eLearning Assignments

Building Construction 1-4

In the event of eLearning, an assignment will be posted in Teams for the following eLearning plans. You will submit your written responses in Teams using the assignment link provided. Complete each daily task whatever simple materials you have available (paper, pencil, ruler) and bring your completed work when you return to school.

Your teacher will be available through office hours online via Teams in the event of eLearning, in case you have questions.

Each activity should take about 50 minutes:

- **~10 minutes video/article**
- **~25 minutes daily task**
- **~15 minutes reflection/writing.**
- **However, you are welcome to spend as much time as you like on your hands-on work project** 😊

eLearning Day 1: Blueprint Reading & Floor Estimating

Focus Standards: Reading/interpret interpreting plans; estimating materials for floor systems (Building Construction Technology 2–4)
Supplies: Pencil, ruler, paper

1. **Watch: *Basic Blueprint Reading for Construction Students* (YouTube—search.)**
2. **Task: Sketch a simple 2D floor plan of one room in your home (e.g., bedroom)—include walls, doors, windows, and approximate dimensions. Then estimate the total floor area in square feet (basic math).**
3. **Questions (Written Response): Complete on a separate sheet of paper or upload in Teams**
    - **What symbols or lines did you need to include in your plan?**
    - **How did estimating square footage help you understand material needs (like flooring)?**
    - **What challenges did you face reading or drawing the plan?**

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eLearning Day 2: Wall Framing Layout Exercise

Focus Standards: Laying out wood frame wall, including plates, openings, bracing; estimating materials (Building Construction Technology 2–4
Supplies: Pencil, ruler, graph or plain paper

1. **Read: Short article on wall framing basics (search "wall framing layout construction basics").**
2. **Task: On paper, layout a 8-ft × 10-ft framed wall with one door (3 ft wide) and one window (4 ft × 3 ft). Include top and bottom plates, studs (16-in OC), headers, and bracing. Tally how many studs and linear feet of lumber you'd need.**
3. **Questions (Written Response): Complete on a separate sheet of paper or upload in Teams**
    - **Describe your layout process—how did spacing and openings affect it?**
    - **How would mismeasuring one component (e.g., misplacing studs) affect the structure integrity?**
    - **Why is accurate estimating essential in construction?**

eLearning Day 3: Roofing & Rafter Layout Basics

Focus Standards: Roof component identification, gable roof layout, material takeoff (Building Construction Technology 2–4) South Carolina Department of Education
Supplies: Pencil, ruler, paper

1. **Watch: A short YouTube video explaining how to lay out common rafters or a gable roof.**
2. **Task: Draw a side view of a simple gable roof: show ridge, common rafters, and eaves on an 8-ft span with a 4/12 pitch. Then calculate approximate rafter length using Pythagorean theorem (assume run = 4 ft, rise = (4/12)*4 = 1.33 ft).**
3. **Questions (Written Response): Complete on a separate sheet of paper or upload in Teams**
    - **How do you calculate rafter length, and why is that important for material takeoff?**
    - **What errors might occur if pitch or span measurements are off?**
    - **How does accurate rafter layout contribute to safe, efficient construction?**

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eLearning Day 4: Masonry Basics & Safety

Focus Standards: Describe masonry materials/techniques, safety, mixing mortar, laying units (Building Construction Technology 2–4) South Carolina Department of Education
Supplies: Paper, pencil (optional: items like small blocks/Legos or clay to mimic bricks)

1. **Read: A brief overview of masonry basics: materials used, mixing mortar, and safety precautions.**
2. **Task: List common masonry materials (e.g., brick, CMU, mortar), and sketch how mortar joints look in between brick units. If possible, stack small items (Legos, clay "bricks") using a sticky medium and photograph or describe your process.**
3. **Questions (Written Response): Complete on a separate sheet of paper or upload in Teams**

- **What safety precautions are necessary when working with masonry?**
- **Why is mortar consistency important? How would uneven mortar affect the structure?**
- **Describe the skills and attitudes needed to perform masonry tasks safely and well.**

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eLearning Day 5: Construction Site Safety & Hazard Assessment

Focus Standards: Identify safe working practices, OSHA's role, hazard assessments, choosing PPE (Building Construction Technology 2–4 electrical safety section) South Carolina Department of Education
Supplies: Paper, pencil

1. **Read: Short article or guidelines on construction site safety and OSHA basics.**
2. **Task: Choose a simple project—even your wall framing from Activity 2—and create a hazard assessment: identify at least three potential hazards (e.g., falls, cuts, lifting injuries) and list steps to mitigate them, including PPE you would wear if on site.**
3. **Questions (Written Response): Complete on a separate sheet of paper or upload in Teams**
    - **Why is hazard assessment a critical part of construction planning?**
    - **How might ignoring safety procedures impact a project (both personally and professionally)?**
    - **Reflect on how planning for safety mirrors planning for structure—the parallels in foresight and responsibility.**