

Unit 5: Construction Technology Separating Machines Safety and Operation

Content Area: **Industrial Technology**
Course(s): **Construction Technology I**
Time Period: **year**
Length: **Weeks**
Status: **Published**

Unit Overview

Students will be introduced to the various separating machines in the Construction Technology Laboratory as they are needed for the completion of their assigned project, safety and correct operation of the machines will be covered along with a Safety Test for each machine. The first machine will be the Radial Arm Saw then in order it will be Vertical Band Saw, Disc/Belt Sander, Tablesaw, Drill Press, Drum Sander, Tabletop Router, Jointer and Planer.

Transfer

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

-Safely operate the machines to complete their assigned project then operate them to complete the individual project they select.

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

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

Meaning

Students will be able to safely operate separating machines to complete projects.

Understandings

Students will understand that...

-How each separating machine works, the safety that is to be followed when operating the separating machine. What safety hazards exist.

Students should realize that the potential for an accident exists if they do not follow the safety guidelines presented for each individual machine.

Essential Questions

Students will keep considering...

-Am I following the proper safety procedures that have been taught and is the machine working correctly?

Application of Knowledge and Skill

Students will know...

Students will know...

How each machine works, the safety rules when operating each of the individual machines, and how to prevent accidents from occurring.

Students will be skilled at...

Students will be skilled at...

Setting up machines, identifying safety hazards and operating the different machines in a safe manner.

Academic Vocabulary

Abrasive, Bearings, Saw Kerf, Torque

Learning Goal 1

SWBAT to operate radial arm saw safely

9.3.12.AC.1	Use vocabulary, symbols and formulas common to architecture and construction.
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.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	Construction
9.3.12.AC-CST.2	Describe the approval procedures required for successful completion of a construction project.
9.3.12.AC-CST.5	Apply practices and procedures required to maintain jobsite safety.
9.3.12.AC-CST.8	Demonstrate the construction crafts required for each phase 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.2	Use effective communication skills and strategies (listening, speaking, reading, writing and graphic communications) to work with clients and colleagues.
9.3.12.AC-MO.1	Recognize and employ universal construction signs and symbols to function safely in the workplace.

Target 1

SWBAT operate the radial arm saw safely and identify how it works and possible safety hazards.

Target 2

SWBAT safety attachments that are needed operate the radial arm saw safely to avoid possible safety hazards.

Learning Goal 2

SWBAT operate vertical band saw safely

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	Construction
9.3.12.AC-CST.2	Describe the approval procedures required for successful completion of a construction project.
9.3.12.AC-CST.5	Apply practices and procedures required to maintain jobsite safety.
9.3.12.AC-CST.8	Demonstrate the construction crafts required for each phase 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-MO.1	Recognize and employ universal construction signs and symbols to function safely in the workplace.

Target 1

SWBAT operate the vertical band saw safely and identify how it works and possible safety hazards.

Target 2

SWBAT identify identify safety attachments for Vertical Band Saw such as the rip fence and miter gauge.

Learning Goal 3

SWBAT operate various Separating Machines Safely. Disc/Belt Sander, Tablesaw, Drill Press, Drum Sander, Tabletop Router, Jointer and Planer.

9.3.12.AC.1	Use vocabulary, symbols and formulas common to architecture and construction.
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.7	Describe career opportunities and means to achieve those opportunities in each of the Architecture & Construction Career Pathways.
9.3.12.AC-CST	Construction
9.3.12.AC-CST.5	Apply practices and procedures required to maintain jobsite safety.
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.8	Apply standards, applications and restrictions pertaining to the selection and use of construction materials, components and assemblies in the project design.
9.3.12.AC-MO.1	Recognize and employ universal construction signs and symbols to function safely in the workplace.

Target 1

SWBAT operate the Disc/Belt Sander, Tablesaw, Drill Press, Drum Sander, Tabletop Router, Jointer and Planer. and identify how each machine works and possible safety hazards.

Target 2

SWBAT identify safety attachments when operating the Disc/Belt Sander, Tablesaw, Drill Press, Drum Sander, Tabletop Router, Jointer and Planer and identify how it works and possible safety hazards.

Formative Assessment and Performance Opportunities

Based on completion of assigned Nesting Tray Project and observation of the instructor when student is operating the Separating Machines.

Summative Assessment

Google Classroom on line safety tests on each Individual Separating Machine or written safety test if required by the student.

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

Google Classroom Safety Tests. Online safety lessons and safety tests, You Tube Videos.

21st Century Life and Careers

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.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.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.

Interdisciplinary Connections

STEM

