11. Architecture and Construction Cluster - Construction Careers (4 hours)

Purpose/Abstract: To introduce students to the different construction careers within the Architecture and Construction cluster.			
NCCCS Adult Education Standards: R.3.1.5, R.3.3.5, W.1.2.4, W.5.1.1, M.2.2.5			
Learning Objective: *By the end of the session, students will be able to:* ● Describe general types of careers in construction ● Outline and practice soft skills required for construction careers ● Work as a team to research construction careers in North Carolina			
Soft Skills	Teamwork Problem-solving and critical thinking	**Resources**	Skills to Pay the Bills (STPTB) (for instructor reference to define each soft skill category) OneStop Career Clusters (For students to have a reference to a list of careers under the construction pathway) Construction Overview | Career Cluster / Industry Video Series (to use during group work) Architecture & Construction Career Cluster (for construction careers research) Math Practice: City Building: Square Unit Practice Geometry in a Garden Handouts: Vocabulary - 1 for each student Reading Comprehension - 1 for each student
Additional Materials ● Vocabulary, one for each student ● Reading Comprehension, one for each student (print scaffolded version as required) ● Art supplies (glue, glitter, markets, etc.) ● Pencils, paper ● Computers for student use			
Icons	💭 **Activity**	✔**Check-In**	⟲ **Review**

PREPARATION

- Ahead of the lesson, assign students the education.com and download/print the worksheet specified below and assign this game during the math section.
  - City Building: Square Unit Practice
  - Geometry in a Garden
- Review the Instructional Support Guide and print/prepare referenced scaffolds.
- Print handouts.

- Familiarize yourself with the OneStop Career Clusters.
- Familiarize yourself with O*NET
- Familiarize yourself with Skills to Pay the Bills, though it won't be used directly in this lesson.

INTRODUCTION (30 min)

Begin by welcoming the students to class!

Facilitate a fun icebreaker activity called "Two Truths and a Lie." Instruct each student to think of two true statements about themselves and one false statement. Ask them to take turns sharing their statements with the class without revealing which statement is a lie. Encourage the other students to listen carefully and try to identify the false statement. After each student shares, allow the class to guess which statement they believe is a lie.

Take 15 minutes for this activity.

Introduce the topic of construction careers within the Architecture and Construction Cluster.

Start by asking the students if they have any prior experience working on a construction project, such as building a small structure, assisting with renovations, or observing a construction site. Encourage them to recall the tools they remember seeing, the specific tasks being performed, and the individuals responsible for the work. If some students feel hesitant to share with the whole class, encourage them to discuss their answers with a partner sitting next to them.

Add to students' responses what you know about construction careers and your own experiences observing different types of construction roles.

Inform students that this lesson is the first in the Architecture and Construction cluster and the next couple of sessions will dive into various careers within this cluster.

Share the objectives of the lesson.

VOCABULARY, READING, and WRITING (45 min)

Tell students that they will work on vocabulary and reading comprehension in this section. Through these activities, they will also learn the definitions of common words and read about two roles in construction.

Distribute the vocabulary handout to students. For higher-level students, distribute the copy with space to write sentences, and for lower-level students, give the copy with only the matching activity.

Once students have completed the vocabulary activity, have a few volunteers read out their sentences and review the definitions of the words with the whole class.

Pair students up and distribute the reading comprehension handout to each pair. Read the directions out loud and clarify any questions.

Walk around and check students' work as they complete their write-ups.

Allow 20 minutes for this activity.

💭 REFLECTION (10 minutes)

✔ Ask students to turn to their partners and discuss how teamwork might be important in the various careers in the construction industry. Have 3-4 volunteer pairs share a few examples of different roles working with each other to complete a construction project.

Lower Level	**Higher Level**
Provide sentence frames and demonstrate how to look for information comparing and contrasting the roles.	Encourage students to write a paragraph on how they will build the skills required to become a mason or a plumber. Ask them to think about the ways in which they will acquire these skills.

GROUP WORK (60 min)

Inform students that they will work in groups to explore a few careers in construction.

Divide students into groups of 4.

Project the video Construction Overview | Career Cluster / Industry Video Series and ask students to list down all the careers mentioned in the video. Replay or slow down the video as required. Have 1-2 students read out their lists.

Explain that in their groups, students will research these careers and a few more and present key findings about the detailed work activities and skills for each with the rest of the class.

Share the link to the Architecture & Construction Career Cluster with students and instruct them to read about two careers related to construction. Consider assigning two careers to each group. Show students how to look for careers within the construction pathway in this link. Highlight that while reading about their selected careers, students should focus on the Detailed Work Activities and Skills section.

Allow 35 minutes for this activity.

💭 REFLECTION (25 minutes)
✔ Ask each group to present a short summary of what they learned about each role they researched.

Once all the groups have shared, lead a discussion on how problem-solving and critical thinking are crucial skills in construction. Share a few examples to highlight how these skills help.

Lower Level	Higher Level
Consider grouping higher and lower level students in a group. Help them use the easy-read link to find the information they need.	Encourage students to reflect on how problem-solving and critical thinking skills will help people excel in the careers their group is researching.

Instructor notes: Depending on the number of groups you have, consider assigning 2-3 careers to each group to research. It is alright if all the construction careers on the link aren't covered in this activity, as students can continue exploring the remaining careers during independent work time.

MATHEMATICS (45 min)

Review the concept of area measurement and guide a short discussion on its relevance to construction. Share a few examples from real-life construction scenarios, such as calculating the area of floor plans or determining the amount of materials needed for a project.

Assign the game City Building: Square Unit Practice to students.

Allow 15 minutes for this practice.

Ask 2-3 students to share how to calculate the area of a square or a rectangle on the board.

Tell students that they will work in pairs to examine a community garden and calculate the area required for each garden bed.

Explain briefly what a community garden is and how it connects to construction jobs. For example, talk about how masons, fence erectors, and painters might contribute to creating a community garden.

Distribute the Geometry in a Garden worksheet to each pair and walk around to provide support as they work on the problems.

Allow 20 minutes for this practice.

💭 REFLECTION (10 minutes)

Have 2-3 volunteers share answers from their completed worksheet. Ask students to share where else they might use this knowledge of calculating area and perimeter and how it will help them in their daily lives.

Lower Level	Higher Level
Pair them up with a supportive partner. Demonstrate how to solve the first problem in the worksheet.	Give students a specific area in which they must 'build' a community garden and have them list or draw all the possible dimensions of a garden in that area. Encourage them to think about what shapes of

vegetable beds they will include in the available area. Provide one-inch squares graph paper for this additional activity.

INDEPENDENT WORK TIME (45 min)

Inform students that they can use this time to continue exploring the various careers in the construction cluster independently. Tell them to think about which of these careers match their personalities and interest areas and note them down.

If students want to practice or complete their math worksheets, they can use this time to do that as well.

Consider using this time to also answer any questions that come up about the careers students are exploring.

Lower Level	**Higher Level**
Help students find the easy-read link for the careers they want to explore during this time.	Encourage students to compare the skills required with their existing skills and interests and the career path for the careers they're researching.

WRAP-UP & REFLECTION (15 min)

Ask students to share what they found exciting in this session and what they look forward to learning more about.

Distribute exit slips to students.
Ask for a few volunteers to share their reflections.
Collect and review the answers.

Instructor notes:
None

Vocabulary

Directions:
- Match the words given below with the correct definition
- Write a complete sentence using each of the words listed below.

Words	Definition
Architecture	A detailed plan or drawing that outlines the specifications, measurements, and layout of a building or structure, and serves as a guide for construction.
Blueprint	The solid base or support on which a building or structure is constructed, typically made of concrete, is designed to distribute the weight of the building and provide stability.
Structural engineering	The art and science of designing and constructing buildings, considering aesthetic, functional, and technical aspects.
Foundation	The skill and trade of working with wood involves the construction, repair, and installation of wooden structures, furniture, and other wood-based items.
Carpentry	The branch of engineering that deals with designing and constructing structures such as buildings, bridges, and dams, ensuring their stability and safety.
Masonry	The craft of building structures using materials like bricks, stones, or concrete blocks, typically involves the use of mortar to bind the units together.

Sentences:

Vocabulary

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Vocabulary

Directions:

- Read the two short passages given below out loud to your partner.
- Discuss the **similarities and differences between the roles of a mason and a plumber**.
- Independently answer the questions that follow.
- Write a short paragraph in the space provided analyzing the information in the passages and drawing conclusions about the mason and plumber roles. Consider the similarities and differences between the roles and discuss the skills that are important for each role
- Optional: Use the sentence frames provided to structure your answers.

Passage 1: Overview of the Mason's Role

A mason is a skilled worker in the construction industry who specializes in working with bricks, stones, and other materials to build structures like walls, pathways, and chimneys. Masons use tools such as trowels, levels, and chisels to lay and align bricks or stones, applying mortar to create a secure bond. Their work requires precision, knowledge of different construction techniques, and the ability to interpret architectural plans.

Passage 2: Key Responsibilities of a Plumber

A plumber is a professional who specializes in installing, repairing, and maintaining plumbing systems in buildings. They work with pipes, fittings, and fixtures to ensure the proper flow of water, gas, and drainage. Plumbers are skilled in reading blueprints, identifying plumbing problems, and using tools like wrenches, pipe cutters, and soldering equipment. They must have a solid understanding of building codes and regulations to ensure safe and efficient plumbing systems.

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Both a mason and a plumber are involved in _____.

Both roles require working with _____.

A similarity between the two roles is _____.

The main difference between a mason and a plumber is _____.

A mason primarily works on _____, while a plumber focuses on _____.

One way in which the roles differ is _____.

Some skills important for a mason are _____.

A plumber needs to have skills in _____.

Both roles require the skill of _____.

Reflection Exit Slip

In one sentence, describe what you learned in this lesson.

Today, I learned _____.

Is one of the careers discussed today of interest to you? Why or why not?

I liked / did not like _____ *career because*_____

_____.

Is there anything you still need help understanding?

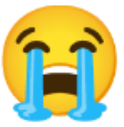
What's one question you have?

Circle the emoji that shows how you feel about your mastery of content in this lesson.


Happy


Smart


Confused


Sad


Angry