"> • Surveyed students and staff • Site Visits <ul style="list-style-type: none"> ○ WTC Graphics & Communications Departments • Advisory Committee met 2 times during the school year
2010-2011	Computer Aided Design <ul style="list-style-type: none"> ○ Student Survey ○ Met with industry personnel and technical college instructor ○ Program Review by <ul style="list-style-type: none"> ○ WTC Instructor ○ Owner of Rugroden Drafting and Design in Onalaska
2010-2011	Electronics & Robotics <ul style="list-style-type: none"> ○ Student Surveys ○ Industrial Technology Department
2010-2011	Video Production <ul style="list-style-type: none"> ○ Technology Education Department ○ Student Surveys
2010-2011	Building Construction, Welding and Machine Shop <ul style="list-style-type: none"> ○ Student Survey ○ Site Visit to Western Technical College ○ Input from Advisory Committee
2010-2011	Woodworking <ul style="list-style-type: none"> ○ Student Survey ○ Site Visits to Western Technical College & West Salem High School ○ Input from Advisory Committee
2010-2011	Automotive <ul style="list-style-type: none"> ○ Site Visits to Western Technical College, GET and Portage High Schools ○ Input from Advisory Committee
Winter, 2011	Analyzed all data to identify strengths and opportunities.
March, 2011	Finalized report
May, 2011	Presented self-study findings to Curriculum Council and School Board of Education.
February, 2012	Career Day(Business and Industry sessions on job obtainment)
Various throughout 2011-2012	Cesa 4 Network nights
March 2012	WTEA(Wisconsin Technology Education Assoc.)
2011-2012 School year	Various Business visits

Agricultural and Natural Resource Education Staff Recommendations

Overall Planning for Improvement

From the results of external evaluations, survey results, site visits, and advisory committee meetings, the Agriscience department has identified the following recommendations:

STRATEGIC INITIATIVE 1 – STUDENT ACHIEVEMENT & LEARNING	
ISSUE 1.1	Curriculum and Program Design
Recommendations	a) A course offering related to Agriculture should be implemented at the Middle School. b) Add a entry level course in Technology Agriculture and Industry at the High School. c) Course offerings which are no longer showing strong student interest should be revised or dropped.
Timeline for Implementation	Ongoing - 2011- 13 school years
Shared Involvement for Implementation	Parents, Students, High School Middle School Administration, Curriculum Council, Board of Education, Agriscience Instructor and Guidance Office
Action Taken to Date	
ISSUE 1.2	Classroom Instruction
Recommendations	a) Summer school offerings need to be implemented for students who are unable to schedule courses that conflict with the Agriscience course offerings. b) Implement transcribed credits for Animal Science and Greenhouse II curriculum with Western Technical College c) Implement and utilize CARET (an integrated online system to document, and assess educational instruction).
Timeline for Implementation	Ongoing - 2011- 13 school years
Shared Involvement for Implementation	Parents, Students, High School, Middle School Administration, Curriculum Council, Board of Education, High School and Technical College Agriscience Instructors, Western Technical College and the WI Technical College Board.
Action Taken to Date	

ISSUES 1.3	Program Assessment
Recommendations	a) Increase follow-up information is available on graduates. b) Utilize Agriculture Data Base to track all students based on competencies completed, Academic Standards, work-based involvement and youth organization involvement
Timeline for Implementation	Ongoing - 2011- 13 school years
Shared Involvement for Implementation	Parents, Students, High School, Middle School Administration, Curriculum Council, Board of Education, High School Improvement Team
Action Taken to Date	
ISSUE 1.4	Experiential Learning
Recommendations	a) Students need to develop a file and/or portfolio/record book that documents their agricultural education experience programs. b) Document supervisory visits of student experiential learning (SAE).
Timeline for Implementation	Ongoing - 2011- 13 school years
Shared Involvement for Implementation	Parents, Students, High School, Middle School Administration, Curriculum Council, Board of Education, High School Improvement Team
Action Taken to Date	
ISSUE 1.5	Leadership Development
Recommendations	The FFA chapter should have an approved constitution and bylaws that have been reviewed and updated within the past five years.
Timeline for Implementation	Ongoing - 2011- 13 school years
Shared Involvement for Implementation	Students (FFA Members), High School, Middle School Administration, Activities Office, FFA Advisor and Community Members
Action Taken to Date	

STRATEGIC INITIATIVE 2 – COMMUNITY INVOLVEMENT	
ISSUE 2.1	School and Community Partners
Recommendations	A program volunteer group should be in place to work with the local teacher to identify needs and plans to support the program
Timeline for Implementation	Ongoing - 2011- 13 school years
Shared Involvement for Implementation	Parents, Students, District Administration, Activities Office, High School Middle School Administration, Board of Education, Agriscience Instructor, FFA Alumni and Guidance Office
Action Taken to Date	
ISSUE 2.2	Marketing Agriscience Department
Recommendations	A recruitment and retention plan needs to be annually developed and implemented for prospective and current students with evidence provided
Timeline for Implementation	Ongoing - 2011- 13 school years
Shared Involvement for Implementation	Parents, Students, District Administration, Activities Office, High School Middle School Administration, Board of Education, Agriscience Instructor, and Guidance Office
Action Taken to Date	
STRATEGIC INITIATIVE 3 – HUMAN RESOURCE DEVELOPMENT	
ISSUE 3.1	Certified Agriculture Teacher and Professional Development
Recommendations	The agriculture teacher should be employed with an 11-month contract to fulfill the duties of an exemplary Agriscience program.
Timeline for Implementation	Ongoing - 2011- 13 school years
Shared Involvement for Implementation	Parents, Students, District Administration, Activities Office, High School Middle School Administration, Board of Education and Agriscience Instructor
Action Taken to Date	
ISSUE 3.2	Program Planning and Evaluation
Recommendations	The Agriscience instructor needs to work with the School Board to establish a protocol for membership and reporting to the School Board for an implementation of recommendations from the meetings.
Timeline for Implementation	Yearly then ongoing - 2011- 13 school years

Shared Involvement for Implementation	Parents, Students, District Administration, High School Middle School Administration, Board of Education and Agriscience Instructor.
Action Taken to Date	
STRATEGIC INITIATIVE 4 – FINANCE, FACILITITES, AND RESOURCES	
ISSUE 4.1	Facilities & Equipment, Supplies, Materials, Resources
Recommendations	<p>a) Supply inventory should be completed with an organized plan for new purchases and replacement.</p> <p>b) A safety inspection should be conducted in the department.</p>
Timeline for Implementation	Ongoing - 2011- 13 school years
Shared Involvement for Implementation	High School Administration, Facility and Grounds Staff, Agriscience Instructor and Associate District Administrator
Action Taken to Date	

Middle School Technology & Engineering Education Staff Recommendations Overall Planning for Improvement

From the results of the self-study, the Middle School Technology Education Department has identified the following recommendations:

STRATEGIC INITIATIVE 1 – STUDENT ACHIEVEMENT & LEARNING	
ISSUE 1.1	Course Outline and/or Curriculum Issues
Recommendations	<ul style="list-style-type: none"> a) Write a full and up-to-date curriculum in grades 6-8th grade b) Obtain up-to-date CAD and Robotic software c) Add projects such as Printing, Metal Fabrication, or Sheet Metal fabrication d) Continue to organize the present labs e) Follow a middle school philosophy and allow <u>all</u> 6th, 7th, and 8th grade students to participate in Technology Education f) Increase the number of dollars spent per pupil g) Add an entry level course in Agriscience h) Maintain a schedule that allows consistent continuity for curriculum and instruction i) Maintain a schedule that allows a consistent opportunity for Tech Ed student intervention
Timeline for Completion	2011-12 school calendar year Curriculum Council early 2011-12 school year Ongoing
Shared Involvement for Implementation	Parents, Students, Middle School Administration, High School Instructors
Action Taken to Date	
STRATEGIC INITIATIVE 2 – COMMUNITY INVOLVEMENT	
ISSUE 2.1	Community Connections
Recommendations	Continue to build a data base with the names of people who work in Tech Ed related fields for the purpose of having them come and speak to classes about their careers.
Timeline for Implementation	Ongoing
Shared Involvement for	Parents and relatives of HMS students Community members

Implementation	
Action Taken to Date	

STRATEGIC INITIATIVE 4 – FINANCE, FACILITIES, AND RESOURCES	
ISSUE 4.1	Facility/Lab/Classroom Utilization
Recommendations	a) Increase shop size b) Reduce class size while continuing to increase curriculum variety
Timeline for Implementation	2012-13 school calendar year Ongoing
Shared Involvement for Implementation	HMS Administration, Facility and Grounds Staff
Action Taken to Date	
ISSUE 4.1	Equipment, Supplies, Materials, Resources
Recommendations	a) Continue to upgrade computers on a rotational schedule b) Replace old Unisaw with a much safer Stop Saw c) Replace old Jointer with new and safer Jointer
Timeline for Implementation	Ongoing 2011- 12 school year
Shared Involvement for Implementation	District & Middle School Administration
Action Taken to Date	

Graphic Communication & Photography Education Staff Recommendations Overall Planning for Improvement

From the results of external evaluations, survey results, site visits, and advisory committee meetings the graphic communication and photography department has identified the following recommendations:

STRATEGIC INITIATIVE 1 – STUDENT ACHIEVEMENT & LEARNING	
ISSUE 1.1	Curriculum & Program Design Issues
Recommendations	<ul style="list-style-type: none"> a) Investigate offering an Advanced Photography class b) Teach PDF creation in Graphic Communication classes c) Revive the screen printing unit in Graphic Communication classes d) Get away from process photography and into image-setting and plate-setting
Timeline for Implementation	2011-2012 school year
Shared Involvement for Implementation	Principal and Guidance personnel Get advice from WTC instructors
Action Taken to Date	
ISSUE 1.2	Career Relevance and/or Industry Trends
Recommendations	<ul style="list-style-type: none"> a) More internet-based instruction and web design b) Move toward electronic printing, image-setting & direct to plate printers c) Continue to work with WTC in articulating courses and staying up with industry trends d) Continue to study the relevance of teaching film photography
Timeline for Implementation	Ongoing
Shared Involvement for Implementation	WTC Graphics and Visual Communication department La Crosse area photographers and graphic arts businesses
Action Taken to Date	Instructor serves on the WTC Graphics and Visual Communications advisory board

STRATEGIC INITIATIVE 2 – COMMUNITY INVOLVEMENT	
ISSUE 2.1	Community Connections
Recommendations	Continue to tour and work with area graphics and photography businesses
Timeline for Implementation	2011 and ongoing
Shared Involvement for Implementation	WTC Graphics and Visual Communication department La Crosse area photographers and graphic arts businesses
Action Taken to Date	Advisory committee has met at least once each of the past three years
STRATEGIC INITIATIVE 3 – HUMAN RESOURCE DEVELOPMENT	
ISSUE 3.1	Professional Growth
Recommendations	Instructor should continue attending seminars, workshops, and classes
Timeline for Implementation	Ongoing
Shared Involvement for Implementation	TEE Department, HS Administration
Action Taken to Date	
STRATEGIC INITIATIVE 4 – FINANCE, FACILITIES, AND RESOURCES	
ISSUE 4.1	Equipment Purchases
Recommendations	<ul style="list-style-type: none"> a) Create a working photography studio with a more professional lighting system b) Replace the three very old computers in the lab. Continue to purchase, maintain, and upgrade Macintosh computers. c) Invest in a medium format high quality printer and or laser to plate printer d) Purchase additional digital SLR cameras e) Update QuarkXPress desktop publishing software to newest version f) Invest in new software as it becomes available g) Investigate and purchase an image-setter for Graphic Communication h) Purchase a card reader for each computer i) Repair and maintain the current offset printing press or replace it with a risograph printer
Timeline for	2011/2012 school year

Implementation	
Shared Involvement for Implementation	Technology funds, curriculum funds, high school funds, department budget Work with Instructional Services, Information & Technology department, and Principals Talk to professional photographers and WTC instructors about lighting systems
Action Taken to Date	Several card readers have been purchased in 2010-11 Backdrops and some lighting has been purchased in 2010-11 Some 35mm SLR's have been donated by community members in the past Some computers have been replaced over the last several years
ISSUE 4.2	Budget Planning
Recommendations	a) Implement a 3 year replacement plan for computers and software b) Ask for donations of 35mm film cameras
Timeline for Implementation	2011-2012
Shared Involvement for Implementation	Work with Instructional Services, Information & Technology department, and Principals Advertise for cameras in the various newsletters to parents and staff
Action Taken to Date	

CAD Program Staff Recommendations

Overall Planning for Improvement

From the results of external evaluations, survey results, site visits, and advisory committee meeting the CAD staff has identified the following recommendations:

STRATEGIC INITIATIVE 1 - STUDENT ACHIEVEMENT & LEARNING	
ISSUE 1.1	Classroom Instruction
Recommendations	Consider articulating Intro to Engineering Design and Communication course with Western TC.
Timeline for Implementation	Depends on budget and resources available
Shared Involvement for Implementation	Western TC, Instructors
Action Taken to Date	
ISSUE 1.2	Career Relevance and/or Industry Trends
Recommendations	a) Arrange for guest speakers to present to the class b) Set up shadowing for the high school student interested in CAD Design c) Promote Technical College opportunities to student with good math and science skill.
Timeline for Implementation	Possibly in April 2011 or will be implemented September 2011 and should continue each and every year.
Shared Involvement for Implementation	Community businesses, Western TC
Action Taken to Date	I talked with a private company to see if students could come into their place of business or if they could come in to the school.
ISSUES 1.3	Gender and Recruitment
Recommendations	Work with Guidance Office to promote Tech. Ed. classes to girls.
Timeline for Implementation	March 2011 till there is an equal number of boys to girls.
Shared Involvement for Implementation	
Action Taken to Date	

STRATEGIC INITIATIVE 3 – HUMAN RESOURCE DEVELOPMENT	
ISSUE 3.1	Professional Growth
Recommendations	Pursue training on new or updated software applications.
Timeline for Implementation	2011 and ongoing
Shared Involvement for Implementation	Instructors, Administrators
Action Taken to Date	
STRATEGIC INITIATIVE 4 – FINANCE, FACILITIES, AND RESOURCES	
ISSUE 4.1	Facilities & Equipment, Supplies, Materials, Resources
Recommendations	a) Budget time and dollars for instructor training to keep up with the technological advancement. b) Acquire additional supporting material to go with each program (books). c) Upgrade current software.
Timeline for Implementation	Depends on budget and resources available
Shared Involvement for Implementation	
Action Taken to Date	

Electronic & Robotics Program

Staff Recommendations

Overall Planning for Improvement

From the results of external evaluations, survey results, site visits, and advisory committee meetings, the staff has identified the following recommendations:

STRATEGIC INITIATIVE 1 – STUDENT ACHIEVEMENT & LEARNING	
ISSUE 1.1	Classroom Instruction
Recommendations	a) Better assessment for evaluation of students progress b) Incorporate career information about the kinds of jobs available in robotics and electronics areas.
Timeline for Implementation	September of 2011
Shared Involvement for Implementation	Colleagues and business community
Action Taken to Date	
ISSUE 1.2	Career Relevance and/or Industry Trends
Recommendations	a) Arrange for guest speakers to present to the class b) Promote Technical College opportunities to student with good math and science skill.
Timeline for Implementation	September 2011 and should continue each and every year.
Shared Involvement for Implementation	Industry and other business deal with robotics and electronics
Action Taken to Date	
ISSUE 1.3	Gender and Recruitment
Recommendations	Guidance office and tech. teachers should try to promote these classes to more girls.
Timeline for Implementation	September 2011 till there is an equal number of boys to girls
Shared Involvement for	Tech Ed Department and School Counselors

Implementation	
Action Taken to Date	None
STRATEGIC INITIATIVE 4 - FINANCE, FACILITIES, AND RESOURCES	
ISSUE 4.1	Facilities & Equipment, Supplies, Materials, Resources
Recommendations	<ul style="list-style-type: none"> a) Find a place to teach the class so it does not float from room to room and instructor to instructor. b) Budget time and dollars for instructor training to keep up with the technological advancement. c) Increase supporting material to go with each program. d) Upgrade current software. e) Add more Vex Robots. f) Add more Vex parts to build other challenges.
Timeline for Implementation	September 2011
Shared Involvement for Implementation	Tech Ed Staff Administration

Video Production Program

Staff Recommendations

Overall Planning for Improvement

From the results of external evaluations, survey results, site visits, and advisory committee meetings, the staff has identified the following recommendations:

STRATEGIC INITIATIVE 1 – STUDENT ACHIEVEMENT & LEARNING	
ISSUE 1.1	Classroom Instruction
Recommendations	a) Students need better understanding of terminology b) Curriculum needs to include preproduction planning & story boarding
Timeline for Implementation	September of 2011
Shared Involvement for Implementation	
Action Taken to Date	
ISSUE 1.2	Career Relevance and/or Industry Trends
Recommendations	a) Arrange for guest speakers to present to the class. b) Add field trips to a local news station as part of the course.
Timeline for Implementation	September 2011 and should continue each and every year
Shared Involvement for Implementation	News stations
Action Taken to Date	
ISSUE 1.3	Gender and Recruitment
Recommendations	Promote these classes to girls with the assistance of the Guidance Department.
Timeline for Implementation	September 2011 and should continue each and every year until there is an equal number of boys to girls in the class.
Shared Involvement for Implementation	Guidance

Action Taken to Date	
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STRATEGIC INITIATIVE 4 – FINANCE, FACILITIES, AND RESOURCES	
ISSUE 4.1	Facilities & Equipment, Supplies, Materials, Resources
Recommendations	<ul style="list-style-type: none"> a) Try to utilize Photography room when open so we can use Mac computers. It will also allow access to photo studio. It will also allow a us to use green screen b) Budget time and dollars for instructor training to keep up with the technological advancement c) Increase supporting material to go with each program (books) d) Upgrade current software
Timeline for Implementation	September of 2011 and ongoing
Shared Involvement for Implementation	

Building Construction, Welding & Machine Shop Program Staff Recommendations

Overall Planning for Improvement

From the results of external evaluations, survey results, site visits, and advisory committee meetings the building and construction staff has identified the following recommendations:

STRATEGIC INITIATIVE 1 – STUDENT ACHIEVEMENT & LEARNING	
ISSUE 1.1	Curriculum and Program Design
Recommendations	<ul style="list-style-type: none"> a) Add a variety of project choices in Building Construction I. b) Improve instruction dealing with “Print Reading” and “Project Planning.” c) Students should have more exposure to TIG welding as identified by current industry trends. d) The Air Carbon Arc Cutting and Gouging process should be incorporated into welding curriculum.
Timeline for Implementation	2011-2013
Shared Involvement for Implementation	Collaboration with department members, industry professionals, and post-secondary educators
Action Taken to Date	
ISSUE 1.2	Career Relevance and/or Industry Trends
Recommendations	<ul style="list-style-type: none"> a) Improve career awareness and relevance in Hot Metals, Machine Shop, and Building Construction classes. b) Prepare curriculum that aligns with potential careers and post-secondary education in the local area
Timeline for Implementation	2011-2012
Shared Involvement for Implementation	Collaboration with department members, industry professionals, and post-secondary educators
Action Taken to Date	

STRATEGIC INITIATIVE 2 - COMMUNITY INVOLVEMENT	
ISSUE 2.1	Community Connections
Recommendations	a) Communicate more frequently with Advisory Committee about specific industry trends and expectations of incoming employees/students. b) Develop a consistent meeting schedule.
Timeline for Implementation	2011-2013
Shared Involvement for Implementation	Advisory Committee Members, department members, administration
Action Taken to Date	
STRATEGIC INITIATIVE 4 - - FINANCE, FACILITITES, AND RESOURCES	
ISSUE 4.1	Facility/Lab/Classroom Utilization
Recommendations	a) Reorganize space in the Metals Lab to allow for more project storage and work space. b) Acquire a construction trailer for better organization of tool storage and minimal loss of classroom/jobsite instruction time. c) Evaluate the Metals Lab ventilation system by a professional to create or maintain a healthy learning environment for students and staff. d) Improve Metal Shop Layout including updating welding, shearing, bending, and CNC machines.
Timeline for Implementation	2011-2018
Shared Involvement for Implementation	Communication with industry professionals, Technology Education Staff, and local businesses.
Action Taken to Date	
ISSUE 4.2	Equipment, Supplies, Materials, Resources
Recommendations	a) Add tools and equipment to the construction lab to aid students with Building Construction I curriculum. b) Replace inconsistent welding machines and drill presses. c) Update CNC machining process to current industry trends. d) Improve Building Construction II/Advance Construction tool/equipment storage/transportation.
Timeline for Implementation	2011-2018
Shared Involvement for Implementation	Communication with industry professionals, Technology Education Staff, and local businesses.
Action Taken to Date	

Woodworking Program Staff Recommendations Overall Planning for Improvement

From the results of external evaluations, survey results, site visits, and advisory committee meetings the woodworking staff has identified the following recommendations:

STRATEGIC INITIATIVE 1 – STUDENT ACHIEVEMENT & LEARNING	
ISSUE 1.1	Curriculum and Program Design
Recommendations	a) Improve instruction dealing with “cabinet door processes. b) Students should have more exposure to door production. c) Students should have more time to build higher end products.
Timeline for Implementation	2011-2013
Shared Involvement for Implementation	Collaboration with department members, industry professionals, and post-secondary educators
Action Taken to Date	
ISSUES 1.2	Career Relevance and/or Industry Trends
Recommendations	a) Improve career awareness and relevance in Woodworking classes. b) Prepare curriculum that aligns with potential careers and post-secondary education in the local area
Timeline for Implementation	2011-2012
Shared Involvement for Implementation	Collaboration with department members, industry professionals, and post-secondary educators
Action Taken to Date	

STRATEGIC INITIATIVE 2 – COMMUNITY INVOLVEMENT	
ISSUE 2.1	Community Connections
Recommendations	a) Communicate more frequently with Advisory Committee about specific industry trends and expectations of incoming employees/students. b) Develop a consistent meeting schedule.
Timeline for Implementation	2011-2013
Shared Involvement for Implementation	Advisory Committee Members, department members, administration
Action Taken to Date	
STRATEGIC INITIATIVE 4 – FINANCE, FACILITIES, AND RESOURCES	
ISSUE 4.1	Facility/Lab/Classroom Utilization
Recommendations	The Woodworking Lab ventilation system should be evaluated by a professional to create or maintain a healthy learning environment for students and staff; suitable solutions should be developed if needed.
Timeline for Implementation	2011-2013
Shared Involvement for Implementation	Advisory committee
Action Taken to Date	A feed system and shaper was donated along with the necessary attachments to produce cabinet doors
ISSUE 4.2	Equipment, Supplies, Materials, Resources
Recommendations	a) A purchase of a shaper and feed system and the necessary tooling b) Replace Sander with a wide belt sander
Timeline for Implementation	2011-2018
Shared Involvement for Implementation	Communication with industry professionals, Technology Education Staff, and local businesses.
Action Taken to Date	A feed system and shaper was donated along with the necessary attachments to produce cabinet doors

Automotive Program Staff Recommendations Overall Planning for Improvement

From the results of external evaluations, survey results, site visits, and advisory committee meetings the automotive staff has identified the following recommendations:

STRATEGIC INITIATIVE 1 – STUDENT ACHIEVEMENT & LEARNING	
ISSUE 1.1	Curriculum and Program Design
Recommendations	a) Add Electrical and electronics curriculum and instruction b) Upgrade audio and visual instruction facilities c) Implement Electrical Lab activities in courses
Timeline for Implementation	2011-2012
Shared involvement for implementation	Collaboration with department members, industry, professionals and post-secondary educators.
Action Taken to Date	
ISSUE 1.2	Career Relevance and or Industry Trends
Recommendations	a) Improve career awareness and relevance in automotive and other mechanical careers b) Prepare curriculum that aligns with potential careers and post-secondary education in the local area
Shared Involvement for Implementation	Communication with industry professionals, technology education Staff, and local businesses.
Timeline for Implementation	2011-2012
Action Taken to Date	

STRATEGIC INITIATIVE 2 - COMMUNITY INVOLVEMENT	
ISSUE 2.1	Community Connections
Recommendations	a) Hold annual advisory committee meetings b) Adjust the program to advisory suggestions c) Develop a consistent meeting schedule
Timeline for Implementation	2011-2012
Shared Involvement for Implementation	Advisory Committee Members, department members, administration
Action Taken to Date	
STRATEGIC INITIATIVE 4 - - FINANCE, FACILITITES, AND RESOURCES	
ISSUE 4.1	Facility/Lab/Classroom Utilization
Recommendations	a) Install projector in classroom b) Upgrade CD player c) Install and upgrade computers in class room d) Upgrade automotive scanner e) Repair and maintain equipment in auto shop f) Change tables more suitable for instruction in the class room
Timeline for Implementation	2011-2013
Shared Involvement for Implementation	Communication with industry professionals, Technology Education Staff, and local businesses.
Action Taken to Date	
ISSUE 4.2	Equipment , Supplies, Materials, Resources
Recommendations	a) Add tools and equipment to the Automotive Lab b) Replace tire balancer and tire changer c) Add a drive on hoist d) Improve tool equipment storage
Timeline	2011-2013
Shared Involvement	Collaboration with department members, industry professionals, and postsecondary educators.
Action Taken to Date	

Agricultural & Natural Resource Education Curriculum



The Agricultural and Natural Resource Curriculum encompasses production of food, fiber, wood products, horticultural crops, and other plant and animal products and including: -Practical knowledge about caring for animals, especially household pets -Understanding the impact of agriculture on the environment -Having practical knowledge about lawns, gardens, and recreational areas -Financing, processing, marketing, and distribution of agricultural products -Health, nutrition, and food consumption -The application of science -The use and conservation of land and water resources - Development and maintenance of recreational resources

Course Offerings & Program Description

The focus of Agriscience coursework is exploratory in nature providing students with knowledge, experience, and hands-on training. Students will learn to apply academic principles that can be put to use in their personal lives. These are project-based courses that will enable students to make educated career choices.

Holmen High School ANR Department Course Offerings

Level 1

Classes which are Introductory in the Agriscience Curriculum

Animal Health

Greenhouse

Fisheries

Horse & Small
Animal

Landscape Design

Wildlife Ecology

Level 2

**Classes which are suggested for grades
10-12 who have taken an Introductory Course**

Dairy Industries

Advanced Fish
and Wildlife
(prerequisite)

Forestry

Leadership
Building & Team
Building

Agri-business
Co-op

Level 3

Classes are offered for college credit and courses with prerequisite

Animal Science
(prerequisite)

Design Your Own
Golf Course

Greenhouse II
Landscape II
(prerequisite)

Inquiry Science Based Instruction through a Hands Approach

- 4 Curriculum Strands: Animal Resources, Plant Resources, Environmental Resources and Leadership Resources.
- 4 classes are offered for Advanced Placement in college – Design Your Own Golf Course, Animal Science, Greenhouse I and Greenhouse II .
- 3 classes are currently being submitted to the Department of Public Instruction for High School Science Equivalency Credit. Animal Health, Greenhouse I and Animal Science.
- Facilities include: Greenhouse, Animal Lab, Food Science Lab, Aquaculture Lab, Indoor Putting Green, Indoor Golf Hitting Cage, Embryology Incubator and Technology Centered Classroom.
- Wireless computer lab – 20 laptops (only wireless lab in the High School)
- Classroom Technology includes: Interactive White Board, Flat Panel TV, LCD Projector, Digital Microscopes, USB Probes, Document Camera and Wii Console.
- Classroom Activities Include: Animal Physicals, Floral Design, Duck Identification, Fishing Rod Building, Taxidermy (fish and small game) Dairy Foods Identification, Beef Jerky Lab, Fish Lure Making, Game Call Design ,Boone and Crocket Antler Scoring, Tree identification, Poultry Parts Lab, Incubation, Horsemanship, Parliamentary Procedure, Consensus Activity, Golf Club Building, Greenhouse Operations (planting, repotting and cuttings) and many more Hands On activities.

Holmen School District

Agriscience Department

Wisconsin Department of Public Instruction - Career Clusters and Pathways

CLUSTER: **AGRICULTURE, FOOD AND NATURAL RESOURCES (AFNR)**

PATHWAY: **Animal Systems (AS)**

Pathway Content Standard: The student will demonstrate competence in the application of scientific principles and practices to the production and management of animals.

Courses Related to cluster/pathway with descriptions:

- Animal Health – Level 1

This class provides students with experience in the area of small animal health care and management. Topics included will be careers, law and ethics, administrative duties, animal housing, medical terminology, animal care, handling of small animals, nutrition and animal training. Careers will continually be explored throughout the course. Lab animals will be provided as needed.

- Horse and Small Animal – Level 1

This course is designed to acquaint students with the industry related to horses and small animals used as pets. Topics to be discussed include careers, breeds of animals, medical care, food and toys animals require, health concerns, housing, and animal industry technology. Hands-on and lab-based activities will be emphasized. Lab animals will be provided as needed.

- Dairy Industries – Level 2

This course deals with the dairy science and livestock industry. Topics include animal selection facility planning, product production, and animal management.

Animal product processing with the use of the current technology and tours of various agriculture enterprises.

- Animal Science – Level 3 (College credit is available for this course)

Students will explore the scientific management of animals. Areas of study will include animal diseases, genetics, reproduction, genetic engineering, and biotechnology.

Animal Systems Content Standard: The student will demonstrate competence in the application of scientific principles and practices to the production and management of animals.

Level I			Level II	Level III	National Academic Standard Grade-Level Expectation
AS.01. Essential Learning Outcome: Examine the components, historical development, global implications and future trends of the animal systems industry.					
AS.01.01. Student Assessment Expectation: Evaluate the development and implications of animal origin, domestication and distribution.					Science: C3 Social Studies: 7h
AS.01.01.01.a. Identify the origin, significance, distribution and domestication of animal species.	AS.01.01.01.b. Evaluate and describe characteristics of animals that developed in response to the animals' environment and led to their domestication.	AS.01.01.01.c. Predict adaptations of animals to production practices and environments.			
AS.01.01.02.a. Define major components of the animal industry.	AS.01.01.02.b. Outline the development of the animal industry and the resulting products, services and careers.	AS.01.01.02.c. Predict trends and implications of future development of the animal systems industry.			
AS.02. Essential Learning Outcome: Classify, evaluate, select and manage animals based on anatomical and physiological characteristics.					
AS.02.01. Student Assessment Expectation: Classify animals according to hierarchical taxonomy and agricultural use.					Science: C3
AS.02.01.01.a. Explain the importance of the binomial system of nomenclature.	AS.02.01.01.b. Explain how animals are classified using Linnaeus's taxonomical classification system.	AS.02.01.01.c. Classify animals according to the taxonomical classification system.			
AS.02.01.02.a. Identify major animal species by common and scientific names.	AS.02.01.02.b. Compare and contrast the hierarchical classification of the major agricultural animal species.	AS.02.01.02.c. Appraise and evaluate the economic value of animals for various applications in the agriculture industry.			
AS.02.02. Student Assessment Expectation: Apply principles of comparative anatomy and physiology to uses within various animal systems.					Science: C1, C5 and F2
AS.02.02.01.a. Identify basic characteristics of animal cells, tissues, organs and body systems.	AS.02.02.01.b. Compare and contrast animal cells, tissues, organs and body systems.	AS.02.02.01.c. Explain how the components and systems of animal anatomy and physiology relate to the production and use of animals.			

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
AS.02.02.02.a. Diagram a typical animal cell and identify the organelles.	AS.02.02.02.b. Describe the functions of animal cell structures.	AS.02.02.02.c. Describe the molecular makeup of animal cells and its importance in animal production and management.	
AS.02.02.03.a. Describe the basic functions of animal cells in growth and reproduction.	AS.02.02.03.b. Detail the processes of meiosis and mitosis in animal growth, development, health and reproduction.	AS.02.02.03.c. Explain the application of the processes of meiosis and mitosis to animal growth, development, health and reproduction.	
AS.02.02.04.a. Describe the properties, locations, functions and types of animal tissues.	AS.02.02.04.b. Explain the relationship of animal tissues to growth, performance and health.	AS.02.02.04.c. Explain the importance and uses made of animal tissues in the agriculture industry.	
AS.02.02.05.a. Describe the properties, locations, functions and types of animal organs.	AS.02.02.05.b. Compare and contrast organ types and functions among animal species.	AS.02.02.05.c. Relate the importance of animal organs to the health, growth and reproduction of animals.	
AS.02.02.06.a. Describe the functions of the animal body systems and system components.	AS.02.02.06.b. Compare and contrast body systems and system adaptations between animal species.	AS.02.02.06.c. Explain the impact of animal body systems on performance, health, growth and reproduction.	
AS.02.03. Student Assessment Expectation: Select animals for specific purposes and maximum performance based on anatomy and physiology.			Science: C5
AS.02.03.01.a. Identify ways an animal's health can be affected by anatomical and physiological disorders.	AS.02.03.01.b. Compare and contrast desirable anatomical and physiological characteristics of animals within and between species.	AS.02.03.01.c. Evaluate and select animals to maximize performance based on anatomical and physiological characteristics that affect health, growth and reproduction.	
AS.02.03.02.a. Create a program to develop an animal to its highest potential performance.	AS.02.03.02.b. Assess an animal to determine if it has reached its optimal performance level based on anatomical and physiological characteristics.	AS.02.03.02.c. Develop efficient procedures to produce consistently high-quality animals, well suited for their intended purposes.	
AS.03. Essential Learning Outcome: Provide for the proper health care of animals.			
AS.03.01. Student Assessment Expectation: Prescribe and implement a prevention and treatment program for animal diseases, parasites and other disorders.			Science: C4, F1 and F5
AS.03.01.01.a. Explain methods of determining animal health and disorders.	AS.03.01.01.b. Perform simple health-check evaluations on animals.	AS.03.01.01.c. Perform diagnostic tests to detect health problems in animals.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
AS.03.01.02.a. Identify common diseases, parasites and physiological disorders that affect animals.	AS.03.01.02.b. Diagnose illnesses and disorders of animals based on symptoms and problems caused by diseases, parasites and physiological disorders.	AS.03.01.02.c. Treat common diseases, parasites and physiological disorders of animals.	
AS.03.01.03.a. Explain characteristics of causative agents and vectors of diseases and disorders in animals.	AS.03.01.03.b. Evaluate preventive measures for controlling and limiting the spread of diseases, parasites and disorders among animals.	AS.03.01.03.c. Design and implement a health maintenance and disease and disorder prevention plan for animals in their natural and/or confined environments.	
AS.03.01.04.a. Explain the clinical significance of common considerations in veterinary treatments, such as aseptic techniques.	AS.03.01.04.b. Prepare animals, facilities and equipment for surgical and nonsurgical veterinary treatments and procedures.	AS.03.01.04.c. Perform surgical and nonsurgical veterinary treatments and procedures in animal health care.	
AS.03.01.05.a. Identify and describe zoonotic diseases.	AS.03.01.05.b. Explain the health risk of zoonotic diseases to humans and their historical significance and future implications.	AS.03.01.05.c. Implement zoonotic disease prevention methods and procedures for the safe handling and treatment of animals.	
AS.03.02. Student Assessment Expectation : Provide for the biosecurity of agricultural animals and production facilities.			Science: F5 and F6 Social Studies: 9d
AS.03.02.01.a. Explain the importance of biosecurity to the animal industry.	AS.03.02.01.b. Discuss procedures at the local, state and national levels to ensure biosecurity of the animal industry.	AS.03.02.01.c. Implement a biosecurity plan for an animal production operation.	
AS.04. Essential Learning Outcome: Apply principles of animal nutrition to ensure the proper growth, development, reproduction and economic production of animals.			
AS.04.01. Student Assessment Expectation: Formulate feed rations to provide for the nutritional needs of animals.			Math: 1C and 6B Science: A4 and C5
AS.04.01.01.a. Compare and contrast common types of feedstuffs and the roles they play in the diets of animals.	AS.04.01.01.b. Determine the relative nutritional value of feedstuffs by evaluating their general quality and condition.	AS.04.01.01.c. Select appropriate feedstuffs for animals based on factors such as economics, digestive system and nutritional needs.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
AS.04.01.02.a. Explain the importance of a balanced ration for animals.	AS.04.01.02.b. Appraise the adequacy of feed rations using data from the analysis of feedstuffs, animal requirements and performance.	AS.04.01.02.c. Formulate animal feeds based on nutritional requirements, using feed ingredients for maximum nutrition and optimal economic production.	
AS.04.02. Student Assessment Expectation: Prescribe and administer animal feed additives and growth promotants in animal production.			Science: C5
AS.04.02.01.a. Explain the purpose and benefits of feed additives and growth promotants in animal production.	AS.04.02.01.b. Discuss how feed additives and growth promotants are administered and the precautions that should be taken.	AS.04.02.01.c. Prescribe and administer feed additives and growth promotants.	
AS.05. Essential Learning Outcome: Evaluate and select animals based on scientific principles of animal production.			
AS.05.01. Student Assessment Expectation: Evaluate the male and female reproductive systems in selecting animals.			Science: C1 and C3
AS.05.01.01.a. Explain the male and female reproductive organs of the major animal species.	AS.05.01.01.b. Describe the functions of major organs in the male and female reproductive systems.	AS.05.01.01.c. Select breeding animals based on characteristics of the reproductive organs.	
AS.05.02. Student Assessment Expectation: Evaluate animals for breeding readiness and soundness.			Science: C6
AS.05.02.01.a. Explain how age, size, life cycle, maturity level and health status affect the reproductive efficiency of male and female animals.	AS.05.02.01.b. Summarize factors that lead to reproductive maturity.	AS.05.02.01.c. Evaluate and select animals for reproductive readiness.	
AS.05.02.02.a. Discuss the importance of efficient and economic reproduction in animals.	AS.05.02.02.b. Evaluate reproductive problems that occur in animals.	AS.05.02.02.c. Treat or cull animals with reproductive problems.	
AS.05.03. Student Assessment Expectation: Apply scientific principles in the selection and breeding of animals.			Math: 6C Science: A4, C2 and E2
AS.05.03.01.a. Explain genetic inheritance in agricultural animals.	AS.05.03.01.b. Explain the advantages of using genetically superior animals in the production of animals and animal products.	AS.05.03.01.c. Select a breeding system based on the principles of genetics.	
AS.05.03.02.a. Define natural and artificial breeding methods.	AS.05.03.02.b. Explain the processes of natural and artificial breeding methods.	AS.05.03.02.c. Select animal breeding methods based on reproductive and economic efficiency.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
AS.05.03.03.a. Explain the use of quantitative breeding values (e.g., EPDs) in the selection of genetically superior breeding stock.	AS.05.03.03.b. Compare and contrast quantitative breeding value differences between genetically superior animals and animals of average genetic value.	AS.05.03.03.c. Select animals based on quantitative breeding values for specific characteristics.	
AS.05.03.04.a. Explain the advantages of major reproductive management practices, including estrous synchronization, superovulation, flushing and embryo transfer.	AS.05.03.04.b. Explain the processes of major reproductive management practices, including estrous synchronization, superovulation, flushing and embryo transfer.	AS.05.03.04.c. Perform procedures for estrous synchronization, superovulation, flushing, embryo transfer and other reproductive management practices.	
AS.05.03.05.a. Discuss the uses and advantages and disadvantages of natural breeding and artificial insemination.	AS.05.03.05.b. Explain the materials, methods and processes of artificial insemination.	AS.05.03.05.c. Demonstrate artificial insemination techniques.	
AS.06. Essential Learning Outcome: Prepare and implement animal handling procedures for the safety of animals, producers and consumers of animal products.			
AS.06.01. Student Assessment Expectation: Demonstrate safe animal handling and management techniques.			Science: C6
AS.06.01.01.a. Discuss the dangers involved in working with animals.	AS.06.01.01.b. Outline safety procedures for working with animals by species.	AS.06.01.01.c. Interpret animal behaviors and execute protocols for safe handling of animals.	
AS.06.01.02.a. Explain the implications of animal welfare and animal rights for animal agriculture.	AS.06.01.02.b. Design programs that assure the welfare of animals and prevent abuse or mistreatment.	AS.06.01.02.c. Implement quality-assurance programs and procedures for animal production.	
AS.06.02. Student Assessment Expectation: Implement procedures to ensure that animal products are safe.			Science: F1 and F5
AS.06.02.01.a. Identify animal production practices that could pose health risks or are considered to pose risks by some.	AS.06.02.01.b. Discuss consumer concerns with animal production practices relative to human health.	AS.06.02.01.c. Implement a program to assure the safety of animal products.	
AS.06.02.02.a. Describe how animal identification systems can track an animal's location, nutrition requirements, production progress and changes in health.	AS.06.02.02.b. Explain why animal trace-back capability, using individual animal and farm identification systems, is important to producers and consumers.	AS.06.02.02.c. Implement an animal and/or premises identification program.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
AS.07. Essential Learning Outcome: Select animal facilities and equipment that provide for the safe and efficient production, housing and handling of animals.			
AS.07.01. Student Assessment Expectation: Design animal housing, equipment and handling facilities for the major systems of animal production.			Science: C6 and F6
AS.07.01.01.a. Identify facilities needed to house and produce each animal species safely and efficiently.	AS.07.01.01.b. Critique designs for an animal facility and prescribe alternative layouts and adjustments for the safe and efficient use of the facility.	AS.07.01.01.c. Design an animal facility, focusing on animal requirements, efficiency, safety and ease of handling.	
AS.07.01.02.a. Identify equipment and handling facilities used in modern animal production.	AS.07.01.02.b. Explain how modern equipment and handling facilities enhance the safe and economic production of animals.	AS.07.01.02.c. Select equipment and implement animal handling procedures and improvements to enhance production efficiency.	
AS.07.02. Student Assessment Expectation: Comply with government regulations and safety standards for facilities used in animal production.			Science: F5
AS.07.02.01.a. List the general standards (e.g., environmental, zoning, construction) that must be met in facilities for animal production.	AS.07.02.01.b. Evaluate an animal facility to determine if standards have been met.	AS.07.02.01.c. Design a facility that meets standards for the legal, safe, ethical and efficient production of animals.	
AS.08. Essential Learning Outcome: Analyze environmental factors associated with animal production.			
AS.08.01. Student Assessment Expectation: Reduce the effects of animal production on the environment.			Science: C4 and F4
AS.08.01.01.a. Evaluate the effects of animal agriculture on the environment.	AS.08.01.01.b. Outline methods of reducing the effects of animal agriculture on the environment.	AS.08.01.01.c. Implement measures to reduce the impact of animal agriculture on the environment.	
AS.08.02. Student Assessment Expectation: Evaluate the effects of environmental conditions on animals.			Science: C6 and F4
AS.08.02.01.a. Identify optimal environmental conditions for animals.	AS.08.02.01.b. Describe the effects of environmental conditions on animal populations and performance.	AS.08.02.01.c. Establish and maintain favorable environmental conditions for animal growth and performance.	

Holmen School District

Agriscience Department

Wisconsin Department of Public Instruction - Career Clusters and Pathways

CLUSTER: **AGRICULTURE, FOOD AND NATURAL RESOURCES (AFNR)**

PATHWAY: **Plant Systems (PS)**

Pathway Content Standard: The student will demonstrate competence in the application of scientific principles and techniques to the production and management of plants.

Courses Related to cluster/pathway with descriptions:

- Greenhouse – Level 1

Students will learn about basic plant parts and their functions, identify horticulture plants, soil, and plant growth media, and propagate plants. Students will investigate careers in the horticulture field while working in the school greenhouse.

College credit is available for this course.

- Landscape Design – Level 1

Students will learn about landscape design principles and draw landscape plans.

Students will also develop a working landscape model based on their own creativity.

Students will build a landscape in the classroom (backyard pond), as well as construct plans for local homeowners.

- Greenhouse/Landscape II – Level 2

This course will cover opportunities in green-related careers, identifying flower varieties, the study of topiary art, bedding plant production and development of floral arrangements and landscape design. Projects include landscaping, working with elementary students, and floral design projects in addition to running the school's 700 square foot greenhouse.

College credit is available for this course.

- Design Your Own Golf Course – Level 3

Design a scale model of a golf course using various modeling materials.
Completed models/designs will be entered in the La Crosse golf show for display. **College credit is available for this course.**

Plant Systems Content Standard: The student will demonstrate competence in the application of scientific principles and techniques to the production and management of plants.

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
PS.01. Essential Learning Outcome: Apply knowledge of plant classification, plant anatomy and plant physiology to the production and management of plants.			
PS.01.01. Student Assessment Expectations: Classify agricultural plants according to taxonomy systems.			Science: C3
PS.01.01.01.a. Explain systems used to classify plants.	PS.01.01.01.b. Compare and contrast the hierarchical classification of agricultural plants.	PS.01.01.01.c. Classify agricultural plants according to the hierarchical classification system, life cycles, plant use and as monocotyledons or dicotyledons.	
PS.01.01.02.a. Describe the morphological characteristics used to identify agricultural plants.	PS.01.01.02.b. Identify agriculturally important plants by common names.	PS.01.01.02.c. Identify agriculturally important plants by scientific names.	
PS.01.02. Student Assessment Expectation: Apply knowledge of plant anatomy and the functions of plant structures to activities associated with plant systems.			Science: B6, C3 and C5
PS.01.02.01.a. Diagram a typical plant cell and identify plant cell organelles and their functions.	PS.01.02.01.b. Compare and contrast mitosis and meiosis.	PS.01.02.01.c. Apply the knowledge of cell differentiation and the functions of the major types of cells to plant systems.	
PS.01.02.02.a. Identify the components, the types and the functions of plant roots.	PS.01.02.02.b. Identify root tissues and explain the pathway of water and nutrients into and through the root tissues.	PS.01.02.02.c. Relate the active and passive transport of minerals into and through the root system to plant nutrition.	
PS.01.02.03.a. Identify the components and the functions of plant stems.	PS.01.02.03.b. Describe the processes of translocation.	PS.01.02.03.c. Apply concepts associated with translocation to the management of plants.	
PS.01.02.04.a. Discuss leaf morphology and the functions of leaves.	PS.01.02.04.b. Explain how leaves capture light energy and allow for the exchange of gases.	PS.01.02.04.c. Explain the relationships between leaf structure and functions and plant management practices.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
PS.01.02.05.a. Identify the components of a flower, the functions of a flower and the functions of flower components.	PS.01.02.05.b. Identify the different types of flowers and flower forms.	PS.01.02.05.c. Apply the knowledge of flower structures to plant breeding, production and use.	
PS.01.02.06.a. Explain the functions and components of seeds and fruit.	PS.01.02.06.b. Identify the major types of fruit.	PS.01.02.06.c. Apply the knowledge of seed and fruit structures to plant culture and use.	
PS.01.03. Student Assessment Expectation: Apply knowledge of plant physiology and energy conversion to plant systems.			Science: B6 and C5
PS.01.03.01.a. Explain the basic process of photosynthesis and its importance to life on Earth.	PS.01.03.01.b. Explain requirements necessary for photosynthesis to occur and identify the products and byproducts of photosynthesis.	PS.01.03.01.c. Explain the light-dependent and light-independent reactions that occur during photosynthesis and apply the knowledge to plant management.	
PS.01.03.02.a. Explain cellular respiration and its importance to plant life.	PS.01.03.02.b. Explain factors that affect cellular respiration and identify the products and byproducts of cellular respiration.	PS.01.03.02.c. Explain the four stages of aerobic respiration and relate cellular respiration to plant growth, crop management and post-harvest handling.	
PS.01.03.03.a. Define primary growth and the role of the apical meristem.	PS.01.03.03.b. Explain the process of secondary plant growth.	PS.01.03.03.c. Relate the principles of primary and secondary growth to plant systems.	
PS.01.03.04.a. Identify the five groups of naturally occurring plant hormones and synthetic plant growth regulators.	PS.01.03.04.b. Identify the plant responses to plant growth regulators and different forms of tropism.	PS.01.03.04.c. Select plant growth regulators to produce desired responses from plants.	
PS.02. Essential Learning Outcome: Prepare and implement a plant management plan that addresses the influence of environmental factors, nutrients and soil on plant growth.			
PS.02.01. Student Assessment Expectation: Determine the influence of environmental factors on plant growth.			Science: C6
PS.02.01.01.a. Describe the qualities of light that affect plant growth.	PS.02.01.01.b. Describe plant responses to light color, intensity and duration.	PS.02.01.01.c. Evaluate plant responses to varied light color, intensity and duration.	
PS.02.01.02.a. Describe the effects air, temperature and water have on plant metabolism and growth.	PS.02.01.02.b. Determine the optimal air, temperature and water conditions for plant growth.	PS.02.01.02.c. Design, implement and evaluate a plan to maintain optimal conditions for plant growth.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
PS.02.02. Student Assessment Expectation: Prepare growing media for use in plant systems.			Science: B2
PS.02.02.01.a. Identify the major components of growing media and describe how growing media support plant growth.	PS.02.02.01.b. Describe the physical characteristics of growing media and explain the influence they have on plant growth.	PS.02.02.01.c. Formulate and prepare growing media for specific plants or crops.	
PS.02.02.02.a. Identify the categories of soil water.	PS.02.02.02.b. Discuss how soil drainage and water-holding capacity can be improved.	PS.02.02.02.c. Determine the hydraulic conductivity for soil and how the results influence irrigation practices.	
PS.02.03. Student Assessment Expectation: Develop and implement a fertilization plan for specific plants or crops.			Math: 4B Science: A2
PS.02.03.01.a. Identify the essential nutrients for plant growth and development and their major functions.	PS.02.03.01.b. Describe nutrient deficiency symptoms and recognize environmental causes of nutrient deficiencies.	PS.02.03.01.c. Monitor plants for signs of nutrient deficiencies and prepare a scouting report.	
PS.02.03.02.a. Discuss the influence of pH and cation exchange capacity on the availability of nutrients.	PS.02.03.02.b. Contrast pH and cation exchange capacity between mineral soil and soilless growing media.	PS.02.03.02.c. Adjust the pH of growing media.	
PS.02.03.03.a. Collect soil and plant tissue samples for testing and interpret the test results.	PS.02.03.03.b. Determine the nutrient content of soil using appropriate laboratory procedures and prescribe fertilization based on results.	PS.02.03.03.c. Determine the nutrient content of plant tissue samples using appropriate laboratory procedures and prescribe fertilization based on results.	
PS.02.03.04.a. Identify fertilizer sources of essential plant nutrients, explain fertilizer formulations and describe different methods of fertilizer application.	PS.02.03.04.b. Calculate the amount of fertilizer to be applied and calibrate equipment to apply the prescribed amount of fertilizer.	PS.02.03.04.c. Use variable-rate technology to apply fertilizers to meet crop nutrient needs.	
PS.03. Essential Learning Outcome: Propagate, culture and harvest plants.			
PS.03.01. Student Assessment Expectation: Demonstrate plant propagation techniques.			Science: C2
PS.03.01.01.a. Explain pollination, cross-pollination and self-pollination of flowering plants.	PS.03.01.01.b. Diagram the process of plant fertilization.	PS.03.01.01.c. Design and implement a plan to control the pollination of plants.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
PS.03.01.02.a. Demonstrate sowing techniques and provide favorable conditions for seed germination.	PS.03.01.02.b. Handle seed to overcome seed dormancy mechanisms and to maintain seed viability and vigor.	PS.03.01.02.c. Conduct tests associated with seed germination rates, viability and vigor.	
PS.03.01.03.a. Describe optimal conditions for asexual propagation and demonstrate techniques used to propagate plants by cuttings, division, separation and layering.	PS.03.01.03.b. Demonstrate proper procedures in budding or grafting selected materials.	PS.03.01.03.c. Evaluate asexual propagation practices based on productivity and efficiency.	
PS.03.01.04.a. Define micropropagation, discuss advantages associated with the practice and outline the four main stages of the process.	PS.03.01.04.b. Demonstrate aseptic micropropagation techniques.	PS.03.01.04.c. Propagate plants by micropropagation.	
PS.03.01.05.a. Explain the principles behind recombinant DNA technology and the basic steps in the process.	PS.03.01.05.b. Give examples of the risks and advantages associated with genetically modified plants.	PS.03.01.05.c. Evaluate the performance of genetically modified crops.	
PS.03.02. Student Assessment Expectation: Develop and implement a plant management plan for crop production.			Science: C5 and C6 Language Arts: 7
PS.03.02.01.a. Explain the importance of starting with pest-and disease-free propagation material.	PS.03.02.01.b. Inspect propagation material for evidence of pests or disease.	PS.03.02.01.c. Produce pest-and disease-free propagation material.	
PS.03.02.02.a. Explain the reasons for preparing growing media before planting.	PS.03.02.02.b. Prepare soil for planting with the addition of amendments.	PS.03.02.02.c. Prepare growing media for planting.	
PS.03.02.03.a. Demonstrate proper planting procedures and post-planting care.	PS.03.02.03.b. Apply pre-plant treatments required of seeds and plants and evaluate the results.	PS.03.02.03.c. Operate mechanized planting equipment.	
PS.03.02.04.a. Observe and record environmental conditions during the germination, growth and development of a crop.	PS.03.02.04.b. Monitor the progress of plantings and determine the need to adjust environmental conditions.	PS.03.02.04.c. Prepare and implement a plant production schedule based on predicted environmental conditions.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
PS.03.02.05.a. Explain the reasons for controlling plant growth.	PS.03.02.05.b. Demonstrate proper techniques to control and manage plant growth through mechanical, cultural or chemical means.	PS.03.02.05.c. Create and implement a plan to control and manage plant growth.	
PS.03.03. Student Assessment Expectation: Develop and implement a plan for integrated pest management.			Science: C4 and C6 Language Arts: 7
PS.03.03.01.a. Identify types of plant pests and disorders.	PS.03.03.01.b. Identify major local weeds, insect pests and infectious and noninfectious plant diseases.	PS.03.03.01.c. Design and implement a crop scouting program.	
PS.03.03.02.a. Describe damage caused by plant pests and diseases.	PS.03.03.02.b. Diagram the life cycles of major plant pests and diseases.	PS.03.03.02.c. Predict pest and disease problems based on environmental conditions and life cycles.	
PS.03.03.03.a. Describe pest control strategies associated with integrated pest management.	PS.03.03.03.b. Describe types of pesticide controls and formulations.	PS.03.03.03.c. Employ pest management strategies to manage pest populations, assess the effectiveness of the plan and adjust the plan as needed.	
PS.03.03.04.a. Explain risks and benefits associated with the materials and methods used in plant pest management.	PS.03.03.04.b. Explain procedures for the safe handling, use and storage of pesticides.	PS.03.03.04.c. Evaluate environmental and consumer concerns regarding pest management strategies.	
PS.03.04. Student Assessment Expectation: Apply principles and practices of sustainable agriculture to plant production.			Science: F3, F4 and F6
PS.03.04.01.a. Explain sustainable agriculture and objectives associated with the strategy.	PS.03.04.01.b. Describe sustainable agriculture practices and compare the ecological effects of traditional agricultural practices with those of sustainable agriculture.	PS.03.04.01.c. Prepare and implement a plan for an agricultural enterprise that involves practices in support of sustainable agriculture.	
PS.03.05. Student Assessment Expectation: Harvest, handle and store crops.			Science: F5
PS.03.05.01.a. Identify harvesting methods and harvesting equipment.	PS.03.05.01.b. Assess the stage of growth to determine crop maturity or salability and demonstrate proper harvesting techniques.	PS.03.05.01.c. Operate mechanized harvesting equipment.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
PS.03.05.02.a. Explain reasons for calculating crop yield and loss.	PS.03.05.02.b. Evaluate crop yield and loss data.	PS.03.05.02.c. Implement plans to reduce crop loss.	
PS.03.05.03.a. Identify storage methods for plants and plant products.	PS.03.05.03.b. Explain the proper conditions to maintain the quality of plants and plant products held in storage.	PS.03.05.03.c. Monitor environmental conditions in storage facilities for plants and plant products.	
PS.03.05.04.a. Explain the reasons for preparing plants and plant products for distribution.	PS.03.05.04.b. Demonstrate techniques for grading, handling and packaging plants and plant products for distribution.	PS.03.05.04.c. Evaluate techniques for grading, handling and packaging plants and plant products.	
PS.04. Essential Learning Outcome: Employ elements of design to enhance an environment.			
PS.04.01. Student Assessment Expectation: Create designs using plants.			Language Arts: 12
PS.04.01.01.a. Define design and identify design elements.	PS.04.01.01.b. Explain design elements of line, form, texture and color and express the visual effect each has on the viewer.	PS.04.01.01.c. Select plants, hard goods, supplies and other materials for use in a design based on a range of criteria.	
PS.04.01.02.a. Discuss the applications of art in agriculture/horticulture.	PS.04.01.02.b. Discuss principles of design that form the basis of artistic impression.	PS.04.01.02.c. Create and implement designs by following established principles of art.	

Holmen School District

Agriscience Department

Wisconsin Department of Public Instruction - Career Clusters and Pathways

CLUSTER: AGRICULTURE, FOOD AND NATURAL RESOURCES (AFNR)

PATHWAY: Natural Resource Systems (NRS)

Pathway Content Standard: The student will demonstrate competence in the application of scientific principles and techniques to the management of natural resources.

Courses Related to cluster/pathway with descriptions:

- Wildlife Ecology – Level 1

This course deals with wildlife ecology and its management. Topics include career opportunities, history of wildlife ecology, management of big game in Wisconsin, species identification, population management, carrying capacity, trophy management, measuring and recording, and career opportunities in wildlife ecology.

- Fisheries Ecology – Level 1

This course deals with the basic concepts of fish and fish management. Topics include career opportunities, history of fish management; fish species; lake, stream, and river management; lake, stream, history of aquaculture, aquatic plant and animal species, and river habitats; water quality; and marketing of fish products.

- Forestry – Level 2

Students taking this course will study forest history, ecology, and tree identification while doing hands on projects like making walking sticks and forest tools.

- Advanced Fish and Wildlife Ecology – Level 3

In this course students will create and build various items that can be used in nature. Duck calls, turkey calls, fishing rods, mammal taxidermy, snow shoes and fishing nets are all in the realm of possibilities. When each project is done a how to video will be produced to show the use of these tools in nature. This

course will require the students to be responsible for the cost of all materials used in the class. \$25- \$50.

Pathway Content Standard: The student will demonstrate competence in the application of scientific principles and techniques to the management of natural resources.

Level I			Level II	Level III	National Academic Standard Grade-Level Expectation
NRS.01. Essential Learning Outcome: Explain interrelationships between natural resources and humans necessary to conduct management activities in natural environments.					
NRS.01.01. Student Assessment Expectations: Apply knowledge of natural resource components to the management of natural resource systems.					Math: 5a Science: C4 and F3 Social Studies: 3h and 3k
NRS.01.01.01.a. Identify natural resources.			NRS.01.01.01.b. Differentiate between renewable and nonrenewable natural resources.	NRS.01.01.01.c. Research and debate one or more current issues related to the conservation or preservation of natural resources.	
NRS.01.01.02.a. Define ecosystem and related terms.			NRS.01.01.02.b. Describe the interdependence of organisms within an ecosystem.	NRS.01.01.02.c. Conduct a field study of an ecosystem, and record and document observations of species interactions.	
NRS.01.02. Student Assessment Expectations: Classify natural resources.					Science: F3
NRS.01.02.01.a. Describe morphological characteristics used to identify trees and other woody plants.			NRS.01.02.01.b. Identify trees and other woody plants.	NRS.01.02.01.c. Conduct a field inventory of trees and other woody plants, and record and document findings.	
NRS.01.02.02.a. Describe morphological characteristics used to identify herbaceous plants.			NRS.01.02.02.b. Identify herbaceous plants.	NRS.01.02.02.c. Conduct a field inventory of herbaceous plants, and record and document findings.	
NRS.01.02.03.a. Describe morphological characteristics used to identify wildlife and fish species.			NRS.01.02.03.b. Identify wildlife and fish species.	NRS.01.02.03.c. Conduct a field inventory of wildlife and fish species, and record and document findings.	
NRS.01.02.04.a. Describe morphological characteristics used to identify aquatic species.			NRS.01.02.04.b. Identify aquatic species.	NRS.01.02.04.c. Conduct a field inventory of aquatic species, and record and document findings.	
NRS.01.02.05.a. Demonstrate techniques used to identify rock, mineral and soil types.			NRS.01.02.05.b. Identify rock, mineral and soil types.	NRS.01.02.05.c. Conduct a field inventory of rock, mineral and soil types, and record and document findings.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
NRS.02. Essential Learning Outcome: Apply scientific principles to natural resource management activities.			
NRS.02.01. Student Assessment Expectations: Develop a safety plan for work with natural resources.			Science: F3 and F5 Language Arts: 8
NRS.02.01.01.a. Identify hazards associated with the outdoor environment.	NRS.02.01.01.b. Demonstrate safety practices when working in an outdoor environment.	NRS.02.01.01.c. Demonstrate appropriate responses to accidents and injuries that occur in an outdoor environment.	
NRS.02.01.02.a. Recognize biohazards associated with natural resources.	NRS.02.01.02.b. Use appropriate techniques and equipment when working with biohazards.	NRS.02.01.02.c. Demonstrate appropriate responses for disasters involving biohazardous materials.	
NRS.02.02. Student Assessment Expectations: Demonstrate cartographic skills to aid in developing, implementing and evaluating natural resource management plans.			Math: 4B Science: A3 and F2 Social Studies: 3b and 3c
NRS.02.02.01.a. Demonstrate how to use maps to identify directions and features, calculate actual distance and determine the elevations of points.	NRS.02.02.01.b. Locate natural resources using a land survey and geographic coordinate system.	NRS.02.02.01.c. Employ Global Positioning System and Geographic Information Systems technologies to inventory features in natural resource management.	
NRS.02.03. Student Assessment Expectations: Measure and survey natural resource status to obtain planning data.			Math: 5C Science: A3 and F2 Social Studies: 3h
NRS.02.03.01.a. Describe the value of resource inventories and population studies.	NRS.02.03.01.b. Discuss the procedures for conducting resource inventories and population studies.	NRS.02.03.01.c. Conduct resource inventories and population studies to assess resource status.	
NRS.02.04. Student Assessment Expectations: Demonstrate natural resource enhancement techniques.			Science: F3 Social Studies: 3g and 3k
NRS.02.04.01.a. Identify the different kinds of streams.	NRS.02.04.01.b. Identify indicators of the biological health of a stream.	NRS.02.04.01.c. Create and implement a stream enhancement plan.	
NRS.02.04.02.a. Identify characteristics of a healthy forest.	NRS.02.04.02.b. Identify ways in which forest stands may be improved.	NRS.02.04.02.c. Formulate a timber stand improvement plan for a forest.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
NRS.02.04.03.a. Identify characteristics of a healthy wildlife and fish habitat.	NRS.02.04.03.b. Identify methods of wildlife and fish habitat improvement.	NRS.02.04.03.c. Conduct a survey of a habitat and devise a comprehensive improvement plan.	
NRS.02.04.04.a. Identify characteristics of healthy rangeland.	NRS.02.04.04.b. Identify methods of rangeland improvement.	NRS.02.04.04.c. Evaluate a rangeland and develop a management plan for improvement.	
NRS.02.04.05.a. Identify natural resource characteristics desirable for recreational purposes.	NRS.02.04.05.b. Identify natural resource management techniques for improving recreation opportunities.	NRS.02.04.05.c. Evaluate the impact of recreational activities on natural resources and create an improvement plan.	
NRS.02.04.06.a. Identify characteristics of healthy marine and coastal natural resources.	NRS.02.04.06.b. Identify methods to improve marine and coastal natural resources.	NRS.02.04.06.c. Assess marine and coastal natural resources and prepare an improvement plan.	
NRS.02.05. Student Assessment Expectations: Interpret laws related to natural resource management and protection.			Science: F3 Language Arts: 7 Social Studies: 6c
NRS.02.05.01.a. Identify laws associated with natural resource systems.	NRS.02.05.01.b. Identify the purposes of laws associated with natural resource systems.	NRS.02.05.01.c. Abide by specific laws pertaining to natural resource systems.	
NRS.02.05.02.a. Define mitigation.	NRS.02.05.02.b. Identify issues involving mitigation of natural resources.	NRS.02.05.02.c. Demonstrate mitigation techniques for natural resources.	
NRS.02.06. Student Assessment Expectations: Apply ecological concepts and principles to natural resource systems.			Science: D2 and F3 Social Studies: 3b, 3f and 3h
NRS.02.06.01.a. Identify biogeochemical cycles.	NRS.02.06.01.b. Diagram biogeochemical cycles and explain the processes.	NRS.02.06.01.c. Determine the human influence on biogeochemical cycles.	
NRS.02.06.02.a. Describe properties of watersheds and identify the boundaries of local watersheds.	NRS.02.06.02.b. Relate the function of watersheds to natural resources.	NRS.02.06.02.c. Analyze ecosystem functions of a watershed.	
NRS.02.06.03.a. Compare and contrast groundwater and surface-water flow.	NRS.02.06.03.b. Explain stream hydrology and structure, and determine the different classes of streams.	NRS.02.06.03.c. Classify and predict the behavior of local streams.	

Level I		Level II	Level III	National Academic Standard Grade-Level Expectation
NRS.02.06.04.a. Define riparian zones and riparian buffers, and explain their functions.		NRS.02.06.04.b. Identify techniques used in the creation, enhancement and management of riparian zones and riparian buffers.	NRS.02.06.04.c. Create, enhance and manage riparian zones and riparian buffers.	
NRS.02.06.05.a. Describe the processes associated with ecological succession.		NRS.02.06.05.b. Give examples of primary-succession and secondary-succession species in a community of organisms.	NRS.02.06.05.c. Conduct a field study to determine the stages of ecological succession in a community of organisms.	
NRS.02.06.06.a. Explain population ecology, population density and population dispersion.		NRS.02.06.06.b. Discuss factors that influence population density and population dispersion.	NRS.02.06.06.c. Create and implement a management plan based on a population study for a community of organisms.	
NRS.02.06.07.a. Define invasive species.		NRS.02.06.07.b. Discuss factors that influence the establishment and spread of invasive species.	NRS.02.06.07.c. Develop and implement a plan to reduce the impact of invasive species on natural resources.	
NRS.02.06.08.a. Describe sources of pollution and delineate between point and nonpoint source pollution.		NRS.02.06.08.b. Describe the impact of pollution on natural resources.	NRS.02.06.08.c. Create and implement a plan to prevent or limit the effects of pollution on natural resources.	
NRS.02.06.09.a. Describe climatic factors that influence natural resources.		NRS.02.06.09.b. Describe the impact climate has on natural resources.	NRS.02.06.09.c. Monitor the effects of climate on plants and wildlife and fish.	
NRS.03. Essential Learning Outcome: Apply knowledge of natural resources to production and processing industries.				
NRS.03.01. Student Assessment Expectations: Produce, harvest, process and use natural resource products.				Science: F3
NRS.03.01.01.a. Describe forest harvesting methods.		NRS.03.01.01.b. Determine when to harvest forest products.	NRS.03.01.01.c. Harvest forest products according to principles of sustainable forest management.	
NRS.03.01.02.a. Describe uses of tree species.		NRS.03.01.02.b. Describe processing of forest products.	NRS.03.01.02.c. Process forest products.	
NRS.03.01.03.a. Identify wildlife and fish species that can be sustainably harvested.		NRS.03.01.03.b. Describe techniques used in the harvesting of wildlife and fish.	NRS.03.01.03.c. Formulate a management plan for protecting wildlife and fish from overexploitation.	
NRS.03.01.04.a. Identify products obtained from wildlife and fish species.		NRS.03.01.04.b. Describe techniques used in the processing of wildlife and fish.	NRS.03.01.04.c. Process harvested wildlife and fish.	

Level I		Level II	Level III	National Academic Standard Grade-Level Expectation
NRS.03.01.05.a. Describe the value of minerals and ores to the economy.		NRS.03.01.05.b. Describe economically important minerals and ores that are extracted and processed.	NRS.03.01.05.c. Give examples of methods used to extract and process minerals and ores.	
NRS.03.01.06.a. Describe the value of fossil fuels to the economy.		NRS.03.01.06.b. Describe sources of fossil fuels and products made from fossil fuels.	NRS.03.01.06.c. Give examples of methods used to extract and process fossil fuels.	
NRS.03.01.07.a. Describe the benefits of hydroelectric generation.		NRS.03.01.07.b. Describe characteristics of sites that lend themselves to hydroelectric generation.	NRS.03.01.07.c. Describe hydroelectric generation techniques and procedures, and prepare a report on the impacts of hydroelectric dams on aquatic systems.	
NRS.03.01.08.a. Identify recreational uses of natural resources.		NRS.03.01.08.b. Debate an issue related to the recreational use of natural resources.	NRS.03.01.08.c. Evaluate a natural resource site and recommend opportunities for recreational activities.	
NRS.03.01.09.a. Identify aquatic species harvested for commercial and recreational purposes.		NRS.03.01.09.b. Describe techniques used to harvest aquatic species.	NRS.03.01.09.c. Harvest aquatic species according to sustainable management principles.	
NRS.03.01.10.a. Identify uses of aquatic species.		NRS.03.01.10.b. Explain techniques used to process aquatic species.	NRS.03.01.10.c. Process harvested aquatic species.	
NRS.04. Essential Learning Outcome: Demonstrate techniques used to protect natural resources.				
NRS.04.01. Student Assessment Expectations: Manage fires in natural resource systems.				Science: F5
NRS.04.01.01.a. Differentiate between desirable and undesirable fires and prepare a report on the role fire plays in a healthy ecosystem.		NRS.04.01.01.b. Describe techniques used to suppress wildfires and manage prescribed fires.	NRS.04.01.01.c. Demonstrate the application of fire suppression and fire safety techniques.	
NRS.04.02. Student Assessment Expectations: Diagnose plant and wildlife and fish diseases and follow protocol to prevent their spread.				Science: F1 and F3 Social Studies: 9d
NRS.04.02.01.a. Identify causes of diseases in plants.		NRS.04.02.01.b. Report the observance of diseases affecting plants to the appropriate authorities.	NRS.04.02.01.c. Explain management techniques used to reduce infection and spread of plant diseases in natural resources.	
NRS.04.02.02.a. Identify causes of diseases in wildlife and fish.		NRS.04.02.02.b. Report the observance of diseases affecting wildlife and fish	NRS.04.02.02.c. Explain wildlife and fish disease management techniques.	

	to the appropriate authorities.		
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Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
NRS.04.03. Student Assessment Expectations: Manage insect infestations of natural resources.			Science: C4 and F3
NRS.04.03.01.a. Identify harmful and beneficial insects and signs of insect damage to natural resources.	NRS.04.03.01.b. Report observance of insect pests to the appropriate authorities.	NRS.04.03.01.c. Describe techniques used to manage pests of natural resources.	
NRS.05. Essential Learning Outcome: Use effective methods and venues to communicate natural resource processes to the public.			
NRS.05.01. Student Assessment Expectations: Communicate natural resource information to the public.			Science: F3 and F6 Language Arts: 5 and 6
NRS.05.01.01.a. Identify ways in which a message regarding natural resources may be communicated to the public.	NRS.05.01.01.b. Design and construct a display that communicates a natural resource topic and discuss the topic in a public forum.	NRS.05.01.01.c. Communicate a natural resource message through the press, radio, television or public appearances.	
NRS.06. Essential Learning Outcome: Use tools and various methods to create taxidermy products			
NRS.06.01. Student Assessment Expectations: Create various taxidermy products.			
NRS.06.01.01.a. Identify ways in which animal/fish can be presented in the form of Taxidermy.	NRS.05.01.01.b. Design and construct a display of various taxidermy items	NRS.05.01.01.c. Present, Communicate and record the process of creating a taxidermy model.	

Holmen School District

Agriscience Department

Wisconsin Department of Public Instruction - Career Clusters and Pathways

CLUSTER: AGRICULTURE, FOOD AND NATURAL RESOURCES (AFNR)

PATHWAY: Life Knowledge Career Cluster Skills (CCS)

Pathway Content Standard: The student will demonstrate competence in the application of leadership, personal growth and career success skills necessary for a chosen profession while effectively contributing to society.

Courses Related to cluster/pathway with descriptions:

- Middle School Agriculture – Level 1

This course is designed for the student who wants to gain a more in-depth appreciation for agriculture. Topics covered in this course include agriculture occupations, youth leadership, FFA, Wisconsin agriculture, plant science, large and small animal science, wildlife, food science. Students will discover new concepts in agri-science as well as developing an appreciation from where their food comes from.

- Leadership and Team Building – Level 2

This course is open to students in grades 9-12 who wish to further develop interest in leadership and team building activities. Leadership is defined as "the ability to move or influence others toward achieving individual or group goals." Your involvement in this course will help you become a better leader. Through learning activities, projects, and participation in course activities, you will be a better leader.

- Agribusiness CO-OP – Level 2

The Agribusiness Co-op is a course that combines school based academic and occupational instruction with work based learning with an employer. The student will also work 480 hours during the enrolment time period.

- Summer Agribusiness CO-OP /SAE– Level 3

The Summer Agribusiness Co-op/SAE class is a course that combines school-based academic and occupational instruction with work-based learning. The student will be required to work (100) hours during the enrollment period. Enrollment periods can be the First Summer School

Session and or the second Summer School session. Each session is ½ credits. Session 1 June 7th - July 10th - Session 2 July 11th – August 13th

Cluster Content Standard: The student will demonstrate competence in the application of leadership, personal growth and career success skills necessary for a chosen profession while effectively contributing to society.

Level I	Level II	Level III	National Academic Standard Grade- Level Expectation
CS.01. Essential Learning Outcome: Premier Leadership: Acquire the skills necessary to positively influence others.			
CS.01.01. Student Assessment Expectation: Action: Exhibit the skills and competencies needed to achieve a desired result.			Social Studies: 4d and 4h
CS.01.01.01.a. Work productively with a group or independently.	CS.01.01.01.b. Demonstrate the ability to complete a task without assistance.	CS.01.01.01.c. Work independently and in group settings to accomplish a task.	
CS.01.01.02.a. Create a task analysis.	CS.01.01.02.b. Create measurable objectives for a given situation.	CS.01.01.02.c. Assess outcomes to determine success for a task.	
CS.01.01.03.a. Exhibit good planning skills for a specific task or situation.	CS.01.01.03.b. Assess individual strengths and weaknesses in planning.	CS.01.01.03.c. Implement an effective project plan.	
CS.01.01.04.a. Explore available resources to assist in meeting project needs.	CS.01.01.04.b. Use appropriate and reliable resources to complete an action or project.	CS.01.01.04.c. Create resources to complete an action or project.	
CS.01.01.05.a. Assess the physical, financial and professional risks associated with a particular task.	CS.01.01.05.b. Create a plan for performing a job that will minimize physical, financial and professional risks.	CS.01.01.05.c. Implement a plan that minimizes physical, financial, and professional risks and analyze results.	
CS.01.01.06.a. Identify the strengths/talents of team members needed to achieve a desired task.	CS.01.01.06.b. Assign project parts equitably amongst team members to achieve a given task.	CS.01.01.06.c. Develop strengths and talents of team members so that all can achieve success.	
CS.01.01.07.a. Set personal goals using the SMART goals method (Specific, Measurable, Approved by you, Realistic, Time-stamped).	CS.01.01.07.b. Use a variety of strategies to evaluate goals (e.g., observe, apply, and demonstrate).	CS.01.01.07.c. Evaluate actions taken and make appropriate modifications to personal goals.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
CS.01.02. Student Assessment Expectation: Relationships: Build a constituency through listening, coaching, understanding and appreciating others.			Language Arts: 12 Social Studies: 4h
CS.01.02.01.a. Explain human relation skills such as compassion, empathy, unselfishness, trustworthiness, reliability and being friendly.	CS.01.02.01.b. Determine human relation skills characteristics of people who exhibit compassion, empathy, unselfishness, trustworthiness, reliability and being friendly.	CS.01.02.01.c. Demonstrate human relation skills including compassion, empathy, unselfishness, trustworthiness, reliability and being friendly to co-workers.	
CS.01.02.02.a. Engage in a conversation with others to identify their interests and aspirations.	CS.01.02.02.b. Utilize communication skills to collaborate in a group setting.	CS.01.02.02.c. Engage others in conversations to respond to an obstacle when completing a task.	
CS.01.02.03.a. Identify the steps/strategies to successfully coach/mentor others.	CS.01.02.03.b. Perform the steps/strategies to successfully coach/mentor others.	CS.01.02.03.c. Manage a coaching/mentoring program.	
CS.01.02.04.a. Identify characteristics of effective teams.	CS.01.02.04.b. Establish team ground rules for expected individual behaviors on the team.	CS.01.02.04.c. Evaluate the effectiveness of team members.	
CS.01.03. Student Assessment Expectation: Vision: Establish a clear image of what the future should look like.			Social Studies: 4a, 4d and 4h
CS.01.03.01.a. Identify the benefits of developing vision.	CS.01.03.01.b. Utilize visioning skills to develop a plan.	CS.01.03.01.c. Develop vision statements and plans for an organization.	
CS.01.03.02.a. Use various conceptualizing tools.	CS.01.03.02.b. Compare conceptualizing tools to use in a given situation.	CS.01.03.02.c. Create a plan of action to complete a task based on a conceptualized idea.	
CS.01.03.03.a. Analyze the risks and rewards of new experiences.	CS.01.03.03.b. Analyze a case study involving a new experience for risk and rewards.	CS.01.03.03.c. Conduct a self-evaluation for personal reactions to new experiences.	
CS.01.03.04.a. Describe techniques used to build consensus.	CS.01.03.04.b. Demonstrate consensus building.	CS.01.04.05.c. Lead a meeting or activity that engages all participants in the process.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
CS.01.06. Student Assessment Expectation: Continuous Improvement: Pursue learning and growth opportunities related to professional and personal aspirations.			Science: A4 Language Arts: 8 Social Studies: 4h
CS.01.06.01.a. Explain the reasons for having a leadership/personal growth plan.	CS.01.06.01.b. Develop a plan that includes specific goals for leadership and personal growth.	CS.01.06.01.c. Implement a leadership and personal growth plan.	
CS.01.06.02.a. Describe the role and purpose of a personal mentor.	CS.01.06.02.b. Identify areas where a personal mentor could be helpful.	CS.01.06.02.c. Serve as a mentor for others.	
CS.01.06.03.a. Identify the different types of problem solving models and their applicability to specific situations.	CS.01.06.03.b. Utilize a problem-solving model to solve a given problem.	CS.01.06.03.c. Use problem solving strategies to solve a professional or personal issue.	
CS.01.06.04.a. Use various emerging technologies to enhance a program or project.	CS.01.06.04.b. Evaluate the effectiveness of current technologies.	CS.01.06.04.c. Make recommendations to adopt new emerging technologies.	
CS.01.06.05.a. Describe the value of being a life-long learner and the need for continuous development.	CS.01.06.05.b. Assess personal motivations and their impact on acquiring new knowledge and skills.	CS.01.06.05.c. Implement a plan to develop new knowledge and skills related to professional and personal aspirations.	
CS.02. Essential Learning Outcome: Personal Growth: Develop a skill set to enhance the positive evolution of the whole person.			
CS.02.01. Student Assessment Expectation: Physical Growth: Address personal health by understanding, respecting and managing your body's needs.			Science: F1
CS.02.01.01.a. Identify how healthy and unhealthy food affects one's body.	CS.02.01.01.b. Create a balanced menu to ensure appropriate proportions of desired nutritional elements.	CS.02.01.01.c. Practice healthy eating habits.	
CS.02.01.02.a. Describe the benefits, risks and opportunities associated with being physically fit.	CS.02.01.02.b. Implement a plan for respecting one's body.	CS.02.01.02.c. Make recommendations or changes to a personal fitness program regiment.	
CS.02.01.03.a. Describe practices that must be maintained to achieve long-term health.	CS.02.01.03.b. Implement a plan to achieve long-term health.	CS.02.01.03.c. Evaluate personal lifestyle as related to long-term health.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
CS.02.02. Student Assessment Expectation: Social Growth: Interact with others in a manner that respects the differences of a diverse and changing society.			Language Arts: 12 Social Studies: 1e
CS.02.02.01.a. Discover the different cultures that exist in one's community.	CS.02.02.01.b. Compare and contrast the customs of different cultures.	CS.02.02.01.c. Engage in a project that educates others about different cultures from within the community.	
CS.02.02.02.a. Demonstrate proper conduct and appearances for various settings.	CS.02.02.02.b. Apply the skills required to present oneself appropriately in various settings.	CS.02.02.02.c. Present oneself appropriately in various settings.	
CS.02.02.03.a. Identify the skills needed to develop a professional relationship.	CS.02.02.03.b. Exhibit the behaviors needed for developing and maintaining a professional relationship.	CS.02.02.03.c. Maintain effective professional relationships.	
CS.02.03. Student Assessment Expectation: Professional Growth: Develop awareness and apply skills necessary for achieving career success.			Language Arts: 12 Social Studies: 4a
CS.02.03.01.a. Explore various career interests/options.	CS.02.03.01.b. Make decisions to plan for a personal career.	CS.02.03.01.c. Implement a plan to achieve career goals and priorities.	
CS.02.03.02.a. Chart the components to creating a balanced work/life plan.	CS.02.03.02.b. Determine the level of non-essential actions/tasks related to personal and work life.	CS.02.03.02.c. Balance personal and work responsibilities.	
CS.02.03.03.a. Identify the skills required for various careers.	CS.02.03.03.b. Develop skills required for a specific career.	CS.02.03.03.c. Demonstrate employability skills for a specific career.	
CS.02.04. Student Assessment Expectation: Mental Growth: Demonstrate the effective application of reasoning, thinking, and coping skills.			Math: 6C Science: A4 Language Arts: 4 and 8
CS.02.04.01.a. Describe the skills necessary to think critically and creatively.	CS.02.04.01.b. Discuss the benefits of thinking critically and creatively.	CS.02.04.01.c. Demonstrate critical and creative thinking skills while completing a task.	
CS.02.04.02.a. Explore tools used in creative problem-solving.	CS.02.04.02.b. Analyze problems that were solved well and problems that were not solved well.	CS.02.04.02.c. Implement effective problem solving strategies.	
CS.02.04.03.a. Discuss the skills and techniques needed to negotiate effectively.	CS.02.04.03.b. Analyze case studies where negotiation techniques are used.	CS.02.04.03.c. Demonstrate the skills needed to negotiate with others.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
CS.02.05. Student Assessment Expectation: Emotional Growth: Demonstrate healthy responses to one's feelings.			Social Studies: 4a
CS.02.05.01.a. Describe skills used to cope with different situations.	CS.02.05.01.b. Determine the coping process that best fits one's situation.	CS.02.05.01.c. Demonstrate one's ability to cope with life's trials.	
CS.02.05.02.a. Discover the characteristics of selfless and compassionate individuals.	CS.02.05.02.b. Determine opportunities to demonstrate selflessness and compassion towards others.	CS.02.05.02.c. Practice the skills needed to live a compassionate and selfless life.	
CS.02.05.03.a. Describe the factors needed to build self confidence.	CS.02.05.03.b. Analyze an individual's personal level of self confidence.	CS.02.05.03.c. Exhibit self confidence while in the workplace.	
CS.02.05.04.a. Analyze the benefits of emotional development.	CS.02.05.04.b. Practice habits that positively affect emotional well-being.	CS.02.05.04.c. Develop emotional well-being in other team members.	
CS.02.05.05.a. Describe situations where seeking counsel would be appropriate (e.g., personal, legal, financial, etc.).	CS.02.05.05.b. Analyze the positive outcomes of seeking counsel through an appropriate source.	CS.02.05.05.c. Seek appropriate counsel for specific situations (e.g., personal, legal, financial, etc.).	
CS.02.06. Student Assessment Expectation: Spiritual Growth: Reflect inner strength to allow one to define personal beliefs, values, principles and sense of balance.			Social Studies: 4c and 4f
CS.02.06.01.a. Define the terms: value, beliefs, and belief system.	CS.02.06.01.b. Create a personal belief statement.	CS.02.06.01.c. Develop and nurture a personal belief system.	
CS.02.06.02.a. Describe respectful, sensitive behaviors that can influence others.	CS.02.06.02.b. Explain how respectful, sensitive behaviors lead to increased influence.	CS.02.06.02.c. Demonstrate respect and sensitivity to others' beliefs.	
CS.03. Essential Learning Outcome: Career Success: Demonstrate those qualities, attributes and skills necessary to succeed in, or further prepare for, a chosen career while effectively contributing to society.			
CS.03.01. Student Assessment Expectation: Communication: Demonstrate oral, written and verbal skills.			Language Arts: 4, 5 and 12
CS.03.01.01.a. Use basic technical and business writing skills.	CS.03.01.01.b. Select the appropriate form of technical and business writing or communication for a specific situation.	CS.03.01.01.c. Demonstrate technical and business writing skills to communicate effectively with co-workers and supervisors.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
CS.03.01.02.a. Describe the various types and uses of resumes.	CS.03.01.02.b. Prepare a resume.	CS.03.01.02.c. Demonstrate effective use of a resume as part of an effort to obtain a job.	
CS.03.01.03.a. Develop an outline or plan for a business presentation.	CS.03.01.03.b. Deliver a business presentation for a peer group (e.g., class presentation).	CS.03.01.03.c. Make effective business presentations.	
CS.03.02. Student Assessment Expectation: Decision Making – Analyze situations and execute an appropriate course of action.			Science: A1 and A5 Social Studies: 1c and 4h
CS.03.02.01.a. Analyze the steps in the decision-making process.	CS.03.02.01.b. Utilize the process used to reach a conclusion for a decision.	CS.03.02.01.c. Make decisions for a given situation by applying the decision-making process.	
CS.03.02.02.a. Select resources to help in the problem-solving process.	CS.03.02.02.b. Determine information that is critical to solving problems.	CS.03.02.02.c. Use problem-solving skills.	
CS.03.02.03.a. Differentiate between ethical and unethical behavior.	CS.03.02.03.b. Practice ethical behaviors.	CS.03.02.03.c. Examine an ethical dilemma and prepare an argument for a position.	
CS.03.02.04.a. Use an interest inventory to determine goals appropriate to personal passions, abilities and aptitudes.	CS.03.02.04.b. Assess personal skills to set goals for success in a career.	CS.03.02.04.c. Implement appropriate preparation plans for a career path based on passion, abilities, aptitude, opportunities.	
CS.03.03. Student Assessment Expectation: Flexibility / Adaptability: Describe traits that enable one to be capable and willing to accept change.			Science: A2, A6 and E2 Language Arts: 7 Social Studies: 8a
CS.03.03.01.a. Research current and emerging technologies in AFNR.	CS.03.03.01.b. Analyze the advantages and disadvantages of current and emerging technologies in AFNR activities.	CS.03.03.01.c. Conduct a workplace study to assess the benefits to adapting emerging technologies.	
CS.03.03.02.a. Select the appropriate process to initiate effective change for a given situation.	CS.03.03.02.b. Assess the benefits of using the change process.	CS.03.03.02.c. Evaluate strategies that can be used to manage change within the workplace.	
CS.03.03.03.a. Assess to the value of providing feedback.	CS.03.03.03.b. Differentiate between positive and negative constructive feedback and realize the importance of both.	CS.03.03.03.c. Respond to feedback to improve a situation, skill or performance.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
CS.04. Essential Learning Outcome: Systems: Examine roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment.			
CS.04.01. Student Assessment Expectation: Examine performance and goals to appreciate organizations and industries within AFNR.			
CS.04.01.01.a. Examine performance and goals to appreciate professional organizations and industries within AFNR.	CS.04.01.01.b. Explain the major guidelines used by AFNR professional organizations to manage and improve performance.	CS.04.01.01.c. Examine economic, social and technological changes and spotlight their impact on AFNR professional organizations and the industry.	
CS.05. Essential Learning Outcome: Systems: Identify how key organizational structures and processes affect organizational performance and the quality of products and services.			
CS.05.01. Student Assessment Expectation: Manage organizational structures and processes to better serve customers.			Social Studies: 7a
CS.05.01.01.a. List ways an organization can be evaluated based on its customer satisfaction and service operations.	CS.05.01.01.b. Explain how organization performance including customer satisfaction and service/ operations performance can be improved.	CS.05.01.01.c. Implement a plan to manage relationships with both internal and external customers.	
CS.05.02. Student Assessment Expectation: Examine the components of the AFNR systems and address their maintenance requirements.			
CS.05.02.01.a. Develop goals and objectives for each system to manage organizational activities more effectively.	CS.05.02.01.b. Operate technical tools to access, manage, integrate, evaluate and create information.	CS.05.02.01.c. Implement management plans to improve the AFNR systems.	
CS.05.03. Student Assessment Expectation: Research geographical data related to AFNR systems.			Math: 5C Language Arts: 4 Social Studies: 3c and 3e
CS.05.03.01.a. Present resource data in graphic format.	CS.05.03.01.b. Interpret resource data in graphic format.	CS.05.03.01.c. Use computer systems to present trends in resource data.	
CS.05.03.02.a. Utilize the different types of AFNR systems related to various geographical areas.	CS.05.03.02.b. Explore how AFNR systems differ across geographical areas.	CS.05.03.02.c. Evaluate the effects of implementing an AFNR system in a different geographical area.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
CS.06. Essential Learning Outcome: Examine the importance of health, safety, and environmental management systems in organizations and their importance to performance and regulatory compliance.			
CS.06.01. Student Assessment Expectation: Observe required regulations to maintain/improve safety, health and environmental management systems.			Science: F4 and F5 Social Studies: 3g
CS.06.01.01.a. Examine major health, safety, and environmental management system components in AFNR organizations.	CS.06.01.01.b. Identify the benefits of improved health, safety, and environmental performance to AFNR organizations in current geographical area.	CS.06.01.01.c. Assess how AFNR organizations promote improved health, safety, and environmental performance and suggest plans for improvement.	
CS.06.02. Student Assessment Expectation: Develop a plan to maintain and improve health, safety and environmental compliance and performance.			Science: F1, F4 and F5 Social Studies: 9d
CS.06.02.01.a. Use proper safety practices/personal protective equipment.	CS.06.02.01.b. Develop plans to improve health, safety and environmental performance.	CS.06.02.01.c. Educate other workers to improve health, safety, and environmental performance in a safe manner.	
CS.06.03 Student Assessment Expectation: Provide health, safety, and environmental operating guidelines.			Science: F4 and F5 Language Arts: 4 and 5
CS.06.03.01.a. Demonstrate the importance of safety, health, and environmental practices in the workplace.	CS.06.03.01.b. Develop a pollution/waste prevention plan to enhance safety, health, and environmental practices in the workplace.	CS.06.03.01.c. Establish a set of health, safety, and environmental principles to ensure a high level of performance.	
CS.06.04. Student Assessment Expectation: Examine health risks associated with a particular skill to better develop personnel safety guidelines.			Science: F1 and F5
CS.06.04.01.a. Determine the level of contamination or injury that would be considered a risk as associated with a specific job or activity.	CS.06.04.01.b. Assess the safety priorities for the level of contamination or injury.	CS.06.04.01.c. Implement a plan to mitigate the level of contamination or injury identified in the workplace.	
CS.07. Essential Learning Outcome: Parliamentary Procedure			
CS.07.01. Student Assessment Expectation: Apply the use of parliamentary law to AFNR.			
CS.07.01.01.a. Implement the use of parliamentary procedure to AFNR careers.	CS.07.01.01.b. Use appropriate parliamentary procedure to AFNR careers.	CS.07.01.01.c. Orient a group on the use of parliamentary procedure to AFNR careers.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
CS.07.02. Student Assessment Expectation: Demonstrate the use of Parliamentary Procedure			
CS.07.02.01.a. Inform others on the application of parliamentary procedure	CS.07.02.01.b. Use knowledge and procedures relevant to a particular situation.	CS.07.02.01.c. Complete a 10 parliamentary procedure abilities	
CS.07.03. Student Assessment Expectation: Follow appropriate procedures in of parliamentary law			
CS.07.03.01.a. Evaluate the use of parliamentary law	CS.07.03.01.b. Develop a plan for using parliamentary law in a meeting	CS.07.03.01.c. Communicate the appropriate responses for situations related to parliamentary law	
CS.08. Essential Learning Outcome: Technical Skills: Use tools, equipment, machinery and technology appropriate to work within areas related to AFNR.			
CS.08.01. Student Assessment Expectation: Evaluate and select the appropriate tool to perform a given task.			
CS.08.01.01.a. Identify standard tools, equipment, and safety procedures related to a specific task.	CS.08.01.01.b. Set up/adjust tools and equipment related to complete a specific task.	CS.08.01.01.c. Use tools and equipment appropriately to complete a specific task.	
CS.08.01.02.a. Follow operating instructions related to specific tools and equipment needed to complete a task.	CS.08.01.02.b. Demonstrate appropriate operation, storage, and maintenance techniques for tools and equipment.	CS.08.01.02.c. Devise a maintenance plan or schedules for tools and equipment.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
CS.08.02. Student Assessment Expectation: Use appropriate protective equipment and handle AFNR tools and equipment to demonstrate safe and proper use of the tools and equipment.			Science: F5
CS.08.02.01.a. Use the appropriate procedures for the use and operation of specific tools and equipment.	CS.08.02.01.b. Demonstrate safety precautions when using tools for a specific task around bystanders.	CS.08.02.01.c. Operate applicable AFNR equipment and vehicles safely.	
CS.08.03. Student Assessment Expectation: Maintain tools for efficient use.			
CS.08.03.01.a. Describe the conditions that cause the need for tool maintenance.	CS.08.03.01.b. Demonstrate how to replace tool parts and components as needed.	CS.08.03.01.c. Develop and update a preventive maintenance schedule.	
CS.09. Essential Learning Outcome: Technical Skills: Compare and contrast issues affecting the AFNR industry.			
CS.09.01. Student Assessment Expectation: Apply economic principles to AFNR systems (e.g., supply, demand and profit).			Language Arts: 4 Social Studies: 7a and 7b
CS.09.01.01.a. Calculate the effect of compound interest on AFNR investments.	CS.09.01.01.b. Describe the economic impacts of natural resource preservation vs. use of the resource.	CS.09.01.01.c. Describe the impacts of AFNR decisions on global markets and environmental health.	
CS.09.02. Student Assessment Expectation: Apply skills with computer software to accomplish a variety of business activities.			Math: 6C Science: A3
CS.09.02.01.a. Demonstrate basic computer and software systems skills.	CS.09.02.01.b. Use basic software systems such as spreadsheet and word processing to complete a task.	CS.09.02.01.c. Use diagnostic software.	
CS.09.03. Student Assessment Expectation: Use technology to demonstrate the ability to network and interface with technology.			Science: A3 and E2
CS.09.03.01.a. Use the technological systems to acquire information related to AFNR.	CS.09.03.01.b. Show technical competence for efficient workplace communications.	CS.09.03.01.c. Demonstrate the use of technology in linking information from various sources.	

Level I	Level II	Level III	National Academic Standard Grade-Level Expectation
CS.10. Essential Learning Outcome: Technical Skills: Envision emerging technology and globalization to project its influence on widespread markets.			
CS.10.01. Student Assessment Expectation: Examine new technologies to project their impact in the global market of AFNR.			Science: F6
CS.10.01.01.a. Apply the use of various scientific measurement and conversions to AFNR systems.	CS.10.01.01.b. Discuss the use of mechatronics (such as lasers and robotics) and their impact on AFNR systems.	CS.10.01.01.c. Evaluate the importance of new and emerging communication systems and how they impact AFNR systems.	
CS.10.02. Student Assessment Expectation: Relate technology advancements to the need for Continuing Education/Career Development.			
CS.10.02.01.a. Utilize historical data, technology and career training to predict market trends.	CS.10.02.01.b. Apply emerging technology and career training to meet market demands.	CS.10.02.01.c. Research emerging technologies and the opportunities they may create within the AFNR systems.	
CS.11. Essential Learning Outcome: Scientific Inquiry: Utilize scientific inquiry as an investigative method.			
CS.11.01. Student Assessment Expectation: Recognize the questions and theory needed to guide scientific investigations.			Math: 6C Science: A1 and A2
CS.11.01.01.a. Formulate a testable hypothesis.	CS.11.01.01.b. Design an experiment to test a hypothesis.	CS.11.01.01.c. Demonstrate procedures and a conceptual understanding of scientific investigation.	
CS.11.02. Student Assessment Expectation: Design and conduct a scientific investigation.			Math: 6C Science: A1 and A2 Language Arts: 7
CS.11.02.01.a. Design an experiment or scientific inquiry for a specific project.	CS.11.02.01.b. Implement an experimental design to test a formulated hypothesis.	CS.11.02.01.c. Propose additional studies based on the results of an experiment.	

Instructional Strategies & Assessment

The Holmen School District Agriscience and Technology & Engineering Education Department uses a variety of instructional strategies and assessment techniques. We prepare students by using critical thinking, problem solving, inquiry based, and leadership. We utilize lecture, demonstration, and project based learning activities. Our assessment techniques are performance based. We evaluate students based on professional responsibilities, rubrics, observation, safety, craftsmanship, reflections, journals, presentations, project outcomes and teamwork. Our instructional strategies and assessment utilize the core academic standards.



Technology & Engineering Education Curriculum



Technology & Engineering Education Curriculum



The Tech. Education Curriculum focuses on exploration of the self in relation to the world of work. Students discover their interests, talents, abilities, and the niches where their talents and abilities might best be used. Career and Technical Education also equips students with research skills to enable them to form a realistic picture of job opportunities. In essence, Career and Technical Education brings greater satisfaction and relevance to career choices. Career & Technical Education better prepares students for all post-high school opportunities. Whether moving on to further education, training or employment, every Wisconsin student moves through curriculum-based career awareness, exploration, planning and preparation leading to a realistic individualized career plan which is compatible with the student's abilities, aptitudes and interests.

Course Offerings & Program Description

Students will learn to apply academic principles that can be put to use in their personal lives. These are project-based courses that will enable students to make educated career choices.

Technology Education - Course Offerings Flow Chart

Level 1 - no prerequisite

Intro to Technology 9-12 .5 cr	Television Production 9-12 .5 cr	Graphic Communications I 9-12 .5 cr
Hot Metals I 9-12 .5 cr	Robotics I 9-12 .5 cr	Photography 9-12 .5 cr
Machine Shop I 9-12 .5 cr	Woods I 9-12 .5 cr	Electronics I 9-12 .5 cr
Basic Auto Maintenance 10-12 .5 cr	Woods I for Females 9-12 .5 cr	Building Construction I 9-12 .5 cr
Basic Auto for Females 10-12 .5 cr	Beginning CAD 9-12 .5 cr	AG Mechanics & Small Engines 9-12 .5 cr

Level 2 - with prerequisite

Hot Metals II 9-12 .5 cr	Advanced TV Production 9-12 .5 cr	Graphic Communications II 9-12 .5 cr
Machine Shop II 9-12 .5 cr	Robotics II 9-12 .5 cr	Electronics II 9-12 .5 cr
Auto Mechanics Service I 10-12 .5 cr	Woods II 10-12 .5 cr	Auto CAD Lab 9-12 .5 cr
Auto Mechanics Service II 10-12 .5 cr		Building Construction II 10-12 Drivers License .5 cr

Level 3 & 4 - with prerequisite

Advanced Automotive 11-12 .5 cr	Advanced Woods 10-12 Teacher Approval .5 cr	Graphic Production III 11-12 Teacher Approval .5 cr
Auto Mechanics Service Co-op 12 Teacher Approval 1 cr	Independent Study 11-12 Teacher Approval .5 cr	Advanced Building Const. 11-12 Teacher Approval .5 cr

Example Activities:

- **Woods**- night stands, gun cabinets, coffee tables, bowls, entertainment centers
- **Metals** - welding of can crushers, folding chairs, cargo carriers, weight benches, snowmobile lifts, toolboxes, c-clamps
- **Automotive** - brake repair, fluid changes and checks, cooling system repair, tire pressure checks, inspection of electrical and drive train parts
- **Graphics** - visual image editing and creation, printing technology
- **Photography** - digital and 35 mm capture with photo editing using computers and software
- **Electronics** - electrical circuit construction, alarm building,
- **Robotics** - robot task programming, build your own robot
- **Construction** - Drywall installation, framing of walls, ceramic tile activity, plumbing with copper pipe, wiring electrical circuits
- **Television Production** - green screen activities, video commercials.

Facilities include:

- Wood Lab - 27 pieces of cabinetmaking equipment
- Metal Lab - Foundry, Welding, Milling, Lathe, Plasma, Air Carbon Arc, Sheet Metal and Hand Tool Work Areas
- Graphics/Photography Lab - 16 Mac workstations, 2 dark rooms, photo studio, creative suites software
- CAD Lab - 19 PC workstations, industry based CAD software with engineering and architectural focus
- Auto Classroom/Lab - 8 bay auto shop, 2 vehicle hoists, Alldata service manuals online, computer diagnostic equipment
- Middle School CAD Lab - 30 computers, CAD software, Engineering software (available to 6,7,8th grades)
- Middle School Woods Lab - 18 woodworking pieces of equipment, one painting/finishing room

Holmen School District

Technology and Engineering Education

Wisconsin Department of Public Instruction - Career Clusters and Pathways

CLUSTER: Architecture and Construction

PATHWAY: Construction

Courses Related to cluster/pathway with descriptions:

- Grade 6 Tech Ed

Description: During this course students will learn general wood shop safety, the proper use of a variety of hand tools, and the correct operation of the drill press and spindle sander. Students will then construct a puddle jumper (whirly bird). Safety will be emphasized throughout this course. In addition, the students will learn basic drawing skills using CAD software to draw simple three-dimensional drawings. Basic engineering concepts will be explored using West Point Bridge Designer software to build a cost effective virtual bridge.

- Grade 7 Tech Ed

During this course students will learn general wood shop safety, the proper use of a variety of hand tools, and the correct operation of the drill press, band saw, and spindle sander. Students will use a variety of tools and equipment to build a model sized CO2 powered wooden dragster or a custom keepsake wooden box. Safety will be emphasized throughout this course. In addition, the students will learn basic drawing skills using CAD software to draw three-dimensional objects and orthographic projections of those objects. Basic engineering concepts will be explored using West Point Bridge Designer software to build a cost effective virtual bridge.

- Grade 8 Tech Ed

Students work on a variety of projects such as virtual bridge, intarsia, robotics, balsa wood towers, house design, camp chair, custom wooden pens, small wood projects, rockets, small engines, and other student originated projects. If students choose this class, they will be working with power tools and power equipment with teacher guidance and assistance. Safety will be emphasized. Students will learn useful skills and will also help them prepare for the Technology and Engineering classes at the high school.

- Building Construction I

This course is designed to be a “hands-on” experience in residential construction. This course will involve home building construction techniques, materials, and activities. Students will build interior walls, install drywall, wire electrical circuits, solder copper pipe, install ceramic tile, and apply roofing materials. Shop fee required.

- Building Construction II

Description: This course is designed to be a “hands-on” experience in residential construction. This class will continue using skills learned in Building Construction I to complete a class project. Students will work as a construction crew on different projects in the district or community. Example projects include storage sheds, garages, and shelters. This class is intended for students who are considering a construction related career, enjoy the outdoors, and/or would like to learn more about construction techniques and materials.

- Advanced Construction

This course is intended for students who will be going into a construction related career. Students will use the skills they learned in Building Construction I & II in order to build a structure and/or complete advanced projects such as stair construction, interior finish work, concrete/masonry, and many more.

- Introduction to Technology

Students will be introduced to the following areas of Industrial Technology and Agriculture: Drafting and design, graphics, metalworking, woodworking, agriculture, video production, electronics, and auto mechanics. Shop safety will be emphasized. Shop fee required.

Standards of Technology Literacy (National); see appendix A
1, 2, 3, 5, 11, 12, 13, 16, 20

ELO's (competencies)

Level 1

1. Demonstrate knowledge of measuring concepts.
2. Recognize safe operation of machinery and hand tools.
3. Select material for a technology presentation
4. Construct several projects using residential construction supplies.
5. Select the proper tools to prepare given materials.
6. Identify and practice, proper work habits, attitudes, and human relations skills.
7. Participate in construction projects.
8. Recognize different community related careers.

Level 2

1. Demonstrate proper work habits attitudes, and human relations skills.
2. Participate in construction of a small residential structure.
3. Interpret an incorrect construction procedure and correct.
4. Explore various TAI career opportunities

Level 3

1. Demonstrate communication, problem solving, and team building skills.
2. Interpret and support, proper work habits attitudes, and human relations skills.
3. Predict the tools and equipment necessary for a given job.
4. Devise a solution to perform an advanced construction skill.

Student Assessment Expectations

1. Demonstrate safety awareness and the use of personal safety related equipment.
2. Identify the proper use of fire protection equipment.
3. Demonstrate the safe and proper use of the basic hand tools
4. Demonstrate the proper care and use of measuring tools.
5. Identify and practice proper work habits.
6. Identify and practice proper work attitudes.
7. Identify and practice human relations skills.
8. Demonstrate drywall techniques.
9. Demonstrate copper pipe plumbing techniques.
10. Demonstrate house hold electrical techniques.
11. Demonstrate ceramic tile setting techniques.
12. Demonstrate studded wall building.
13. Demonstrate appropriate communication skills.
14. Use problem solving and building skills in a variety of situations.
15. Select site and establish elevations.

16. Layout small building using transit.
17. Build a floor system and floor covering.
18. Build wall sections with let-in braces.
19. Frame door and window openings.
20. Establish roof pitch and install roof system.
21. Frame gable end.
22. Install a wall and roof sheathing.
23. Install roofing and ridge vent.
24. Install exterior finish.
25. Install interior finish.
26. Demonstrate communication skills.
27. Demonstrate problem solving and building skills.
28. Use portable power tools (safely, effectively, efficiently, accurately)
29. Use stationary power tools (safely, effectively, efficiently, accurately)
30. Identify fractions of an inch to 1/16.
31. Demonstrate the ability to read and follow instructions and plans.
32. Demonstrate the ability to solve specific technology related problems in a group setting.

Holmen School District

Technology and Engineering Education

Wisconsin Department of Public Instruction - Career Clusters and Pathways

CLUSTER: Arts, Audio/Video Technology and Communications

PATHWAY: Visual Arts

Courses Related to cluster/pathway with descriptions:

- **Introduction to Technology**

Students will be introduced to the following areas of Industrial Technology and Agriculture: Drafting and design, graphics, metalworking, woodworking, agriculture, video production, electronics, and auto mechanics. Shop safety will be emphasized. **Shop fee required.**

- **Photography**

This two-term course includes both digital and traditional photography. Students develop and print black and white photos, and manipulate photos using computer software. Each student must have a 35mm single lens reflex camera with adjustable f/stop and shutter speed available to him/her at all times. **Fee required.**

- **Graphic communication**

This is a hands-on course introducing students to computer graphic design, photography, and printing. Students will produce various projects using desktop publishing, video editing, and illustration software. Other areas of study include, advertising, screen-printing, and offset printing. **Fee required.**

- **Graphic Communication II**

This course includes advanced graphic design training using desktop publishing, illustration, image manipulation, digital video editing, and other software. Other areas of study include advertising, offset printing, screen-printing, and more. Students will produce various printed and media products. **Fee required.**

- **Graphic Communication III**

This course will give students experience in the day-to-day workings of an in-plant print shop. Students will be involved in graphic design, printing, photography, and audio/video production. Students will produce products for the school district and the community. Students must have taken or be enrolled in Graphic Communications II and have the instructor's approval.

- **Television Production**

This course will introduce the basics of video production utilizing a personal camcorder and video editing equipment. Students study video technologies, basic equipment operation, video composition, basic lighting and audio production planning, and visual storytelling. Students work in groups to create video projects utilizing post-production editing.

- **Advanced Television Production**

This course will be a continuation of Film, Television, and Video with the production of a documentary film as the main project. The student will also be involved in advertising and commercial productions. The course will prepare the student to explore the possibility of a career in the film, television, and video industries.

Standards of Technology Literacy (National); see appendix A

1, 2, 3, 8, 10, 12, 17, 19

ELO's (competencies)

Level 1

1. Demonstrate basic digital equipment operation
2. Navigate the Macintosh operating system.
3. Demonstrate basic editing software techniques.
4. Identify the uses of different editing software
5. Recognize copyright law.
6. Identify proper composition
7. Recognize community related careers
8. Explore various TAI opportunities

Level 2

1. Apply basic computer and digital equipment operation
2. Ability to navigate the Macintosh operating system.
3. Apply artistic layout using editing software
 - a. Reproduce shadows and lighting.
4. Set up a picture for proper composition

Level 3

1. Identify the pros and cons of different editing software
2. Apply advanced computer and digital equipment operation, and the ability to navigate and use the Macintosh operating system.

Student Assessment Expectations**Graphic I, II, III**

1. Demonstrate effective computer operation.
2. Create and manipulate artwork using illustration software.
3. Create word art and logos using text manipulation.
4. Produce a video project using digital video editing software.
5. Scan various types of images.
6. Manipulate various photos and images.
7. Shoot a photograph using a traditional film SLR camera.
8. Produce a photographic print or enlargement from film.
9. Shoot a digital photo, optimize, and print the photo.
10. Demonstrate the ability to operate a process camera.
11. Demonstrate the ability to develop ortho film.
12. Demonstrate the ability to assemble images for offset plate making
13. Complete worksheet
14. Develop offset printing plates.
15. List and explain various types of graphic businesses.
16. Identify careers in the graphic arts.
17. Identify printing processes and methods.
18. Diagram various business models used in the graphics industry.
19. Demonstrate an understanding of the point system for text composition.
20. Identify and properly use type style personalities and classifications.
21. Demonstrate creative text composition.
22. Demonstrate proper use of artistic principles and composition guidelines.
23. Demonstrate ability to fit copy using several strategies.
24. Use alignment formats.
25. Identify common errors in typesetting and layout.
26. Demonstrate the use of artistic design principles.
27. Demonstrate the ability to combine elements into a harmonious layout.
28. Demonstrate effective proofreading skills.
29. Optimize layouts for best quality print results.
30. Design a creative and effective advertisement.
31. Demonstrate effective use of illustrations and text in advertisements.

32. Identify target audience demographics and advertising strategies.
33. Demonstrate effective computer operation.
34. Demonstrate advanced understanding of the Macintosh operating system.
35. Operate digitally controlled equipment.
36. Create and manipulate artwork using illustration software.
37. Demonstrate advanced techniques to create complex graphic designs and logos using illustration software.
38. Create word art and logos using text manipulation.
39. Create effective logos and mastheads using various software.
40. Scan various types of images.
41. Manipulate and optimize various photos and images.
42. Use image manipulation software to create artwork.
43. Create special effects using image manipulation software.
44. Incorporate scanned images into various projects and artwork.
45. Perform daily maintenance procedures and prepare materials for the lab.
46. Produce design solutions for a variety of projects.
47. Create effective and artistic layouts for specified projects.
48. Successfully complete printed projects to specifications.
49. Create, scan, develop, and manipulate photographs and graphics for a variety of uses.
50. Safely and accurately mix chemicals for photo and graphic processes.
51. Prepare supplies for specific operations used in Graphic Arts and Photography.
52. Troubleshoot and perform maintenance on computers and printing equipment.
53. Demonstrate the ability to perform binding and finishing to products as needed.

Video Production

1. Setup lighting for a video production.
2. Edit video on a computer.
3. Create graphics for video production.
4. Insert audio on video.
5. Create a highlight slide show.
6. Record various student events.
7. Produce a video project using digital video editing software.
8. Produce an effective pre-production plan.
9. Input video into editing software.
10. Output video to various media.
11. Demonstrate the ability to prepare effective video productions.
12. Demonstrate the ability to prepare an effective slide presentation.

13. Demonstrate the traits of a good employee such as responsibility, punctuality, good attendance, and competence.

Photography

1. Identify parts and controls of a camera.
2. Demonstrate proper use of the camera & produce photos with proper exposure.
3. Take pictures.
4. Evaluate advantages, disadvantages, and features.
5. List characteristics of film.
6. Properly roll film and load into developing tank.
7. Mix chemicals safely and properly for developing.
8. Make adjustments in processing for proper contrast.
9. Produce a contact print.
10. Evaluate a proof sheet for enlargement.
11. Demonstrate an understanding of copyright law and photo ethics.
12. Demonstrate proper use of enlarger.
13. Demonstrate ability to print artistic photos.
14. Demonstrate advanced enlarging techniques to improve photos.
15. Demonstrate the ability to safely and effectively use photographic chemicals.
16. Shoot a photograph using a traditional film SLR camera.
17. Produce a photographic print or enlargement from film.
18. Shoot a digital photo, optimize, and print the photo.
19. Properly operate a process camera.
20. Demonstrate the ability to assemble multicolor images for printing.
21. Use the proper paper and ink for a given job.
22. Print using various inks and papers.
23. Perform basic maintenance on computers and printing equipment.
24. Create a two color screen printing layout and photographic stencil.
25. Adhere a photographic stencil to the screen and block out nonprinting areas.
26. Design, edit and print quality layouts using desk top publishing software.
27. Combine text, art, and photos into effective layouts using desktop publishing software.
28. Use proper file formats and optimize files for output.
29. Create an effective graphic design using principles of art and knowledge of type and composition.
30. Prepare photos and graphics for use in a presentation.

31. Create artistic design for slides and text.
32. Set animations and transitions between slides.
33. Prepare an auto paced, effective, and informative slide presentation

Holmen School District

Technology and Engineering Education

Wisconsin Department of Public Instruction - Career Clusters and Pathways

CLUSTER: **Manufacturing**

PATHWAY: Manufacturing Production Process Development

Courses Related to cluster/pathway with descriptions:

- Grade 6 Tech Ed

Description: During this course students will learn general wood shop safety, the proper use of a variety of hand tools, and the correct operation of the drill press and spindle sander. Students will then construct a puddle jumper (whirly bird). Safety will be emphasized throughout this course. In addition, the students will learn basic drawing skills using CAD software to draw simple three-dimensional drawings. Basic engineering concepts will be explored using West Point Bridge Designer software to build a cost effective virtual bridge.

- Grade 7 Tech Ed

Description: During this course students will learn general wood shop safety, the proper use of a variety of hand tools, and the correct operation of the drill press, band saw, and spindle sander. Students will use a variety of tools and equipment to build a model sized CO2 powered wooden dragster or a custom keepsake wooden box. Safety will be emphasized throughout this course. In addition, the students will learn basic drawing skills using CAD software to draw three-dimensional objects and orthographic projections of those objects. Basic engineering concepts will be explored using West Point Bridge Designer software to build a cost effective virtual bridge.

- Grade 8 Tech Ed

Description: Students work on a variety of projects such as virtual bridge, intarsia, robotics, balsa wood towers, house design, camp chair, custom wooden pens, small wood projects, rockets, small engines, and other student originated projects. If students choose this class, they will be working with power tools and power equipment with teacher guidance and assistance. Safety will be emphasized. Students will learn useful skills and will also help them prepare for the Technology and Engineering classes at the high school.

- **Introduction to Technology**

Students will be introduced to the following areas of Industrial Technology and Agriculture: Drafting and design, graphics, metalworking, woodworking, agriculture, video production, electronics, and auto mechanics. Shop safety will be emphasized. Shop fee required.

- **Hot Metals I**

This course is offered for the student who is interested in learning gas, arc, and MIG welding basics. The student will develop knowledge with metallurgy, blueprint reading, metal estimating, and welding processes. After learning basic welding skills, students will fabricate an individual project such as a Can Crusher. Shop fee required.

- **Hot Metals II**

This course is designed for the student who is interested in metal fabrication techniques. The class will design, estimate, and fabricate a community or school weldment project. In addition to the class project, the student will fabricate individual projects utilizing Arc, MIG, and TIG welding. Shop fee required. Transcribed Credit Available.

- **Machine Shop I**

This course is designed for the student who wants to learn about the lathe, milling machine, grinders, drill presses, sheet metal equipment and foundry tools. Students will explore metallurgy, precision measurement, hand tool use, machine use, metal surface finishes, and machining fundamentals. Projects include a large toolbox and c-clamp. Shop fee required.

- **Machine Shop II**

This course is designed for the student to learn intermediate skills of machine operation and to complete precision projects. Computer Numeric Controlled (CNC) machines will be used in addition to traditional machining methods. Projects include a large c-clamp, CNC name plate, and hammer. Shop fee required.

- **Woods I**

This course will allow you to make a project(s) out of wood. The instructor will guide the project(s) so that you are successful and have a better understanding of the woodworking processes. The projects are based on your previous experience with woodworking. You will learn how to safely use many woodworking tools in the lab, which include: table saw, jointer, planer, router, etc. Open to all students. Shop fee required.

- **Woods I for Females**

This GIRLS ONLY class empowers girls to learn about woodworking without the presence of boys. You will choose and build a project that the instructor has previously researched. In making your wood project you will learn many lifelong learning skills, which include; planning, problem solving, safety, self-esteem, pride, and a can-do attitude. Most of the class will be spent on your projects. Each student will be required to safely perform several operations using the shop machinery and produce a quality project. SHOP FEE REQUIRED.

- **Woods II**

This term course will allow you to make a project(s) out of wood. The instructor will guide the project(s) so that you are successful and have a better understanding of the woodworking processes. The projects are based on your previous experience with woodworking. You will learn how to safely use many woodworking tools in the lab, which include: table saw, shaper, jointer, planer, router, etc. This class is the first step in a path to becoming a Mechanical Engineer. Shop fee required.

- **Advanced Wookworking**

This advanced term course will allow you to make a project(s) that you have designed. You are responsible for a design that will be challenging to make. You will learn safe operation of woodworking tools and machinery. The projects are based on your previous experience with woodworking. You will learn advanced techniques in wood joinery, finishing, and industrial standards. Transcribed Credit Available. Shop fee required.

Standards of Technology Literacy (National); see appendix A

1 , 3 ,6 ,8 ,9 ,17 , 15 ,19

ELO's (competencies)

Level 1

1. Demonstrate safe techniques with available tools and equipment.
2. Measure accurately.
3. List material needed to make a given project.
4. Assemble a given project.
5. Use machines to process wood and metal.
6. Apply a given finish.
7. Recognize different community related jobs.
8. Identify different types of raw materials.

Level 2

1. Apply safe techniques with tools and equipment.
2. Differentiate various materials.
3. Differentiate between different finishes.
4. Estimate the amount of material needed to make a given project.
5. Modify a given project.
6. Assemble a given project
7. Explore various TAI career opportunities.

Level 3

1. Select the preferred material to solve a given problem.
2. Estimate the amount of material needed a project.
3. Design and assemble a project.
4. Choose a finish based on project.
5. Compare different community related jobs.

Student Assessment Expectations

Woods I, II, and Advanced Woodworking

1. Use portable power tools (safely, effectively, efficiently, accurately).
2. Use hand tools (safely, effectively, efficiently, accurately).
3. Use stationary power tools (safely, effectively, efficiently, accurately).
4. Complete labs (safely, effectively, efficiently, accurately).
5. Measure accuracy to a 1/16 of an inch.
6. Calculate board feet, square feet and linear feet for material.
7. Fill out a bill of materials.
8. Glue boards together to add width.
9. Glue a project together to obtain strength.
10. Screw a project together using the proper size and type of screw.
11. Nail a project together using the proper size and type of nail.
12. Determine which joint or combination of joints would work best for any given project.
13. Square a board.
14. Choose the right grit sandpaper for the job.
15. Cut and attach sandpaper to equipment.
16. Apply proper techniques for sanding.
17. Apply stain properly.
18. Fill holes, scratches, etc. correctly.
19. Apply a smooth dust free finish to any project.

20. Correctly pick out a stain, fill or finish for a project.
21. Sharpen hand tools.
22. Demonstrate how to adjust and/or maintain equipment
23. Identify different species of wood.
24. Use their measurement skills to create a functional design.
25. Design on paper or computer a wood project.
26. Edit a design.
27. Make a cabinet with one of the types of cabinet construction techniques.
28. Make a cabinet door using the proper cabinet construction.
29. Use a nail gun to assemble a project using the proper size, type, and pressure.
30. Determine which one or combination of fasteners would work best for any given joint.
31. Apply a finish by use of a spray gun.
32. Apply different types of finishes. Ex. gel stains lacquer, &/or natural stain

Hot Metals I, II and Machine Shop I, II

1. Pass safety tests and perform safe operation of equipment/tools.
2. Weld with different types of Shield Metal Arc Welding currents.
3. Use welding terminology used in the Shielded Metal Arc Welding and oxyacetylene welding process.
4. Demonstrate welding with E6013 electrodes.
5. Demonstrate welding of steel with the SMAW, GMAW and oxyacetylene welding processes.
6. Use welding terminology used in the SMAW, GMAW and oxyacetylene welding process.
7. Demonstrate setup, handling and identification of SMAW, GMAW and oxyacetylene welding equipment.
8. Show the welding machines and polarities used in the arc welding process.
9. Identify and describe the proper handling and assembly of arc oxyacetylene welding equipment.
10. Produce a welding project.
11. Estimate the cost of various metal working projects.
12. Design a metal project
13. Demonstrate welding
14. Fabricate a welding project
15. Connect with community through related curriculum
16. List the major departments or functions in a metal manufacturing company and explain how they affect production units.
17. Define terminology related to metals manufacturing and the machine trades.
18. Explain and demonstrate CNC operations.

19. Demonstrate general safety rules and regulations in the machine shop environment.
20. Explain OSHA and EPA requirements/guidelines.
21. Explain the causes of fires and methods of preventing and extinguishing.
22. Perform addition, subtraction, multiplication, & division of whole numbers, fractions, & decimals with/without a calculator.
23. Convert to metric, decimal, or fractional measurements with or without a calculator or equivalent chart.
24. Use rules, protractors, feeler gages, thread pitch gages, radius gages, combination square and basic transfer tools.
25. List layout tools and equipment.
26. Layout the location of hole centers, arcs, and surface features.
27. List basic hand tools and power tools for bench work.
28. Describe the components, the safe use, and maintenance of bench and pedestal grinders.
29. Perform bench working operations such as hacksawing, filing, punching, drilling, tapping, drill bits, and sharpening tools.
30. Describe the components, the safe use, and maintenance of the equipment.
31. Perform saw operations including preparing stock, selecting and installing correct blades, setting the feeds and speeds, clamping stock and deburring.
32. Perform drill press operations, center drilling, drilling, and countersinking.
33. Describe the components, the safe use, & maintenance of the equipment.
34. Explain basic work-holding devices.
35. Perform turning processes, straight turning, facing, chamfering, knurling, and drilling.
36. Describe the components, the safe use, & maintenance of the equipment.
37. Explain basic work-holding devices.
38. Perform milling operations.
39. Explain basic foundry safety practices.
40. List sequence of ramming operations.
41. Demonstrate safe metal pouring procedures.
42. List the major departments or functions in a metal manufacturing company and how they affect production units.
43. Define terminology related to metals manufacturing and the machine trades.
44. Explain CNC operations.
45. Demonstrate general safety rules and regulations in the machine shop environment.
46. Explain OSHA and EPA requirements & guidelines.
47. Explain the causes of fires and methods of preventing and extinguishing.
48. Describe the components, the safe use, and maintenance of the equipment.
49. Perform advanced drill press operations, center drilling, drilling, and countersinking.
50. Describe the components, the safe use, and maintenance of the equipment.
51. Explain advanced work holding devices.

52. Perform turning processes, straight turning, facing, chamfering, knurling, and drilling.
53. Describe the components, the safe use, and maintenance of the equipment.
54. Explain advanced work holding devices.
55. Perform milling operations.
56. Construct patterns for pouring.
57. Describe the various types of CNC machines.
58. Develop a CNC program.
59. Edit changes within the CNC program.

Holmen School District

Technology and Engineering Education

Wisconsin Department of Public Instruction - Career Clusters and Pathways

CLUSTER: Science, Technology, Engineering, and Mathematics

PATHWAY: Engineering and Technology

Courses Related to cluster/pathway with descriptions:

- **Grade 6 Tech Ed**
Description: During this course students will learn general wood shop safety, the proper use of a variety of hand tools, and the correct operation of the drill press and spindle sander. Students will then construct a puddle jumper (whirly bird). Safety will be emphasized throughout this course. In addition, the students will learn basic drawing skills using CAD software to draw simple three-dimensional drawings. Basic engineering concepts will be explored using West Point Bridge Designer software to build a cost effective virtual bridge.
- **Grade 7 Tech Ed**

Description: During this course students will learn general wood shop safety, the proper use of a variety of hand tools, and the correct operation of the drill press, band saw, and spindle sander. Students will use a variety of tools and equipment to build a model sized CO2 powered wooden dragster or a custom keepsake wooden box. Safety will be emphasized throughout this course. In addition, the students will learn basic drawing skills using CAD software to draw three-dimensional objects and orthographic projections of those objects. Basic engineering concepts will be explored using West Point Bridge Designer software to build a cost effective virtual bridge.
- **Grade 8 Tech Ed**

Description: Students work on a variety of projects such as virtual bridge, intarsia, robotics, balsa wood towers, house design, camp chair, custom wooden pens, small wood projects, rockets, small engines, and other student originated projects. If students choose this class, they will be working with power tools and power equipment with teacher guidance and assistance.

Safety will be emphasized. Students will learn useful skills and will also help them prepare for the Technology and Engineering classes at the high school.

- Electronics I
The student will learn about direct current (DC) theory and how it impacts the world of electronics. He/she will understand electronic component circuitry and develop his/her own electronic circuits. A strong Algebra background is recommended. **Shop fee required.**
- Electronics II
The student will learn about direct current (DC) theory and how it impacts the world of electronics. He/she will understand electronic component circuitry and develop his/her own electronic circuits. A strong Algebra background is recommended. **Shop fee required.**

ELO's (competencies)

Level 1

1. Recognize various community related careers

Level 2

1. Explore various TAI career opportunities.
2. Interpret and construct a direct current circuit.(1)
3. Demonstrate proper soldering procedures (1)
4. Explain and measure resistance, voltage current, and Ohm's law.(1)
5. Analyze, construct and evaluate various simple electronic circuits
6. Analyze, construct and evaluate various advanced electronic circuits

Level 3

1. Compare various TAI related careers.
2. Discuss magnetism. (2)
3. Interpret and solve problems relating to principles of alternating current.(2)
4. Demonstrate how a different electronic components work.

Student Assessment Expectations

1. Submit auxiliary views drawing
2. Submit a direct current circuit model

- **Beginning Cad**
The beginning CAD student will learn about and develop skills in the principles of Computer Aided Drafting (CAD), basic operations of CAD software, sketching techniques, multi-view drawings, dimensioning techniques, auxiliary views, pictorials, sectional views, detail and assembly drawings.
- **Auto CAD Lab**
This Engineering and Architectural Design Lab is for students who have completed Beginning AutoCAD and wish to learn and develop additional design skills in AutoCAD. The student will have the opportunity to complete projects in engineering, manufacturing, architecture, and computer simulation activities. Students will have the option of completing design projects such as bridge building, house construction, airplanes, rockets, catapults, and industrial cranes. Students will use AutoCAD LT, Inventor 3D Modeling, TrainZ, Flight Simulator, Simm City 4, and Construction Estimation design software. The goal of this repeatable, AutoCAD Lab is to accommodate students who wish to seriously pursue “hands on” skills in any of the design professions such as Engineer, Architect, Designer, Contractor, Estimator, Project Manager and any other careers associated with design.

Standards of Technology Literacy (National); see appendix A

1, 2, 3, 8, 9, 10, 11, 17

ELO's (competencies)

Level 1

- 1 Recognize various community related careers
2. Draw a simple 3D object using basic CAD tools
3. Draw an object in 3 views using basic CAD tools
4. Create and design a house floor plan using basic CAD tools

Level 2

- 1 Explore various TAI career opportunities.
- 2 Draw complex 3-D models.(1)
- 3 Design and create a mechanical engineering drawing.(1)
- 4 Prepare sectional views.(1)

- 5 Prepare auxiliary views.(1)
- 6 Interpret and construct a direct current circuit.(1)
- 7 Identify geometric terms and apply geometric construction techniques.(1)
- 8 Identify geometric terms and apply geometric construction techniques. (1)
- 9 Demonstrate proper soldering procedures (1)
- 10 Explain and measure resistance, voltage current, and Ohm's law.(1)
- 11 Analyze, construct and evaluate various simple electronic circuits
- 12 Analyze, construct and evaluate various advanced electronic circuits

Level 3

Student Assessment Expectations

1. Research and document 3 TAI related careers.
2. Submit accurate drawings replicating a visual drawing or object.
3. Submit accurate 3 view drawings of a visual drawing or object.
4. Submit an accurate house floor plan per project requirements
5. Submit complex 3-D model drawings
6. Submit a mechanical engineering drawing
7. Submit sectional views drawing

Holmen School District

Technology and Engineering Education

Wisconsin Department of Public Instruction - Career Clusters and Pathways

CLUSTER: Transportation, Distribution, and Logistics

PATHWAY: Facility and Mobile Equipment Maintenance

Courses Related to cluster/pathway with descriptions:

- **Basic Auto Maintenance**
Basic Auto Maintenance is geared for the beginning level student who wants to learn the basics of an automobile. During the class students will learn and perform basic auto maintenance and repair. It is recommended that students have a valid driver's license. **Shop fee required.**
- **Basic Auto Maintenance for Females**
Basic Auto Maintenance is a class designed for female students who need a basic understanding of cars and car care. The expectations are to be productive, to work hard, and to gain a basic understanding of tools and cars, and learn how to use the tools. In this class, you will learn and perform auto maintenance and repairs. You are expected to follow all school rules in class as well as all shop rules. When in a shop environment, it is especially important to know all safety procedures and to follow them. It is a great learning experience, and it can teach you some very valuable skills that can help you in the future with automobile repairs. If you chose to join this class, you will have a great time working with the teacher as well as fellow classmates while you learn a great deal about home car care and basic auto repair. To receive an A in this class, you will be expected to complete all forty activities assigned. Some of the activities we will do include changing tail lights, installing wiper blades, replacing front headlights, changing a spare tire, and other practical car care maintenance. The teacher and other students will provide assistance, so no student will need to work independently. Please consider joining this fun learning experience.

- **Auto Mechanic Services I**

Auto Mechanic Services is for the student who is interested in making a career of auto mechanics. Areas covered are engines, fuel systems, cooling systems, brakes, test equipment, automotive tools, and more. Access to a car is a must for this class. It is not necessary to own a car, but you must be able to bring a car in so you can perform certain procedures. Enrollment is limited to 18 students. **Shop fee required.**

- **Auto Mechanic Services II**

Auto Mechanic Services II involves the disassembly and assembly of an automotive engine. Students may work on an engine of their own or one supplied by the school. Students will also study the electrical components of an automobile. **Shop fee required.**

- **Advanced Automotive**

Advanced Auto is designed for students who are pursuing a career in the mechanical field. This class would involve in-depth study of electrical theory and electrical application. Diagnostics of mechanical and electrical systems would be a major part of the class. Mechanical fundamentals will also be taught. Advanced Auto is designed for students who are pursuing a career in the mechanical field. This class would involve in-depth study of electrical theory and electrical application. Diagnostics of mechanical and electrical systems would be a major part of the class. Mechanical fundamentals will also be taught

- **AG Mechanics & Small Engines**

This course deals with the improvement, maintenance, construction and design of agricultural-related products. Other topics include metalworking, carpentry, mechanical engineering technology, and small engines.

Standards of Technology Literacy (National); see appendix A 1, 2, 3, 4, 5

ELO's (competencies)

1. Demonstrate the safe and proper use of hand tools, power tools, and safety equipment found in a vehicle service facility.
2. Demonstrate vehicle redelivery and general safety inspection.
3. Demonstrate the use of vehicle exterior and interior protective procedures.
4. Demonstrate basic engine maintenance
5. Identify and describe common automotive maintenance problems and perform routine maintenance/ servicing in the areas of safety, lubrication, suspension and steering.

Student Assessment Expectations

Level 1

1. Demonstrate safety awareness and the use of personal safety related equipment.
2. Identify the proper use of fire protection equipment.
3. Demonstrate the safe and proper use of the basic hand tools required to perform vehicle service.
4. Demonstrate the proper care for the basic hand tools required to service a vehicle.
5. Demonstrate the proper care and use of measuring tools.
6. Demonstrate the proper care of pneumatic power tools.
7. Demonstrate the safe and proper use of vehicle jacking and hosting equipment.
8. Demonstrate the use of vehicle exterior and interior protective covers and clean up procedures.
9. Check and replenish all vehicle fluid levels.
10. Verify operation of all vehicle convenience items and safely restraints.
11. Verify proper operation of windshield wipers and washer.
12. Inspect tires visually and check pressure.
13. Check steering wheel for excessive play.
14. Check wheel lug nut torque.
15. Visually check vehicle under carriage.
16. Demonstrate the use of vehicle exterior and interior protective covers and clean up procedures

Level II

1. Change engine oil and filter.
2. Replace air and fuel filter.
3. Change engine coolant.
4. Change spark plugs.
5. Visually inspect the engine for fuel leaks.
6. Visually inspect engine hoses and belts.
7. Demonstrate the use of Diagnostic Equipment.

Level III

1. Describe automotive lubricants and the problems resulting from lack of scheduled maintenance.
2. Inspect, test, and repair/replace cooling system components, and check coolant levels.
3. Inspect and service air cleaners and filters utilizing proper techniques.
4. Inspect tires for abnormal tire patterns/pressure.
5. Inspect/test battery.
6. Perform vehicle safety inspection.
7. Identify suspension parts and operation.
8. Inspect and service drive train.
9. Identify brake system components.
10. Demonstrate basic brake service.

Instructional Strategies & Assessment

The Holmen School District Agriscience and Technology & Engineering Education Department uses a variety of instructional strategies and assessment techniques. We prepare students by using critical thinking, problem solving, inquiry based, and leadership. We utilize lecture, demonstration, and project based learning activities. Our assessment techniques are performance based. We evaluate students based on professional responsibilities, rubrics, observation, safety, craftsmanship, reflections, journals, presentations, project outcomes and teamwork. Our instructional strategies and assessment utilize the core academic standards.



School District of Holmen

Agriculture, Natural Resources Education and Technological Education Curriculum

Appendices 2011-12

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State and National Standards

- ***Agricultural Education:***
<http://www.dpi.wi.gov/ag/agbackground.html>
- ***Agricultural & Natural Resource Discipline Literacy:***
<https://sites.google.com/a/dpi.wi.gov/afnr-disciplinary-literacy/>
- ***Career and Tech Ed Home:***
<http://www.dpi.wi.gov/cte/index.html>
- ***Technology and Engineering Education Discipline Literacy:*** <https://sites.google.com/a/dpi.wi.gov/tee-dl/home>

School District of Holmen Bloom's Taxonomy

COGNITIVE DOMAIN VERBS					
Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Cite Count Define Describe Draw Enumerate Identify Index Indicate Label List Match Meet Name Outline Point Quote Read Recall Recite Recognize Record Repeat Reproduce Review Select State Study Tabulate Trace Write	Add Approximate Articulate Associate Characterize Clarify Classify Compare Compute Contrast Convert Defend Describe Detail Differentiate Discuss Distinguish Elaborate Estimate Example Explain Express Extend Extrapolate Factor Generalize Give Infer Interact Interpolate Interpret Observe Paraphrase Picture graphically Predict Review Rewrite Subtract Summarize Translate Visualize	Acquire Adapt Allocate Alphabetize Apply Ascertain Assign Attain Avoid Back up Calculate Capture Change Classify Complete Compute Construct Customize Demonstrate Depreciate Derive Determine Diminish Discover Draw Employ Examine Exercise Explore Expose Express Factor Figure Graph Handle Illustrate Interconvert Investigate Manipulate Modify Operate Personalize Plot Practice Predict Prepare Price Process Produce Project Protect Provide Relate Round off Sequence Show Simulate Sketch Solve Subscribe Tabulate Transcribe Translate Use	Analyze Audit Blueprint Breadboard Break down Characterize Classify Compare Confirm Contrast Correlate Detect Diagnose Diagram Differentiate Discriminate Dissect Distinguish Document Ensure Examine Explain Explore Figure out File Group Identify Illustrate Infer Interrupt Inventory Investigate Lay out Manage Maximize Minimize Optimize Order Outline Point out Prioritize Proofread Query Relate Select Separate Size up Subdivide Summarize Train Transform	Abstract Animate Arrange Assemble Budget Categorize Code Combine Compile Compose Construct Cope Correspond Create Cultivate Debug Depict Design Develop Devise Dictate Enhance Explain Facilitate Format Formulate Generalize Generate Handle Import Improve Incorporate Integrate Interface Join Lecture Model Modify Network Organize Outline Overhaul Plan Portray Prepare Prescribe Produce Program Rearrange Reconstruct Reference Relate Reorganize Revise Rewrite Specify Summarize Write	Appraise Assess Compare Conclude Contrast Counsel Criticize Critique Defend Determine Discriminate Estimate Evaluate Explain Grade Hire Interpret Judge Justify Measure Predict Prescribe Rank Rate Recommend Release Select Summarize Support Test Validate Verify

School District of Holmen Bloom's Taxonomy

Affective Domain Verbs				
Receiving	Responding	Valuing	Organization	Internalization
Ask Choose Follow Give Hold Select Show interest	Accept responsibility Answer Assist Be willing to comply Conform Enjoy Greet Help Obey Perform Practice Present Report Select Tell	Associate with Assume responsibility Believe in Be convinced Complete Describe Differentiate Have faith in Initiate Invite Join Justify Participate Propose Select Share Subscribe to Work	Adhere to Alter Arrange Classify Combine Defend Establish Form judgments Identify with Integrate Organize Weigh alternatives	Act Change behavior Develop code of behavior Develop philosophy Influence Judge problems / issues Listen Propose Qualify Question Serve Show mature attitude Solve Verify

Psychomotor Domain Verbs			
Activate Adjust Align Apply Arrange Assemble Balance Break down Build Calibrate Change Clean Close Combine Compose Connect Construct	Correct Create Demonstrate Design Dismantle Drill Fasten Fix Follow Grind Grip Hammer Heat Hook Identify Load Locate	Loosen Make Manipulate Mend Mix Nail Operate Paint Press Produce Pull Push Remove Repair Replace Rotate Sand	Transfer Troubleshoot Tune Turn on/off Type Saw Sharpen Set Sew Sketch Start Stir Use Weigh Wrap

School District of Holmen Transcripted Credits Information

Holmen School District Agriscience and Technology & Engineering Departments offer transcripted credits for a number of its courses. Use the following link to check on the post-secondary credit that will be given for Holmen courses:

<http://tis.uwsa.edu/resources/ga/agreements.shtml>



Ways in Which High School Students Can Earn Technical College Credit through Articulation

Articulation refers to aligning high school and postsecondary curricula to create sequences of courses offering skill attainment with unnecessary duplication. Articulation focuses on providing opportunities for high school students to take college level course work in order to get a head start on earning college credits while continuing to fulfill high school graduation requirements. If your school district is interested in articulation, check first with Tech Prep at your local technical college. If your local technical college does not offer a particular program, then you can explore an “out of district” agreement with a different technical college.

There are two types of articulation – advanced standing and transcripted credit. The table below outlines the similarities and differences between the two types. Articulation agreements are formal agreements created between public school districts and postsecondary institutions. Students benefit from both types of articulation. However, it is important to note the specific differences in benefit between advanced standing and transcripted credit.

Terminology	Advanced Standing	Transcripted Credit
DEFINITIONS	Advanced Standing may also be referred to as <ul style="list-style-type: none"> “credit in escrow” because the application of the credit is delayed until students enroll in a technical college program. 	Transcripted Credit may also be referred to as: <ul style="list-style-type: none"> “dual credit courses” as high schools also give credit. “direct credit” because students are earning technical college credit directly from the technical college.
RELATIONSHIP BETWEEN HIGH SCHOOL AND TECHNICAL COLLEGE COURSES	High school course(s) or competencies are determined to be equivalent or comparable to a technical college course. Agreements require a minimum of a 3.0 grade point on a 4.0 scale for students to earn credit. High school grading policies and standards are followed.	Technical college curriculum is taught to high school students. A variety of delivery methods may be used. Students earn both high school credit and technical college credit simultaneously. Technical college grading policies and standards established in the agreement are followed.
TEACHER	Course is taught by a high school teacher who holds a current DPI license in the related area of instruction.	Course is taught by a WTCS certified technical college instructor or a high school instructor who holds a current DPI license in a related area and has been granted WTCS articulation certification under Wisconsin Administrative Code TCS 3.03(9)(b) .
AWARDING CREDIT	The student must meet all conditions of the articulation agreement in order to be eligible for advanced standing credit. Technical college credits are awarded; however, technical college grades are not given for these courses.	Upon successful completion of course, grades are posted to an official technical college transcript and tabulated in the student’s technical college GPA. Students earn technical college credit and high school credit simultaneously.

DOCUMENTATION	<p>The school district maintains the student's transcript. Under DPI, PI 26 Education for Employment; <i>The district must include specific information on pupil transcripts. This information includes the title of the course; the high school credits earned and whether those credits were earned through advanced standing, transcribed credit, or the advanced placement program; and the participating postsecondary institution, when appropriate.</i></p> <p>Technical colleges may opt to give a "certificate of eligibility" that specifies the course title, course number and credits for which advanced standing may be granted upon enrollment at a technical college.</p>	<p>The technical college maintains the student's transcript for technical college course work. The school district maintains the student's transcript including high school and technical college course work.</p> <p>Under DPI, PI 26 Education for Employment; <i>The district must include specific information on pupil transcripts. This information includes the title of the course; the high school credits earned and whether those credits were earned through advanced standing, transcribed credit, or the advanced placement program; and the participating postsecondary institution, when appropriate.</i></p>
DATA REPORTING	School districts receiving Perkins funds are required to report current articulation in the Vocational Education Enrollment Reporting System (VEERS).	The technical college reports the course in the WTCS Client Reporting System.
AGREEMENT/COSTS	Involves a written articulation agreement. No fees are charged to the student or school district.	Involves a written contractual agreement and cost-neutral arrangement between a school district and a technical college.
TRANSFER TO ANOTHER WTCS TECHNICAL COLLEGE	According to the Credit for Prior Learning policy (Educational Services Manual 12.10.5), technical college credit awarded for high school coursework covered by an articulation agreement at the originating technical college shall be accepted as credit toward completion of a comparable course or courses by the receiving technical college.	All courses taken for technical college credit appear on a student's transcript and shall be transferrable to other technical colleges who have the same program.

Note: Transcribed credit courses that are part of an articulation agreement are one avenue through which high school students may enroll in technical college courses. Other options that allow high school students to attend technical colleges are:

- *Youth Options* – High school juniors and seniors who meet certain requirements are able to enroll in courses at a technical college for both high school and technical college credit.
- *Two-Year Youth Apprenticeship Programs* –Some Youth Apprenticeship programs include transcribed credit courses. (Others may include advanced standing courses.)
- *38.14(3) Contracted Services* – Sec. 38.14(3), stat., enables technical colleges to contract with school districts to provide a wide variety of educational services.

School District of Holmen

Glossary of Curriculum Related Terms

Agriculture-Science growing plants and animals.

Inquiry based instruction- A teaching method that combines the curiosity of students and the scientific method to enhance the development of critical thinking skills while learning.

alternative assessment – Assessments that ask students to construct, perform, or demonstrate their learning in manner that allows for a full understanding of their learning to be measured. Also termed performance assessment.

authentic assessment – Assessment that takes place in a real-life context or one that approximates how the skill or knowledge would be used in the “real world”.

benchmark or target – Assessments administered throughout the school year to give teachers formative feedback on how their students are performing. A benchmark is the target at any particular time.

common assessment – An assessment given by two or more instructors with the intention of collaboratively examining the results for instructional planning for individual students and curriculum instruction, and/or assessment modifications.

content standards – Those standards that describe the information or skills children should learn that are specific to a particular discipline or content area.

course standards – Statements that define what students at a specific school level or in a specific course should achieve by the time they leave that particular level of school.

exit standards - The academic standards that students should achieve by the time they graduate from high school; these standards set the tone and give focus for what students should learn at the underlying grade levels.

formative assessment – This is an assessment **for** learning and is a check of understanding and application so that, if need be, adjustments can be made to the teaching and learning activities. These are often frequent and ongoing assessments. The results are used to gain an understanding of what students know and do not know to make responsive changes in teaching and learning. Benchmarks are clearly defined in order to provide interventions/enrichments.

lesson standards – Statements that define goals for instruction and students’ learning over the course of a lesson.

performance – Observable affective or psychomotor behaviors demonstrated by students.

performance indicators – The part of the content standard that defines the skill or performance desired for students to demonstrate.

performance standards- The measure of how well students know and are able to work with (apply) the desired content standards. The standards describe what students must do, and how well they must do this, in order to show they have achieved the content standard.

performance task – used interchangeably with alternative assessment task and performance assessment task; those specific assessment tasks that require students to apply or do something with their learning in order to show their progress toward meeting desired standards.

portfolio – A collection of a student’s work over time that demonstrates his or her progress toward the attainment of specific learning standards.

program standards – Broad statements that delineate the overall K-12 goals for a specific subject area for students in a particular state or district.

progress monitoring – A quick, frequent & consistent measure used to assess student progress and to evaluate the effectiveness of interventions. Instruction and intervention decisions are made based on these results.

Response to Intervention (RtI) - RtI is an individualized, comprehensive assessment and intervention process, utilizing a problem-solving framework to identify and address student academic difficulties using effective, efficient, research-based instruction

running record - observation notes made by the teacher about a student’s oral reading ability. By looking at the running record, the teacher can analyze the type of reading and instruction that is best suited for the student.

rubric – A scale of criteria that explains in detail the possible levels of performance for an alternative assessment task.

Screening – A quick (to be defined) universal assessment given at the beginning of new learning; used to identify students who may be “potentially at risk.”

standards – Statements that delineate what students should know and be able to do by the time they graduate from K-12 education.

S.M.A.R.T. goals – Originally coined by Peter Drucker in 1954, this acronym is used to help educators write quality goals. Specific or Strategic, Measurable, Attainable, Results-focused, Time-bound. An example: By the end of this year, at least 90% of students will meet the grade-level benchmark for running records.

summative assessment – This is an assessment **of** learning and is intended to measure end-of-unit or end-of-course knowledge and understanding; usually require students to demonstrate proficiency of all the essential knowledge and skills.

**School District of Holmen
Statutes and Policies Addressing Student Needs**

American Indian Studies Program

§115.28(17)(d), Wis Stats. AMERICAN INDIAN LANGUAGE AND CULTURE EDUCATION.

(d) Develop a curriculum for grades 4 to 12 on the Chippewa Indians' treaty-based, off-reservation rights to hunt, fish and gather.

§121.02, Wis Stats. School district standards. (1) Except as provided in §118.40 (2r)(d), each school board shall: (L) 4. Beginning September 1, 1991, as part of the social studies curriculum, include instruction in the history, culture and tribal sovereignty of the federally recognized American Indian tribes and bands located **in this state** at least twice in the elementary grades and at least once in the high school grades.

2005 ASSEMBLY BILL 314 - AN ACT to amend 118.01 (2) (c) 6. of the statutes; relating to: directing school boards to provide instruction about the recent history of the Hmong people.

Current law requires each school board to provide an instructional program designed to give pupils knowledge of state, nation, and world history. This bill directs school boards to include the role of the Hmong in fighting for the United States in the Vietnam War, the persecution of the Hmong by the Laotian government after the Vietnam War, and the reasons for the emigration of many Hmong to the United States.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

SECTION 1. 118.01 (2) (c) 6. of the statutes is amended to read: 118.01 (2) (c) 6.

Knowledge of state, national, and world history, including the role of the Hmong in fighting for the United States in the Vietnam War, the persecution of the Hmong by the Laotian government after the Vietnam War, and the reasons for the emigration of many Hmong to the United States.

CHILDREN AT RISK Standard n (statute under WI Statute 118.153)

Definition: Pupils in grades 5-12 who are at risk of not graduating from high school because they are dropouts, or they can be defined in two or more of the following areas: one or more years behind their age group in the number of high school credits attained; two or more years behind their age group in basic skill levels; habitual truants (as defined in s.118.16(1)(a); parents; adjudicated delinquents; 8th grade students whose scores in each subject area on the WKCE was below the basic level and who failed to be promoted to the ninth grade.

Children at risk, Standard n – Interventions for Struggling Learners:- The School District of Holmen uses a variety of interventions to meet the needs of struggling

learners. MAP and common assessment data is used to determine which students would benefit from extra support (reading, writing, Pathways, and Auto Skills). This data is used to differentiate instruction through flex grouping, small groups and working 1-on-1 with students. Team taught classes are used to differentiate instruction. Some teachers adjust the pace of their instruction or use supplemental materials to enhance their instruction.

ENGLISH LANGUAGE LEARNERS (ELL), (PI 13 and WI Statute 115.95)

PI 13 states that a district establishes identification, assessment, classification, and reporting requirements if pupil population includes one or more LEP pupils. This subchapter also establishes criteria and procedures to be used by a school district in determining whether to administer a test under s. 118.30 or 121.02 (1) (r), Stats., to an LEP pupil. Further, according to State Statute 115.96, a district must “provide equal educational opportunities by ensuring that necessary programs are available for limited-English proficient pupils while allowing each school district maximum flexibility in establishing programs suited to its particular needs.”

ELL staff will help support and provide guidance to teachers when working with LEP pupils. Teachers should look for ways to enrich, add to, and accelerate ELLs’ language development with the curriculum and learning activities. A variety of student-centered methodologies such as small group learning or thematic instruction can enhance the context for learning.

English Language Learners (ELL) : Teachers and staff in the School District of Holmen offer a variety of services to meet the needs of English Language Learners in the classroom. In the upper-most grades, the district offers a wide variety of courses meant to meet students where they are individually. The instruction can be tailored to be accessible to the learner at almost any level, and the learners who need the most support are often placed in the smallest groups or team taught classes so as to receive more explicit instruction. Additionally, a variety of concrete and experiential learning techniques are used district-wide to support language arts. Other strategies include the deliberate use of common vocabulary and explicit instruction of those terms, real-life connections, and for the neediest students, some forms of assistive technology are used to scaffold the students learning based on the level of proficiency. Finally, the district ESL staff continues to work to educate all staff on the specific needs of the English Language Learner. ESL staff continues to work toward incorporating the WIDA Standards for English Language Development into the Social Studies curriculum that every student receives.

TALENTED AND GIFTED (TAG) Standard t (statute under WI Statute 118.53)

Talented and gifted students are those individuals at an elementary or secondary level who, because of outstanding abilities, are capable of high performance. Students who are capable of high performance include those with demonstrated achievement and/or potential in any of the following areas, singly or in combination: (1) general intellectual ability, (2) specific academic aptitude, (3) creative or productive thinking, (4) leadership ability, (5) visual arts,

(6) performing arts, (7) psychomotor ability, (8) talent associated with the student's cultural heritage, (9) psycho-social ability.

It is understood that task commitment on the part of the student is an integral ingredient in the delivery of services. TAG staff will help provide support and guidance to teachers when working with TAG students. A variety of methodologies such as small group learning, acceleration and differentiation can enhance the context of learning.

Talented and Gifted, Standard: Talented and Gifted (TAG) students are served by the regular education teachers and in conjunction with the Talented and Gifted teachers of the District. These students are identified based on a combination of standardized tests and nominations. TAG programming aligns with the Wisconsin Pyramid Model of delivery. Services include but are not limited to: Differentiation, flexible grouping, compacting, and advanced placement courses. In addition, there are a number of events that create and promote mathematics sponsored by the district and the Mississippi Valley Gifted and Talented Network. The academic performance of the program is assessed by identified student performance on standardized tests.

INFUSED CURRICULAR AREAS

COMPUTER LITERACY and TECHNOLOGY

Students in the School District of Holmen use technology as a tool and have many opportunities to develop technology literacy. Students develop the ability to find generate, evaluate and apply information through the use of technology and prepare for life-long learning while developing 21st Century skills.

On May 27, 2009, the School Board approved a District Combined Information and Technology Plan. *The vision is "Embracing 21st Century Learning for All."*

Definitions:

Digital Literacy is the ability to responsibly use appropriate technology to communicate, solve problems, and access, manage, integrate, evaluate and create information to improve learning in all subject areas and to acquire lifelong knowledge and skills in the 21st century.

21st Century Skills: 21st Century Skills represent the perspective required in light of historical events, globalization, and the idiosyncrasies of the Digital Age (digital age literacy, inventive thinking, effective communication and high productivity).

Computer literacy and technology: Teachers use a variety of technology applications and tools to research, report, compile, and inquire about. Multiple forms of assistive technology also support the special needs learner.

DIVERSITY

The vision of diversity in the School District of Holmen is to provide a nurturing environment in which each individual has the opportunity to reach his/her full human potential. This will be supported through strategic planning and building goals; curriculum planning and implementation, staff development, and resource selection and allocation. The plan will be monitored through data collection and analysis.

Diversity: By including language arts content from a variety of cultures and personal experiences, teachers enhance the learning experience for all students. Recognizing the diversity within a classroom enriches the learning for all.

EDUCATION FOR EMPLOYMENT (formerly SCHOOL TO WORK) – PI 26.01

Education for employment is one of Wisconsin's 20 school district standards. It is often referred to as Standard (m) and its purpose is to ensure that all students, regardless of career objective are given the skills, attitudes, and knowledge needed for future employment. It begins as early as kindergarten and is infused throughout the K-12 curriculum.

In Wisconsin education for employment initiatives are led by a series of mandates, dating back to September 1988:

WI Educational Standard, Education for Employment, WI Statute 121.02(1)(m)

WI Educational Standard, Curriculum WI Statute. 121.02(1)(k)

WI Educational Standard, Developmental Guidance Services, WI Statute 121.02 (1)(e)

"The purpose of education for employment programs is to prepare elementary and secondary pupils for future employment; to ensure technological literacy; to promote lifelong learning; to promote good citizenship; to promote cooperation among business, industry, labor, postsecondary schools, and public schools; and to establish a role for public schools in the economic development of Wisconsin."

Education for Employment (E4E): CTE activities that include experiences built on real information and data help students to make connections and apply learning in a contextual environment. E4E involves the business community in educational issues and enriches the school curriculum. It promotes increased student achievement by expanding educational experiences.

ENVIRONMENTAL EDUCATION – PI 8.01

It is required that "every school district develop and implement a written, sequential curriculum plan incorporating instruction in environmental education into all subject area curriculum plans, with the greatest emphasis in plans for art, health, science, and social studies education." (Admin. Code PI 8.01 (2)(k).

Holmen's Environment Education Implementation Plan supports an integrated approach to a heightened awareness and program improvement plan for environmental education. The program goals include (1) increase students' knowledge of environmental education, (2) develop the values and behaviors to be stewards of the environment, (3) develop an understanding and appreciation of the environment, (4) develop an aesthetic awareness of the environment, (5) develop the students' understanding of and skills related to environmental

education, (6) provide students with the understanding that Environmental Education is a part of their everyday life, and (7) integrate Environmental Education into other existing curricular areas.

Environmental Education – Environmental education is supported by the knowledge and skills that students learn in social studies classrooms through seamless integration of various units. Teachers use additional resources such as newspapers, Scholastic, Weekly Reader, and Earth Day activities to support environmental education learning.

School District of Holmen Resources and References

- Advisory Committees (Agriculture and Technology Education)
- Gale-Ettrick-Trempleau Technology Education Department
- Mastercraft Homes
- Mid-City Steel
- National FFA
- National Quality Program Standards in Agriculture
- Portage High School Technology Education Department
- Schafer Woodworking
- SkillsUSA Wisconsin
- Student and Staff Surveys
- United Auto – Holmen
- Western Technical College
- West Salem High School Technology Education Department
- Wisconsin FFA
- UW-River Falls Agriculture Education Staff