



## G-E-T High School Curriculum

### Align, Explore, Empower

Scope and Sequence

Construction

#### 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 (Construction)

- 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 1 - (Read and apply residential construction blueprint)

(1-2 days/ongoing)

- Students will be introduced to residential construction blueprints and how they are formatted. They will have a variety of tasks to complete from worksheets to reading the blueprint and then applying to a construction project. This typically is a tiny house that is built from design to finish staging for selling.

In this unit, students will ...

- Students will be able to accurately locate dimension on a blueprint
- Students will be able to identify section views with dimensions and materials being used.

### Standards for (Construction)

- AC1.e.12.h: Interpret and use residential construction blueprints and specifications
- AC1.e.13.h: Estimate materials from blueprints and specifications

### Unit 2 - (Measure and construct to 1/16" precision/add & subtract fractions to 1/16") (2-3 days/ongoing)

- Students will work on various measurement exercises from worksheets to examples on various materials. Measurement is worked on throughout this course as students are measuring and adding/subtracting fractions throughout the residential construction process.

In this unit, students will ...

- Apply and use the ruler to 1/16" (measuring, laying out and cutting various construction materials- wall studs, siding, OSB, shingles etc.)
- Add and subtract fractions to 1/16"

### Standards for (Construction)

- AC1.b.14.h: Apply conventional construction measurement processes accurately
- AC1.b.15.h: Use conventional construction formulas to determine production requirements
- AC1.b.12.h: Calculate required materials for residential construction applications
- AC1.b.14.h: Apply conventional construction measurement processes accurately (i.e., geometric and trigonometric functions).

### Unit 3 - (Identify and demonstrate proper safety/usage of common residential construction tools.) (1 week/ongoing)

- Students will learn about various hand and power tools commonly used in the woodworking shop. They will identify parts, complete safety tests and safety demonstrations to accurately and safely use the tools/machines.

In this unit, students will ...

- Students will identify and demonstrate proper usage of table saw, jointer, planer, sliding compound miter, shaper, finish nailer, drill, and other hand/power tools.
- Students will identify and apply proper safety in the shop setting. (safety glasses, guards in place, proper positioning)
- Students will demonstrate proper shop etiquette toward all persons and equipment while working on a residential construction project

### Standards for (Construction)

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

- AC1.c.6.h Maintain and care for hand tools used in residential and commercial construction
- 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.f.6.h Demonstrate the safety procedures and practices in various work environment settings pertaining to residential and commercial construction

Unit 4 - (Demonstrate employability and work ethic skills while working on the construction site) (Ongoing)

- Throughout this course students will be developing/honing their employability/work ethic skills. This is done through the residential project that is worked on by the entire class. Students will learn how to work individually, in small groups and in large groups depending upon the task at hand.

In this unit, students will ...

- Students will be able to employ the following: positive attitude, willingness to learn, time management, follow directions, leadership communication, problem solving, honesty, acceptance of others, teamwork, and responsibility)

Standards for (Construction)

- AC1.f.6.h: Demonstrate the safety procedures and practices in various work environment settings pertaining to residential and commercial construction
- CD1.b.6.h: Develop an action plan to set and achieve realistic goals
- CD1.c.9.h: Assess cultural differences and work effectively with people from a range of social and cultural backgrounds
- CD1.c.11.h: Evaluate how the personal strengths and assets of others contribute to a cooperative group atmosphere

Unit 5 - (Identify and apply residential construction floor framing concepts) (2-3 weeks)

- Students will identify floor framing concepts and then apply this knowledge to the construction of a foundation for the residential construction project tiny house.

In this unit, students will ...

- Identify parts of a wood floor frame (sill plate, posts, beams, floor joists, bridging, and sheathing)
- Construct a floor frame on the tiny house

Standards for (Construction)

- AC1.a.10.h: Analyze how structures are constructed using a variety of processes and procedures
- AC1.e.12.h: Interpret and use residential construction blueprints and specifications

AC1.g.12.h: Analyze the phases of residential and commercial construction

Unit 6 - (Identify and apply residential construction wall framing concepts)

(4-6 weeks)

- Students will identify wall framing concepts and then apply this knowledge to the construction of walls for the residential construction project tiny house.

In this unit, students will ...

- Identify parts and describe the importance of the pieces in a residential construction wall (bottom plate, top plate, header, stud, cripple, trimmer, king stud, sill)
- Construct various walls with windows, doors, vents for the tiny house build

#### Standards for (Construction)

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

AC1.e.12.h: Interpret and use residential construction blueprints and specifications

AC1.g.12.h: Analyze the phases of residential and commercial construction

Unit 7 - (Identify and apply residential construction roofing concepts)

(3-4 weeks)

- Students will identify roofing concepts and then apply this knowledge to the construction of the roof for the residential construction project tiny house.

In this unit, students will ...

- Identify parts and describe the importance of the pieces in a residential construction roof (gable roof, truss, shingles, underlayment, coil roofing nailer, fascia board, fascia, soffit, ice and water shield, cap shingles, roof vent, insulation,
- Construct the roof on the tiny house

#### Standards for (Construction)

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

AC1.e.12.h: Interpret and use residential construction blueprints and specifications

AC1.g.12.h: Analyze the phases of residential and commercial construction

Unit 8 - (Identify and apply residential construction interior construction concepts)

(9-12 weeks)

- Students will complete interior work on the tiny house. They will assist in the design, colors and materials. From there they will install the interior finishings to prep the tiny house so it could be sold.

In this unit, students will ...

- Students will install floor covering

- Students will install wall finishings
- Students will install window trim, door trim, floor trim, ceiling trim
- Students will install cabinets and countertops
- Students will build and install stairs

#### Standards for (Construction)

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

AC1.e.12.h: Interpret and use residential construction blueprints and specifications

AC1.g.12.h: Analyze the phases of residential and commercial construction