Wood Technology 1
Grades 9-12

Units of Credit: One Semester (Elective)

Prerequisites: None

Course Description:
This course challenges students with problem-solving situations related to wood and wood technology. Basic skills in sawing, planning, drilling, gluing, shaping, finishing and design are demonstrated to students through mass production and teacher-required projects and activities with an emphasis on safety. Current industry standards are introduced. Students develop and use a variety of skills including safe work habits, organization, problem solving, and practical application of woodworking techniques. Students engage in a variety of learning activities including lecture and note taking, research, individual projects, demonstrations, and performance tasks. Students are assessed through observation, performance on tests, quizzes, assigned tasks and projects, and by the quality of work produced.

Topics:
- Measurement Systems
- Care and Use of Hand Tools and Equipment
- Introduction to Safe Use of Portable Power Tools
- Introduction to Safe Use of Woodworking Machines
- Personal Safety in the Woodworking Laboratory
- Introduction to Wood Joinery and Shaping
- Basic Woodworking Terminology
- Wood Identification
- Wood Preparation for Finishing
- Introduction to Wood Finishing
- Woods Technology Career Exploration
- Basic Design and Planning

NOTE: Throughout this document, learning target types are identified as knowledge ("K"), reasoning ("R"), skill ("S"), or product ("P").

STANDARD 1: Students experience various career opportunities and assess personal career pathways.
Benchmark 1:
Explore and identify personal interests, aptitudes, and abilities and develop strategies to achieve tentative career goals.
Learning Targets *(Type)***:**
1. I can use Montana Career Information Systems (MCIS) and/or other systems or web resources to investigate and evaluate my personal interests, aptitudes and abilities. *(S)*
2. I can formulate tentative career goals. *(R)*

3. I can evaluate approaches for meeting my goals. *(R)*

Benchmark 2:

Utilize local resources to research career plans.

Learning Targets *(Type)*:

1. I can identify local resources to develop career plans. *(K)*
2. I can contact my school career counselor or teacher to pursue career pathways. *(S)*

Benchmark 3:

Recognize the interrelationships of family, community, career, and leisure roles.

Learning Targets *(Type)*:

1. I can describe the importance of balance between family and community in regards to career and leisure activities. *(K)*
2. I can compare and contrast the needs of career and leisure activities and how they relate to and/or affect family and community. *(R)*

STANDARD 2: Students demonstrate an understanding and apply principles of Resource Management (i.e., financial, time, personal management).

Benchmark 1:

Prepare a budget and keep financial records.

Learning Targets (*Type*):

1. I can research and report cost of materials and time. *(R,S)*
2. I can document financial inputs and outputs. *(S)*
3. I can identify the necessity to maintain accurate financial records. *(K)*
4. I can stay within a fixed budget. *(S,P)*

Benchmark 2:

Prioritize, allocate time, prepare and follow schedules to complete a project.

Learning Targets (*Type*):

1. I can estimate the required time to complete a project. *(R)*
2. I can prioritize resources, equipment and tasks. *(R)*
3. I can reflect upon completion. *(K)*

Benchmark 3:

Apply appropriate time to task.

Learning Targets (*Type*):

1. I can implement a time schedule for task completion. *(S)*

Benchmark 4:

Use physical resources wisely to accomplish a goal.

Learning Targets (*Type*):

1. I can identify the resources necessary to accomplish the task. *(K)*
2. I can maintain the tools of the trade. *(S)*
3. I can maximize the use of my resources. *(S)*

STANDARD 3: Students acquire and utilize personal and leadership skills to become successful, productive citizens.

Benchmark 1:

Demonstrate active leadership skills by participation in group activities and projects.

Learning Targets (*Type*):

1. I can investigate various leadership styles. *(R)*
2. I can apply leadership styles in group activities and projects. *(R)*
3. I can demonstrate the principles of effective group participation and leadership related to citizenship and career preparation. *(S)*

Benchmark 2:
Demonstrate positive personal and work ethics.
Learning Targets (*Type*):
1. I can arrive on time for class and work. *(S)*
2. I can develop personal and work related goals. *(K,P)*
3. I can describe ethical behavior in the workplace. *(K)*

Benchmark 3:
Demonstrate skills to be a productive citizen.
Learning Targets (*Type*):
1. I can develop professional relationships with community members. *(S)*
2. I can contribute to my community in a positive manner. *(S,P)*

Benchmark 4:
Apply self-esteem building practices.
Learning Targets (*Type*):
1. I can define and provide evidence of my strengths in my career interest areas. *(K,S)*
2. I can persevere through set backs and stay focused on my goals. *(S)*

Benchmark 5:
Demonstrate appreciation for diverse perspective needs and characteristics.
Learning Targets (*Type*):
1. I can develop a working relationship with diverse populations. *(K,S)*
2. I can demonstrate communication skills that contribute to positive relationships. *(S)*
3. I can work to understand diverse points of view. *(R)*

Benchmark 6:
Practice several methods of effective communication.
Learning Targets (*Type*):
1. I can demonstrate good listening skills. *(S)*
2. I can effectively communicate verbally through collaborative projects. *(S,P)*
3. I can develop quality written professional communications. *(P)*

STANDARD 4: Students acquire and demonstrate current technical skills leading to an occupation.
Benchmark 1:
Practice technical skills and procedures required for an occupation.
Learning Targets (*Type*):
1. I can demonstrate knowledge of new and emerging technologies that may affect the field of woodworking. *(S)*
2. I can practice appropriate woodworking techniques based on knowledge of modern equipment and newly developed woodworking processes. *(K,S)*
3 I can select raw materials based on product quality. *(K,R,S)*
4. I can recognize acceptable finished product quality. *(K,S)*
5. I can competently utilize a compass or protractor to accomplish various degree angles for layout and design. *(S)*

Benchmark 2:
Practice safe and appropriate use of technology.
Learning Targets (*Type*):
1. I can demonstrate knowledge of the concepts and skills related to health and safety in the workplace. *(K,S)*
2. I can utilize correct techniques for proper handling of hazardous materials. *(K,S)*
3. I can use tools, materials, and equipment common to the field of woodworking in a safe manner. *(S)*

Benchmark 3:
Select the appropriate tools, equipment, and procedures for the task.
Learning Targets (*Type*):
1. I can identify a wood joint cut and name the correct machine to accomplish the task. *(K,R,S)*
2. I can name the correct grit size sequence to accomplish a desired wood sanding finish. *(K)*
3. I can choose/change and operate a wood router for a desired profile. *(S)*
4. I can select goal-relevant activities, rank them, allocate time, and prepare and follow schedules. *(R,S)*
5. I can use and prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records. *(R,S)*
6. I can plan a project with correct machine set-up parameters. *(R,S)*
7. I can identify a wood joint cut and name the correct machine to accomplish the task. *(K,S)*
8. I can name the correct grit size progression to accomplish a desired wood sanding finish. *(K)*
9. I can identify the correct procedure for applying Tung oil or a body finish on a project. *(K)*
10. I can identify the correct procedures for applying a surface finish on a project. *(K)*
11. I can use and store chemical finishes appropriately in an appropriate facility. *(K)*
12. I can program/design and cut using proper safety procedures for the CNC router. *(K,R,S)*

Benchmark 4:
Manage and maintain technological tools and follow troubleshooting protocol.
Learning Targets (*Type*):
1. I can maintain hand tools and keep accountable inventory. *(K,S)*
2. I can select raw materials to use in fabrication of a project. *(K,S)*

Benchmark 5:
Apply technical information to a variety of sources.
Learning Targets (*Type*):
1. I can plan a project with correct machine set-up parameters. *(K,S)*
2. I can identify the correct procedure for apply Tung oil or a body finish on a project. *(K)*
3. I can identify the correct procedures for applying a surface finish on a project. *(K)*
4. I can apply teamwork and cooperative learning skills. *(S)*
5. I can develop organizational and time management skills as part of the problem solving process. *(S)*
6. I can allocate and evaluate time, materials, facilities, and resources to set and achieve goals. *(S)*

STANDARD 5: Students know and demonstrate the requirements of the workplace through authentic application.
Benchmark 1:

Practice and demonstrate academic and technical skills to a workplace setting.

Learning Targets (*Type*):
1. I can practice, and demonstrate my technical workplace skills in my school lab. *(S)*
2. I can research, write and present on the technical content utilizing academic skills found in workplace settings. *(R,S,P)*

Benchmark 2:

Apply the concepts of entrepreneurship.

Learning Targets (*Type*):
1. I can explain the concepts of entrepreneurship. *(K)*
2. I can demonstrate the concepts of entrepreneurship through a unique project. *(R,S)*
3. I can present my unique project to an authentic audience. *(S,P)*

Benchmark 3:

Identify possible outcomes and consequences of decisions.

Learning Targets (*Type*):
1. I can identify possible consequences of carelessness and horseplay. *(K)*
2. I can explain potential outcomes of not following directions, (i.e. safety, guidelines, rubrics). *(R)*

Benchmark 4:

Use acceptable industry standard equipment in a school setting.

Learning Targets (*Type*):
1. I can successfully use acceptable industry standard equipment to produce an authentic product within budget constraints. *(R,S,P)*