Unit 5 Individual Selected Project

Content Area: **Industrial Technology**
Course(s): **Construction Technology II**
Time Period: **1st Marking Period**
Length: **Weeks**
Status: **Published**

Unit Overview

Students will select an online project with plans or plans drawn by the student to Construct,

Transfer

Students will be able to independently use their learning to...

use Critical Thinking skills to select a more advanced project with prints they obtained from websites or created themselves to Construct in the Lab.

SWBAT select project they may want to make at home or build if they select the Construction or Building Trades Area.

Student will be able to creat an entrepreneur business where they can build and sell projects.

Students will understand the cost of materials, price, labor and selling concepts to make a profit in the real world.

For more information, read the following article by Grant Wiggins.

http://www.authenticeducation.org/ae_bigideas/article.lasso?artid=60

Meaning

Students will select a project they would like to construct in the Lab. They must have plans and instructor permission before beginning work on the project.

Understandings

Students will understand that...

-It is very important to select a project that is requested or could be sold in the real world.

How the importance of accurate and readable plans are used to Construct a Project.

How students can earn money building projects if they have good craftsmanship and are built accurately and aethetically pleasing to the consumer.

Essential Questions

Students will keep considering...

-How can I build this project so that it is accurate, functional, and aesthetically pleasing to themselves or a customer?

Is my layout of the project snd measurements correst?

Have I cut out my project pieces accurately?

Have I assenbled and finished my project correctly so it is aesthetically pleasing and functional?

Application of Knowledge and Skill

Students depending on the complexity of the project will have several marking periods to complete their projects.

Students will apply their layout and measuring skill to tranfer print dimensiond to lumber and wood materials they have selected for their properties.

Students will safely operate Hand Tools, Portable Power Tools and Seperating Mahines to cut out and form project parts.

Student will assemble projects with proper clamping devices, adhesives, and fasteners.

Students will prepare project for finishing by sanding to the correct grit for a fine finish.

Students will apply stain and clear finish to protect the project and make it aesthetically pleasing.

Students will know...

Students will know...

How to apply their layout and measuring skill to tranfer print dimensiond to lumber and wood materials they have selected for their properties.

How to safely operate Hand Tools, Portable Power Tools and Seperating Mahines to cut out and form project parts.

How to assemble projects with proper clamping devices, adhesives, and fasteners.

How to will prepare project for finishing by sanding to the correct grit for a fine finish.

How to apply stain and clear finish to protect the project and make it aesthetically pleasing.

?

Students will be skilled at...

Students will be skilled at...

Application of their layout and measuring skill to tranfer print dimensiond to lumber and wood materials they have selected for their properties.

Safely operating Hand Tools, Portable Power Tools and Seperating Mahines to cut out and form project parts with proper joinery included.

Assemble projects with proper clamping devices, adhesives, and fasteners.

Preparation of project for finishing by sanding to the correct grit for a fine finish.

Applyicatio of stain and clear finish to protect the project and make it aesthetically pleasing.

Academic Vocabulary

Layout, Print Reading, Transfer, Precision, Joinery, Clamping.

Learning Goal 1

Selection of Individual Projects.

9.3.12.AC.1	Use vocabulary, symbols and formulas common to architecture and construction.
9.3.12.AC.2	Use architecture and construction skills to create and manage a project.
9.3.12.AC.3	Comply with regulations and applicable codes to establish and manage a legal and safe workplace.
9.3.12.AC.4	Evaluate the nature and scope of the Architecture & Construction Career Cluster and the role of architecture and construction in society and the economy.
9.3.12.AC.5	Describe the roles, responsibilities, and relationships found in the architecture and construction trades and professions, including labor/management relationships.
9.3.12.AC.6	Read, interpret and use technical drawings, documents and specifications to plan a project.
9.3.12.AC.7	Describe career opportunities and means to achieve those opportunities in each of the Architecture & Construction Career Pathways.
9.3.12.AC-CST.7	Compare and contrast the building systems and components required for a construction project.
9.3.12.AC-CST.9	Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.
9.3.12.AC-DES.1	Justify design solutions through the use of research documentation and analysis of data.

Target 1

SWBAT access and search the Internet or Books in the Construction Technology with Prints to select a project they would like to make in Lab.

Target 2

SWBAT read and describe what the print is conveying on Construction Layout and Procedures.

Learning Goal 2

Layout, Material, Transfer of Dimensions and steps for Constructing Project

9.3.12.AC.1	Use vocabulary, symbols and formulas common to architecture and construction.
9.3.12.AC.2	Use architecture and construction skills to create and manage a project.
9.3.12.AC.3	Comply with regulations and applicable codes to establish and manage a legal and safe workplace.
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9.3.12.AC.5	Describe the roles, responsibilities, and relationships found in the architecture and construction trades and professions, including labor/management relationships.
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9.3.12.AC.7	Describe career opportunities and means to achieve those opportunities in each of the Architecture & Construction Career Pathways.
9.3.12.AC-CST.9	Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.
9.3.12.AC-DES.1	Justify design solutions through the use of research documentation and analysis of data.

Target 1

SWBAT select the material they would like to make their project with the characteristics of the material being taken into account.

Target 2

SWBAT transfer dimensions with proper layout techniques to the material they have selected.

Learning Goal 3

Cut out of material and shaping of parts for project. Assemble and Finishing pf Projects.

9.3.12.AC.1	Use vocabulary, symbols and formulas common to architecture and construction.
9.3.12.AC.2	Use architecture and construction skills to create and manage a project.
9.3.12.AC.3	Comply with regulations and applicable codes to establish and manage a legal and safe workplace.
9.3.12.AC.5	Describe the roles, responsibilities, and relationships found in the architecture and construction trades and professions, including labor/management relationships.
9.3.12.AC.6	Read, interpret and use technical drawings, documents and specifications to plan a project.
9.3.12.AC.7	Describe career opportunities and means to achieve those opportunities in each of the

	Architecture & Construction Career Pathways.
9.3.12.AC-CST.4	Apply scheduling practices to ensure the successful completion of a construction project.
9.3.12.AC-CST.9	Safely use and maintain appropriate tools, machinery, equipment and resources to accomplish construction project goals.
9.3.12.AC-DES.6	Apply the techniques and skills of modern drafting, design, engineering and construction to projects.
9.3.12.AC-DES.8	Apply standards, applications and restrictions pertaining to the selection and use of construction materials, components and assemblies in the project design.

Target 1

SWBAT safely operate seperating machines to cut out and shape project parts with correct joinery.

Target 2

SWBAT safely work with clamping devices, adhesives and fastening devices to assemble project.

Target 3

SWBAT prepare project with correct sanding techniques. Then apply stain and clear finish properly.

Formative Assessment and Performance Opportunities

Students will be graded by instructor observation of apllication of skills that the student have acquired on their projects. This will be reflected in their weekly work grade. Based also on completed project with Industrial Technology Project Grading Rubric.

Summative Assessment

Bsed on written online test or quizzes the students must pass to operate machinery safely.

Accommodations/Modifications

Students with Accommodation/Modifications can retest if they fail test or take the test with a Special

Education Teacher. Students that need help with operating the machines will have the instructor or another student that has completed the task assist them.

Unit Resources

On Line Prints

You Tube Videos related to projects

Google Classroom Industrial Technology Project Grading Rubric.

21st Century Life and Careers

Select all applicable standards from the applicable standards

CAEP.9.2.12.C	Career Preparation
CAEP.9.2.12.C.1	Review career goals and determine steps necessary for attainment.
CAEP.9.2.12.C.2	Modify Personalized Student Learning Plans to support declared career goals.
CAEP.9.2.12.C.3	Identify transferable career skills and design alternate career plans.
CAEP.9.2.12.C.4	Analyze how economic conditions and societal changes influence employment trends and future education.
CAEP.9.2.12.C.5	Research career opportunities in the United States and abroad that require knowledge of world languages and diverse cultures.
CAEP.9.2.12.C.6	Investigate entrepreneurship opportunities as options for career planning and identify the knowledge, skills, abilities, and resources required for owning and managing a business.
CAEP.9.2.12.C.7	Examine the professional, legal, and ethical responsibilities for both employers and employees in the global workplace.
CAEP.9.2.12.C.8	Assess the impact of litigation and court decisions on employment laws and practices.
CAEP.9.2.12.C.9	Analyze the correlation between personal and financial behavior and employability.

Interdisciplinary Connections

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.

SCI.HS-ETS1-2	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
SCI.HS-ETS1-4	Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.
SCI.HS-ETS1-3	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.
SCI.HS-ETS1-1	Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
SCI.HS-ETS1	Engineering Design
TECH.8.1.12	Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.
TECH.8.1.12.A.CS1	Understand and use technology systems.
TECH.8.1.12.A.CS2	Select and use applications effectively and productively.
TECH.8.1.12.B	Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.
TECH.8.1.12.B.2	Apply previous content knowledge by creating and piloting a digital learning game or tutorial.
TECH.8.1.12.B.CS1	Apply existing knowledge to generate new ideas, products, or processes.
TECH.8.1.12.B.CS2	Create original works as a means of personal or group expression.
TECH.8.1.12.C	Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.