Course Title – Home Improvement

Implement start year – 2017-2018

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Unit #1 - Safety, tools, and measuring

Transfer Goal –

Students will be able to safely work, use tools, and measure in the lab/workshop setting by applying technology to address real-world problems, enhance life, and extend human capabilities to meet the challenges of 21st century society.

Stage 1 – Desired Results

Established Goals

2009 NJCCC Standard(s), Strand(s)/CPI #
(http://www.nj.gov/education/cccs/2009/final.htm)

Common Core Curriculum Standards for Math and English
(http://www.corestandards.org/)

8.2 Technology Education, Engineering, and Design
All students will develop an understanding of the nature and impact of technology, engineering, technological design, and the designed world, as they relate to the individual, global society, and the environment.

G. The Designed World: The designed world is the product of a design process that provides the means to convert resources into products and systems.

- 8.2.12.G.1 Analyze the interactions among various technologies and collaborate to create a product or system demonstrating their interactivity.

21st Century Themes
(www.21stcenturyskills.org)

___ Global Awareness
___Financial, Economic, Business and Entrepreneurial Literacy
___Civic Literacy
___Health Literacy
___Environmental Literacy

21st Century Skills

Learning and Innovation Skills:
_x__Creativity and Innovation
_x__Critical Thinking and Problem Solving
_x__Communication and Collaboration

Information, Media and Technology Skills:
_x__Information Literacy
_x__Media Literacy

CCSS.ELA-LITERACY.RST.9-10.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. CCSS.ELA-LITERACY.WHST.9-10.2.F Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic). 9.1 21st-Century Life & Career Skills All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures. 9.1.12.A.1 Apply critical thinking and problem-solving strategies during structured learning experiences.	_x__ICT (Information, Communications and Technology) Literacy *Life and Career Skills:* _x__Flexibility and Adaptability _x__Initiative and Self-Direction _x__Social and Cross-Cultural Skills _x__Productivity and Accountability _x__Leadership and Responsibility
Enduring Understandings: *Students will understand that . . .* *EU 1* the implementation of proper safety procedures will minimize potential hazards. *EU 2* selecting the proper tool for the task given is essential.	**Essential Questions:** *EU 1* • Why is safety important? • How does behavior affect safety? • How does the maintenance of tools and machines impact safety? • How does classroom environment influence safety? *EU 2* • Why is the selection of the correct tool important? • In what situation would hand tools be more advantageous than power tools?

EU 3 using measuring tools correctly is critical in the construction field.	*EU 3* • Why is there a need for a variety of measuring tools in the construction industry? • How do tolerances affect structural integrity?
Knowledge: *Students will know . . .* *EU 1* • proper classroom expectations (attire, behavior, procedures, etc.). • the form, function, and safe application of hand tools. • the form, function, and safe application of power tools. • the dangers associated with flammable materials, gasses, and liquids used in the lab. *EU 2* • how to identify broken or defective tools. • the proper names of hand tools and power tools. • how using the correct tool for a specific task is advantageous. • when to use manual or power tools. *EU 3* • the proper names of measuring tools. • how to measure using a variety of tools.	**Skills:** *Students will be able to . . .* *EU 1* • demonstrate proper general lab safety. • demonstrate the proper safety, form and function of hand tools. • demonstrate the proper safety, form and function of power tools. • select the appropriate tool for a required task. • safely work with flammable materials, gasses, and liquids commonly used in the lab. *EU 2* • maintain and store tools properly. • demonstrate the proper selection and use of hand tools. • demonstrate the proper selection and use of power tools. *EU 3* • identify basic measuring tools. • demonstrate proper use of a ruler, square, level, and multi-meter.

Stage 2 – Assessment Evidence

Other Recommended Evidence:

- Quiz/Test on safety and tools
- Students demonstrate setup, safety, and operation of hand/power tools
- Student presentations on safety, form and function of hand/power tools
- Group discussions on proper safety practices

Stage 3 – Learning Plan

Suggested Learning Activities to Include Differentiated Instruction and Interdisciplinary Connections: *Each learning activity listed must be accompanied by a learning goal of A= Acquiring basic knowledge and skills, M= Making meaning and/or a T= Transfer.*

- Teacher led discussions on safety and hand/power tool usage (A)
- Practice new skillsets on hand and power tools (M)
- Create a safety and operations worksheet outlining the function of given tools (M,T)
- Demonstrate proper tool usage, including measuring tools (M,T)
- Worksheets on measuring using rulers (A)
- Worksheets on measuring using transits (A)
- Worksheets on measuring using squares (A)
- Videos on safety (A)
- Student created poster or pamphlet on safety procedures (M, T)