

04: Advanced Milling, Surfacing, and Work Flow Management

Content Area: **Technology**
Course(s):
Time Period: **Full Year**
Length: **1.5 weeks on going**
Status: **Published**

General Overview, Course Description or Course Philosophy

This full year course offers an introductory view on the tools, materials, and processes of modern woodworking. Students will familiarize themselves with common terminology and practices to complete avocational woodworking projects. This hands-on course calls for the production of several 'everyday functional' woodworking projects. The projects are chosen so that students can increase their knowledge and experience with regard to machine use and woodworking technique. The course goal is to allow students to produce pieces from plans on their own without instructor provided step by step instructions.

OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS

Objectives

Students will realize that in order for projects to be completed in an efficient manner, there must be a process laid out and followed. That completion of tasks does not come from a hap hazard approach.

Essential Questions

HOW are things made?

Why is planning important?

What is sequencing with regard to product development?

ENduring Understanding

Plan the work, then work the plan

CONTENT AREA STANDARDS

9.3.12.AC.1	Use vocabulary, symbols and formulas common to architecture and construction.
9.3.12.AC.6	Read, interpret and use technical drawings, documents and specifications to plan a project.
9.3.12.AC-CST.5	Apply practices and procedures required to maintain jobsite safety.
12.9.3.ST.6	Demonstrate technical skills needed in a chosen STEM field.
12.9.3.MN-HSE.1	Demonstrate the safe use of manufacturing equipment.
12.9.3.ST-ET.1	Use STEM concepts and processes to solve problems involving design and/or production.
12.9.3.ST-ET.2	Display and communicate STEM information.
12.9.3.ST-ET.3	Apply processes and concepts for the use of technological tools in STEM.
12.9.3.ST-ET.4	Apply the elements of the design process.
12.9.3.ST-ET.5	Apply the knowledge learned in STEM to solve problems.

RELATED STANDARDS (Technology, 21st Century Life & Careers, ELA Companion Standards are Required)

LA.RST.11-12.3	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.
LA.RST.11-12.4	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.
LA.WHST.11-12.2	Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.
LA.W.9-10.2	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
LA.WHST.11-12.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
LA.WHST.9-10.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
LA.W.9-10.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
LA.W.9-10.6	Use technology, including the Internet, to produce, share, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

STUDENT LEARNING TARGETS

Introduce students to wood as a working material. Have them able to identify basic characteristic and types of lumber. Begin to familiarize themselves with plan reading and the work shop.

Declarative Knowledge

Students will understand that:

- • select appropriate materials is important
- understanding the different properties of the material you are working with aides in a successful project.
- Finishing techniques and materials vary based on desired outcome
- processing materials appropriately is vital
- Problem solving skills are important in manipulative work
- How to evaluate and assess a project

Procedural Knowledge

Students will be able to:

- Operate equipment safely
- Follow a drawing/plan
- Maintain a safe working environment
- demonstrate the process for a proper glue up
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- Apply knowledge from machine safety tests
- demonstrate a knowledge of workflow and planning.
- properly work thru the sequence of abrasives

EVIDENCE OF LEARNING

Observation, discussion, and hands on interaction

completion of 2 introductory projects. 1 with teacher lead, 1 while working one their own with supervision.

Formative Assessments

Student developed plans and project 1

student log

Summative Assessments

successful student project 2 and log

RESOURCES (Instructional, Supplemental, Intervention Materials)

Teacher notes and quizzes available through Google Classroom/Drive.

Material processing project rubric.

INTERDISCIPLINARY CONNECTIONS

Educational Technology: Use of Google resources

ACCOMMODATIONS & MODIFICATIONS FOR SUBGROUPS

See link to Accommodations & Modifications document in course folder.