

Building Trades 1

Grades 10-12

Units of Credit: One Year (Elective)

Prerequisites: Wood Technology 1 and Drafting 1, or Consent of Instructor

Course Description:

Building Trades 1 emphasizes a combination of advanced machine operations, millwork, cabinetry, and basic residential construction methodology. Students improve their skills related to the aforementioned areas of study. The course promotes strong work ethics, communication skills, problem solving, teamwork, and continued skill development in the construction trades. This course prepares students for Building Trades 2 and/or entry-level construction positions.

Current industry standards are introduced. Students develop and use a variety of skills including safe work habits, organization, problem solving, and practical application of construction techniques. Students engage in a variety of learning activities including lecture, note taking, research, individual projects, demonstrations, and performance tasks. Student achievement is measured in a variety of ways, including written, oral, and performance tests. In addition, student projects and behavior are evaluated using criteria specified by teacher/industry standards.

Topics:

- Measurement Systems
- In-Depth Use of Portable Power Tools
- Personal Safety
- Advanced Design and Planning
- Plan and Blueprint Interpretation
- Interior Finish Work
- Building Codes, Regulations, and Zoning
- Site Work Foundation
- Systems Floor Systems
- Wall Systems Roof Systems
- Enclosing the Structure

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)*
4. I can use information related to woods technologies/building trades as it applies to continuing education, vocational, avocational, and career decisions. *(K,S)*
5. I can acquire skills and knowledge related to industry, materials, and processes in related careers. *(K,S)*
6. I can observe and summarize the career opportunities for a person with woodworking/construction skills. *(K,S)*

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 build upon the principles of effective group participation and leadership related to workplace hierarchy. (*R*)

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 develop, read and interpret project plans and blueprints. *(K,R,S)*
2. I can apply critical-thinking strategies to the analysis and evaluation of project design and fabrication activities. *(K,R,S)*
3. I can use cross-curricular resources and knowledge to develop solutions to problems. *(K,R,S)*
4. I can utilize knowledge and resources to create innovative solutions and ideas. *(K,R,S)*
5. I can apply advanced woodworking/construction skills in a working environment. *(S)*
6. I can apply teamwork and cooperative learning. *(S)*
7. I can develop and justify organizational and time management skills as part of the problem-solving process. *(K,R,S)*
8. I can evaluate and apply knowledge of the concepts and skills related to health and safety in the workplace. *(K,R,S)*
9. I can produce work of the highest quality possible. *(S)*
10. I can select goal-relevant activities, rank them, allocate time, and prepare and follow schedules. *(K,R,S)*
11. I can use or prepare budgets, make forecasts, keep records, make adjustments to meet objectives, and evaluate financial records. *(K,R,S)*

Benchmark 2:

Practice safe and appropriate use of technology.

Learning Targets (Type):

1. I can use tools, materials, and equipment common to the field of woodworking in a safe manner. *(K,R,S)*
2. I can utilize correct techniques for proper handling of hazardous materials. *(K,R,S)*

Benchmark 3:

Select the appropriate tools, equipment, and procedures for the task.

Learning Targets (Type):

1. I can select raw materials based on product application. *(K)*
2. I can recognize and produce acceptable finished product quality. *(S)*
3. I can evaluate quality and performance of a variety of systems (e.g. impact of change). *(R)*
4. I can practice and analyze principles of system management considering external factors and uncontrolled variables. *(R,S)*
5. I can manage and analyze existing systems including optimizing outputs and making in-process adjustments. *(R,S)*
6. I can design and evaluate a system composed of subsystems. *(R,S)*

Benchmark 4:

Manage and maintain technological tools and follow troubleshooting protocol.

Learning Targets (Type):

1. I can set up tools, machines, and equipment to manufacture or produce solutions to problems. *(S)*
2. I can demonstrate application of appropriate woodworking/construction techniques based on knowledge of modern equipment and newly developed woodworking/construction processes. *(S)*

Benchmark 5:

Apply technical information to a variety of sources.

Learning Targets (Type):

1. I can allocate and evaluate time, materials, facilities and resources to set and achieve

- goals. *(R,S)*
2. I can assess skills and distribute work accordingly; evaluate performance and provide feedback toward the accomplishment of personal and team goals. *(R,S)*
 3. I can practice various roles required as a member of an effective team while recognizing individual differences and cultural diversity. *(R,S)*
 4. I can demonstrate and teach a learned skill including performance evaluation of self and others in this process. *(R,S)*
 5. I can communicate ideas to justify position, persuade and convince others, and responsibly challenge existing procedures and policies. *(R,S)*
 6. I can practice and evaluate negotiating process including researching, goal setting, presenting, listening, clarifying, adjusting and compromising. *(R,S)*
 7. I can practice and evaluate positive service skills (e.g., resolving misunderstanding, consumer complaints). *(R,S)*
 8. I can gather, compile and analyze data from a variety of sources, and evaluate relevance and accuracy in making informed decisions in the workplace. *(R,S)*
 9. I can organize process, analyze, and maintain written and computerized records and other forms of information using systematic methods. *(R,S)*
 10. I can select, analyze, and present information using a variety of methods (e.g., oral, written, graphic, pictorial, multimedia). *(R,S)*
 11. I can acquire, organize, communicate, process, analyze and evaluate information from print and electronic sources. *(R,S)*
 12. I can listen for, receive, interprets and recall specific details and instructions in conversations and group meetings. *(R,S)*
 13. I can respond appropriately during conversations, uses proper language etiquette, speaks clearly and directly, and uses correct technical vocabulary. *(R,S)*
 14. I can locate and demonstrate understanding of written technical and non-technical information necessary for completion of task or project. *(R,S)*
 15. I can use proper business or technical writing styles, take effective notes, and complete written assignments legibly, completely, and accurately. *(S)*
 16. I can solve linear equations. *(S)*
 17. I can use basic operations with real numbers. *(S)*
 18. I can use fractions, decimals, and percents. *(S)*
 19. I can use ratios and proportions. *(S)*
 20. I can apply coordinate geometry. *(S)*
 21. I can apply vocabulary and formulas of two-dimensional geometric shapes. *(S)*
 22. I can use vocabulary and formulas of three-dimensional geometric shapes. *(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*)