



G-E-T High School Curriculum
Align, Explore, Empower
Scope and Sequence
Technology Education I

Unit 0 - (Safety, Work Ethic, Employability Skills)

(Ongoing)

- Throughout this course students are focusing on how to use equipment correctly and safely. While this is going on they are continually developing work ethic and employability skills. These skill sets are learned by completing large projects in the wood shop. While in the woodshop students are learning how to work with a variety of tools/machines, work in small/large groups, keep on task while working in a shop setting, stay with deadlines, complete missed time by working outside of class meeting hours etc.

In this unit, students will ...

- Safely and correctly use the wood shop and common tools in a woodworking shop to complete multiple projects
- Develop work ethic skills and employability skills through project based learning and managing time to complete projects

Standards for (Technology Education I)

- LE1.a.11.h Exhibit skills such as innovation, intuition, adaptation, life-long learning and coach-ability to develop leadership potential over time.
- LE1.b.7.h Capitalize on team members' individual talents and skills in a project.
- LE1.b.8.h Apply conflict management skills to help facilitate solutions

Unit 2 - (Distinguish the four areas of technology education.)

(1 week)

- Students are introduced to four areas of technology and how they apply to their everyday lifestyle. In this unit, students explore a variety of careers through Career Cruising as well as gain a basic understanding of the importance of each of the areas.

In this unit, students will ...

- identify and explain the difference from Construction, Manufacturing, Transportation and Communication.

Standards for (Technology Education I)

ICT1.a.13.h: Assess how information and communication technologies include the inputs, processes and outputs

associated with sending and receiving information

AC1.a.10.h: Analyze how structures are constructed using a variety of processes and procedures

MNF1.b.5.h: Apply methodical problem-solving models which include input, process, outcome and feedback components

TR1.a.6.h: Summarize how transportation plays a vital role in the operation of other technologies such as manufacturing, construction, communication, health and safety and agriculture

Unit 3 - (Identify and properly use basic manufacturing equipment and tools.)

(1 week /ongoing)

- This could be a narrative of what is being taught 2nd in course

In this unit, students will ...

- know how to identify and demonstrate proper usage of the band saw, table saw, scroll saw, jointer, disc sander, spindle sander, drill press, nail gun, and more.
- know how to identify and demonstrate proper usage of the steel rule, scribe, shears, box and pan break, rivet gun, torch, arc welder, and more.

Standards for (Technology Education I) \

-AC1.c.5.h: Demonstrate and use the common hand tools of the trade safely and properly

- AC1.d.5.h: Demonstrate the use of portable power tools, such as circular saws, table saws, saber saws, drill, planers, and sanders, safely and properly

- AC1.d.6.h: Demonstrate the use of portable pneumatic tools, such as rough framing nail guns, interior finishing and brad nail guns, hammers, impact wrenches, drills and compressors, safely and appropriately

- MNF1.g.8.h: Demonstrate the ability to choose proper welding supplies given the process

- MNF1.g.9.h: Identify different types of welding machines

-MNF1.h.6.h: Demonstrate the proper use and proper way to set-up and close down oxy-acetylene equipment and check for leaking gases

Unit 4 - (Properly square and glue board.)

(3-4 weeks)

- Students will make the cutting board project that focuses properly squaring a board and glueing boards to create a functional project. This concept is the basis for all woodworking projects throughout all woods courses.

In this unit, students will ...

- list the 4 major steps of squaring a board, recognize the tools and equipment needed, and demonstrate how to square a board.
- Demonstrate how to glue boards together.

Standards for (Technology Education I)

- AC1.d.5.h: Demonstrate the use of portable power tools, such as circular saws, table saws, saber saws, drills, planers and sanders, safely and properly
- BB1.b.6.h: Choose and perform the material processing operations of forming (e.g., bending, pressing, drawing, rolling), bonding (e.g., gluing, soldering, brazing, spot welding, gas welding, arc welding), fastening (e.g., screws, nuts & bolts, rivets, clips, pins, nails) and finishing (e.g., surface preparation, cleaning, treatment, coating)
- ENG4.b.5.h: Develop and produce a product or system using a design process
- ENG5.b.9.h: Troubleshoot, analyze and maintain systems to ensure proper function, accuracy and precision

Unit 5- (Use and apply proper measuring tools for any given project)

(1 week/ongoing)

- Students will use various measuring techniques to accurately measure and cut/form material to work in their projects. This is done through measuring with standard rulers, metal rulers, architect rulers, combination squares, try squares, and tape measures.

In this unit, students will ...

- Accurately identify and use standard rulers, metal rulers, architect rulers, combination squares, try squares, and tape measures

Standards for (Technology Education I)

- AC1.b.13.h: Convert scaled blueprint drawing measurements to full dimensions for a given construction project
- AC1.b.14.h: Apply conventional construction measurement processes accurately (i.e., geometric and trigonometric functions)
- AC1.c.5.h: Demonstrate and use the common hand tools of the trade safely and properly
- MNF1.a.9.h: Select and apply the appropriate units and scales for situations involving measurement

Unit 6 - Use various blueprints and drawings to create wood and metal manufacturing products. (4-6 weeks)

- Students will design and/or build a wood wall clock, metal toolbox, metal tray, wood bridge and cutting board.

In this unit, students will ...

- decipher and apply drawings and blueprints to create their own toolbox to the proper size.

- decipher and apply drawings to create their own wall clock.

Standards for (Technology Education I)

- MNF1.a.8.h: Use appropriate tools, materials and machines to repair a malfunctioning system
- MNF1.a.9.h: Select and apply the appropriate units and scales for situations involving measurement
- MNF1.c.9.h: Identifying various strategies to conflict resolution and their importance for a variety of situations
- MNF1.e.8.h: Use a manufacturing system to produce a product
- AC1.b.15.h: Use conventional construction formulas to determine production requirements
- AC1.d.5.h: Demonstrate the use of portable power tools, such as circular saws, table saws, saber saws, drills, planers and sanders, safely and properly
- AC1.d.6.h: Demonstrate the use of portable pneumatic tools, such as rough framing nail guns, interior finishing and brad nail guns, hammers, impact wrenches, drills and compressors safely and appropriately
- AC1.g.10.h: Demonstrate proficiency in the practical application of the processes and materials (e.g., structural, electrical mechanical, finish) appropriate to architectural design and construction
- ENG4.b.5.h: Develop and produce a product or system using a design process

Unit 7 - (Identify the differences between 2D and 3D drawings, including the different types of 3D drawings.)
(1 week)

- Students are introduced to 2D and 3D drawings through isometrics(D) and orthographic projections. Throughout the course students will need to interpret the different drawing types to either build their own blueprints or build projects from the blueprints.

In this unit, students will ...

- recognize that 2D - Orthographic drawings have 3 views: top front and side; all 2 dimensional and 3D - Isometric drawings show all 3 dimensions: height, length and width. They will also explain that 3D drawings are easier to understand because you can see what the product looks like and get a better idea of its size and shape.
- distinguish three different types of 3D drawings: isometric and orthographic projection

Standards for (Technology Education I)

- MNF1.a.9.h: Select and apply the appropriate units and scales for situations involving measurement
- ENG1.a.10.h: Interpret design problems are seldom presented in a clearly defined form
- ENG2.a.7.h: Recognize that engineering design is influenced by personal characteristics, such as creativity, resourcefulness, and the ability to visualize and think abstractly
- ENG4.b.4.h: Refine a design by using prototypes and modeling to ensure quality, efficiency and productivity of the final

product

- ENG4.b.5.h: Develop and produce a product or system using a design process

Unit 8 - Recognize communication through different software.

(4-6 weeks)

- Students will use a variety of communication software to develop parts or blueprints. Inventor is used to design the wall clock parts and then assembled and printed to be used as blueprints in the shop when they are building their wall clocks out of wood. Inventor is also used to design a bag clip/keychain to be printed on a 3D printer.

In this unit, students will ...

- identify and use Revit Software to understand residential blueprint reading and its importance to construction.
- identify and use Inventor Software to understand engineering blueprints and how they benefit the engineering world.
- use Inventor Software to design blueprints for the Wall Clock project.

Standards for (Technology Education I)

-ICT1.c.7.h: Create a graphic message

- ICT1.f.10.h: Demonstrate the principles of design utilizing commercial software

-ENG5.b.8.h: Use computers and calculators to access, retrieve, organize, process, maintain, interpret and evaluate data and information in order to communicate