# Unit 1-Woodworking-Safety and Fundamentals

Content Area: **CTE**
Course(s): **Basic Woodworking**
Time Period: **SeptOct**
Length: **30 Days**
Status: **Published**

## Title Section

## Department of Curriculum and Instruction

**Belleville Public Schools**

**Curriculum Guide**

# Unit 1-Safety and Fundamentals

**Belleville Board of Education**

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Board Approved: September 23, 2019

## Unit Overview

Student will learn Shop Safety. Students will be creating wood projects and selecting and identifying materials. Students will identify basic tools and use proper techniques when using tools.

## Enduring Understanding

Design and planning is one of the main functions of woodworking for project creation.

- Woodshop Safety
- Planning wood projects
- Selecting and identifying Materials

## Essential Questions

How does the planning and thinking put into projects insure a good end product?

What is the importance of safety?

Why is safety needed in a school setting?

How do you correctly hold a hammer?

What is the purpose of a screwdriver?

What is the purpose of a sander?

## Exit Skills

Students will be able to....

Understand the safety protocols that must be followed when using equipment

Operate and use entry level equipment (Ex. Screwdriver, Hammer, Wrench, Sander)

Comprehend how to hold items in a vise

Obtain basic knowledge of how to operate all equipment

## New Jersey Student Learning Standards (NJSLS-S)

| | |
|---|---|
| 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. |

## Interdisciplinary Connections

| | |
|---|---|
| | Key Ideas and Details |
| LA.RI.11-12.1 | Accurately cite strong and thorough textual evidence, (e.g., via discussion, written response, etc.), to support analysis of what the text says explicitly as well as inferentially, including determining where the text leaves matters uncertain. |
| LA.RI.11-12.2 | Determine two or more central ideas of a text, and analyze their development and how they interact to provide a complex analysis; provide an objective summary of the text. |
| LA.RI.11-12.3 | Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text. |
| LA.W.11-12.1.D | Establish and maintain a style and tone appropriate to the audience and purpose (e.g., formal and objective for academic writing) while attending to the norms and conventions of the discipline in which they are writing. |
| LA.W.11-12.2 | 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.W.11-12.2.A | Introduce a topic; organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. |
| LA.W.11-12.2.B | Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. |
| LA.W.11-12.2.C | Use appropriate and varied transitions and syntax to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. |
| MA.A-REI.C | Solve systems of equations |

## Learning Objectives

Students will be able to...

Comprehend the basic tool functions for beginner carpenters

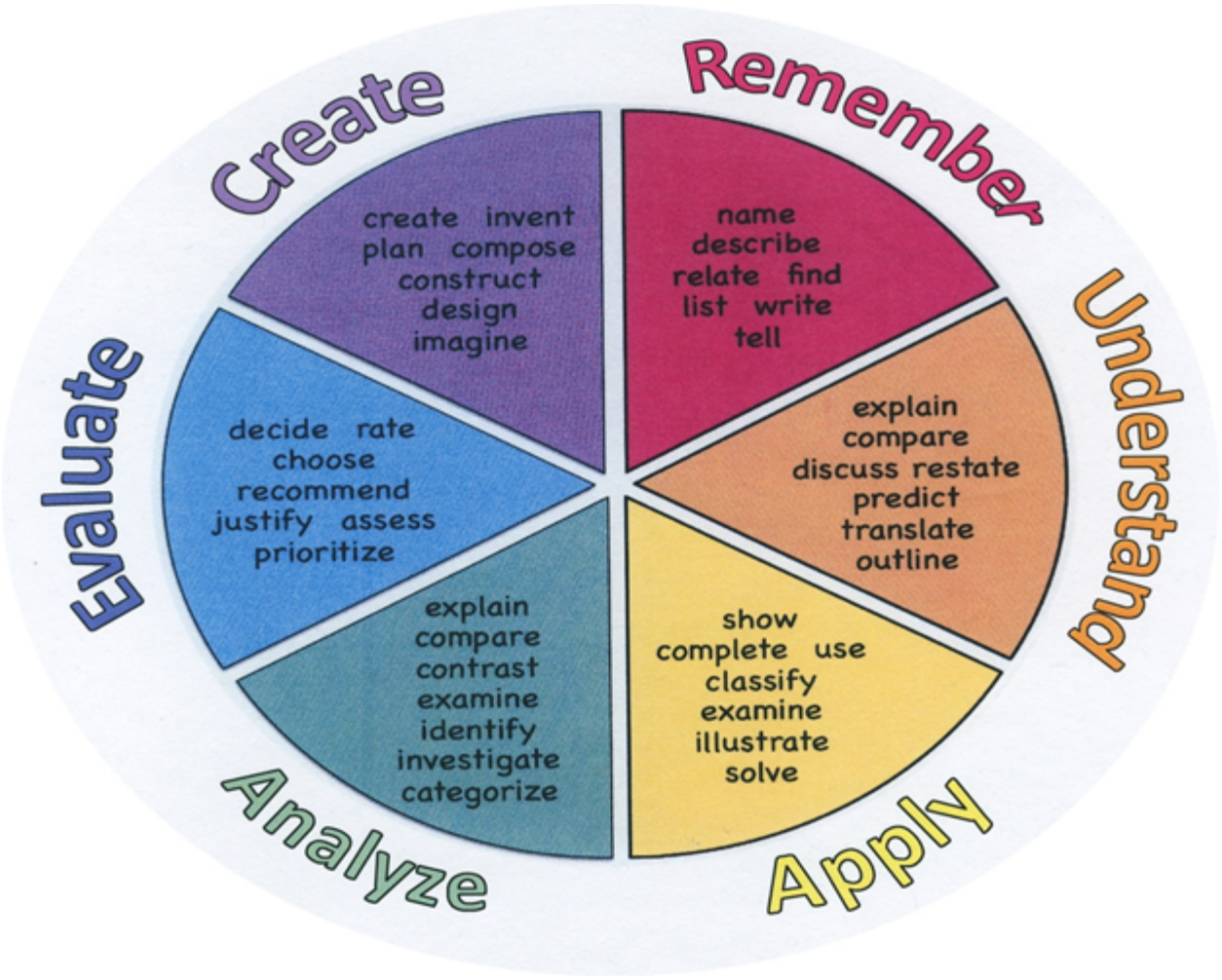
Develop the proper handling of tools in a workplace

Organize time preparation when setting up and breaking down classroom

Describe functions of entry level tools

Distinguish safety protocols in the classroom

| Remember | Understand | Apply | Analyze | Evaluate | Create |
|---|---|---|---|---|---|
| Choose | Classify | Choose | Categorize | Appraise | Combine |
| Describe | Defend | Dramatize | Classify | Judge | Compose |
| Define | Demonstrate | Explain | Compare | Criticize | Construct |
| Label | Distinguish | Generalize | Differentiate | Defend | Design |
| List | Explain | Judge | Distinguish | Compare | Develop |
| Locate | Express | Organize | Identify | Assess | Formulate |
| Match | Extend | Paint | Infer | Conclude | Hypothesize |
| Memorize | Give Examples | Prepare | Point out | Contrast | Invent |
| Name | Illustrate | Produce | Select | Critique | Make |
| Omit | Indicate | Select | Subdivide | Determine | Originate |
| Recite | Interrelate | Show | Survey | Grade | Organize |
| Select | Interpret | Sketch | Arrange | Justify | Plan |
| State | Infer | Solve | Breakdown | Measure | Produce |
| Count | Match | Use | Combine | Rank | Role Play |
| Draw | Paraphrase | Add | Detect | Rate | Drive |
| Outline | Represent | Calculate | Diagram | Support | Devise |
| Point | Restate | Change | Discriminate | Test | Generate |
| Quote | Rewrite | Classify | Illustrate | | Integrate |
| Recall | Select | Complete | Outline | | Prescribe |
| Recognize | Show | Compute | Point out | | Propose |
| Repeat | Summarize | Discover | Separate | | Reconstruct |
| Reproduce | Tell | Divide | | | Revise |
| | Translate | Examine | | | Rewrite |
| | Associate | Graph | | | Transform |
| | Compute | Interpolate | | | |
| | Convert | Manipulate | | | |
| | Discuss | Modify | | | |
| | Estimate | Operate | | | |
| | Extrapolate | Subtract | | | |
| | Generalize | | | | |
| | Predict | | | | |




## Suggested Activities & Best Practices

-Students will identify each piece of equipment and label it.

-Students will use proper techniques using hand tools in the classroom.

-Proper use of a vise will also be displayed and used in the classroom

## Assessment Evidence - Checking for Understanding (CFU)

-Student will be given quizzes on safety of all equipment that will be used in classroom

-Students will also be evaluated using hands on safety by demonstrating safe use of equipment.-benchmark assessment

-Students will compare and contrast each item used in the classroom.-alternate assessment

Unit tests-summative assessment

Think, pair, share-formative assessment

- Admit Tickets
- Anticipation Guide
- Common Benchmarks
- Compare & Contrast
- Create a Multimedia Poster
- DBQ's
- Define
- Describe
- Evaluate
- Evaluation rubrics
- Exit Tickets
- Explaining
- Fist- to-Five or Thumb-Ometer
- Illustration
- Journals
- KWL Chart
- Learning Center Activities
- Multimedia Reports
- Newspaper Headline
- Outline
- Question Stems
- Quickwrite
- Quizzes
- Red Light, Green Light
- Self- assessments

- Socratic Seminar
- Study Guide
- Surveys
- Teacher Observation Checklist
- Think, Pair, Share
- Think, Write, Pair, Share
- Top 10 List
- Unit review/Test prep
- Unit tests
- Web-Based Assessments
- Written Reports

## Primary Resources & Materials

Basic Woodworking Fundamentals- Wilcox Company

Desktop PC

Internet

## Ancillary Resources

YouTube Training Video

Scholarly Articles and Videos

Media Center

## Technology Infusion

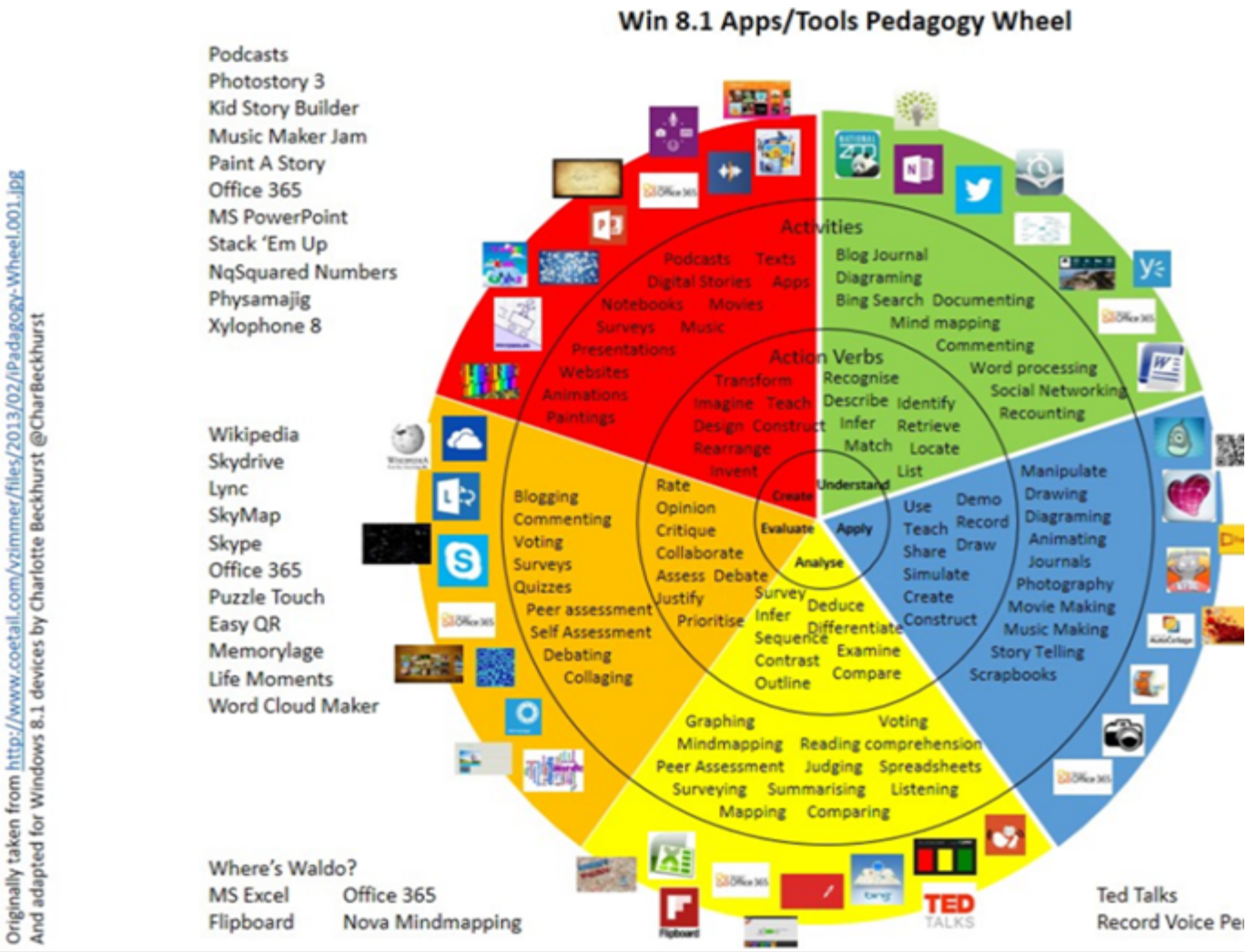
Hardware (Ex. Hammer, Screwdriver, Sander, Wrench)

Desktop PC

Vise

Electronic Measuring Tape

Students will be using hardware to and learning safety fundamentals for each piece of equipment. Students will be shown how to use a vise and operate a measuring tape.




## Alignment to 21st Century Skills & Technology

| | |
|---|---|
| CRP.K-12.CRP2 | Apply appropriate academic and technical skills. |
| CRP.K-12.CRP2.1 | Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation. |
| CRP.K-12.CRP4 | Communicate clearly and effectively and with reason. |
| CRP.K-12.CRP4.1 | Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome. |
| CRP.K-12.CRP6 | Demonstrate creativity and innovation. |
| CRP.K-12.CRP6.1 | Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization. |
| CRP.K-12.CRP9 | Model integrity, ethical leadership and effective management. |
| CRP.K-12.CRP9.1 | Career-ready individuals consistently act in ways that align personal and community-held ideals and principles while employing strategies to positively influence others in the workplace. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the directions and actions of a team or organization, and they apply insights into human behavior to change others' action, attitudes and/or beliefs. They recognize the near-term and long-term effects that management's actions and attitudes can have on productivity, morals and organizational culture. |
| CAEP.9.2.12.C | Career Preparation |
| 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.9 | Analyze the correlation between personal and financial behavior and employability. |
| TECH.8.1.12.A | Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations. |
| TECH.8.1.12.A.CS1 | Understand and use technology systems. |
| 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.1 | Develop an innovative solution to a real world problem or issue in collaboration with peers and experts, and present ideas for feedback through social media or in an online community. |
| TECH.8.1.12.C.CS4 | Contribute to project teams to produce original works or solve problems. |

## 21st Century Skills/Interdisciplinary Themes

- Communication and Collaboration
- Creativity and Innovation
- Critical thinking and Problem Solving
- ICT (Information, Communications and Technology) Literacy
- Information Literacy
- Life and Career Skills
- Media Literacy

## 21st Century Skills

- Civic Literacy
- Environmental Literacy
- Financial, Economic, Business and Entrepreneurial Literacy
- Global Awareness
- Health Literacy

## Differentiation

-Students will work in small groups to demonstrate proper use and techniques when using tools

-Students will be given study guides prior to using all equipment.

-Directions will be repeated daily and as needed for each piece of equipment

**Differentiations:**

- Small group instruction
- Small group assignments
- Extra time to complete assignments
- Pairing oral instruction with visuals
- Repeat directions
- Use manipulatives
- Center-based instruction
- Token economy
- Study guides
- Teacher reads assessments allowed
- Scheduled breaks
- Rephrase written directions
- Multisensory approaches
- Additional time
- Preview vocabulary
- Preview content & concepts
- Story guides
- Behavior management plan
- Highlight text

- Student(s) work with assigned partner
- Visual presentation
- Assistive technology
- Auditory presentations
- Large print edition
- Dictation to scribe
- Small group setting

**Hi-Prep Differentiations:**

- Alternative formative and summative assessments
- Choice boards
- Games and tournaments
- Group investigations
- Guided Reading
- Independent research and projects
- Interest groups
- Learning contracts
- Leveled rubrics
- Literature circles
- Multiple intelligence options
- Multiple texts
- Personal agendas
- Project-based learning
- Problem-based learning
- Stations/centers
- Think-Tac-Toes
- Tiered activities/assignments
- Tiered products
- Varying organizers for instructions

**Lo-Prep Differentiations**

- Choice of books or activities
- Cubing activities
- Exploration by interest
- Flexible grouping
- Goal setting with students
- Jigsaw
- Mini workshops to re-teach or extend skills
- Open-ended activities
- Think-Pair-Share
- Reading buddies
- Varied journal prompts
- Varied supplemental materials

## Special Education Learning (IEP's & 504's)

Please identify the **Special Education Learning** adaptations that will be employed in the unit, using the ones identified below.

-Students will work in small groups to demonstrate proper use and techniques when using tools

-Students will be given study guides prior to using all equipment.

-Directions will be repeated daily and as needed for each piece of equipment

-Extra time will be given to students as needed on all equipment quizzes.

- printed copy of board work/notes provided
- additional time for skill mastery
- assistive technology
- behavior management plan
- Center-Based Instruction
- check work frequently for understanding
- computer or electronic device utilizes
- extended time on tests/ quizzes
- have student repeat directions to check for understanding
- highlighted text visual presentation
- modified assignment format
- modified test content
- modified test format
- modified test length
- multi-sensory presentation
- multiple test sessions
- preferential seating
- preview of content, concepts, and vocabulary
- Provide modifications as dictated in the student's IEP/504 plan
- reduced/shortened reading assignments
- Reduced/shortened written assignments
- secure attention before giving instruction/directions
- shortened assignments
- student working with an assigned partner
- teacher initiated weekly assignment sheet
- Use open book, study guides, test prototypes

## English Language Learning (ELL)

-Students will have classmates assist with developmental skills operating all equipment.

-Students will be allowed to correct errors on quizzes until they master the use of equipment.

- teaching key aspects of a topic. Eliminate nonessential information
- using videos, illustrations, pictures, and drawings to explain or clarif
- allowing products (projects, timelines, demonstrations, models, drawings, dioramas, poster boards, charts, graphs, slide shows, videos, etc.) to demonstrate student's learning;
- allowing students to correct errors (looking for understanding)
- allowing the use of note cards or open-book during testing
- decreasing the amount of workpresented or required
- having peers take notes or providing a copy of the teacher's notes
- modifying tests to reflect selected objectives
- providing study guides
- reducing or omitting lengthy outside reading assignments
- reducing the number of answer choices on a multiple choice test
- tutoring by peers
- using computer word processing spell check and grammar check features
- using true/false, matching, or fill in the blank tests in lieu of essay tests

## At Risk

-Students will be given videos and images to help identify tools.

-Students will be allowed to correct errors after quiz to fully understand each piece of equipment.

-Students will all be given study guides to assist in understanding of material.

- allowing students to correct errors (looking for understanding)
- teaching key aspects of a topic. Eliminate nonessential information
- allowing products (projects, timelines, demonstrations, models, drawings, dioramas, poster boards, charts, graphs, slide shows, videos, etc.) to demonstrate student's learning
- allowing students to select from given choices
- allowing the use of note cards or open-book during testing
- collaborating (general education teacher and specialist) to modify vocabulary, omit or modify items to reflect objectives for the student, eliminate sections of the test, and determine how the grade will be determined prior to giving the test.
- decreasing the amount of workpresented or required
- having peers take notes or providing a copy of the teacher's notes
- marking students' correct and acceptable work, not the mistakes
- modifying tests to reflect selected objectives
- providing study guides

- reducing or omitting lengthy outside reading assignments
- reducing the number of answer choices on a multiple choice test
- tutoring by peers
- using authentic assessments with real-life problem-solving
- using true/false, matching, or fill in the blank tests in lieu of essay tests
- using videos, illustrations, pictures, and drawings to explain or clarify

## Talented and Gifted Learning (T&G)

-Students will work on advanced problem solving using the hand tools and tape measures in the classroom.

-Students will work at a faster pace and begin modeling exercises to peers.

-Advanced students will help classmates as needed on all safety protocol.

- Above grade level placement option for qualified students
- Advanced problem-solving
- Allow students to work at a faster pace
- Cluster grouping
- Complete activities aligned with above grade level text using Benchmark results
- Create a blog or social media page about their unit
- Create a plan to solve an issue presented in the class or in a text
- Debate issues with research to support arguments
- Flexible skill grouping within a class or across grade level for rigor
- Higher order, critical & creative thinking skills, and discovery
- Multi-disciplinary unit and/or project
- Teacher-selected instructional strategies that are focused to provide challenge, engagement, and growth opportunities
- Utilize exploratory connections to higher-grade concepts
- Utilize project-based learning for greater depth of knowledge

## Sample Lesson

**Unit Name**: Safety and Fundamentals

**NJSLS**: See Below

**Interdisciplinary Connection:**

LA.RI.11-12.9- Analyze and reflect on (e.g., practical knowledge, historical/cultural context, and background knowledge) documents of historical and literary significance for their themes, purposes and rhetorical features, including primary source documents relevant to U.S. and/or global history.

LA.RL.11-12.9- Demonstrate knowledge of and reflect on (e.g., practical knowledge, historical/cultural

context, and background knowledge) eighteenth-, nineteenth- and early twentieth-century foundational works of literature, including how two or more texts from the same period treat similar themes or topics.

LA.SL.11-12.1- Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with peers on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

**Statement of Objective**:

SWDAT Analyze and develop the proper safety techniques of each piece of equipment over a two week period. Each student will have to meet 75% of the safety procedures.

**Anticipatory Set/Do Now**:
Do Now: Name five safety procedures used in the wood working lab and define what the purpose is of the safety protocol.

**Learning Activity**:

Students will demonstrate the safety techniques when operating all hand tools in the shop. Protective eyewear will be shown to alll students and shown where they will be stored for each day.

**Student Assessment/CFU's:**

Students will be given quizzes on each specific piece tool used in class. The student will then present a demo of how to safely handle all the tools in the classroom.

**Materials:**
Textbook, Computers, Hardware

**21st Century Themes and Skills:**

Domain 3 A,B,C instruction.

Communication & Collaboration, Information Literacy, Media Literacy, Creativity and Innovation, Critical Thinking & Problem Solving, Information, Communications, and Technology Literacy

**Differentiation**:
Visual Learners, Hands on Activities, Group/Peer Instruction, Direct Instruction, Peer to peer instruction

**Integration of Technology**:

Students will compare and contrast each tool used in during each project. The students will use the computers to identify safety and operation of how and why to use a vise.

| | |
|---|---|
| 9.3.12.AC | Architecture & Construction |
| 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 |