

Climate Hero Spotlight: Construction, Installation, and Maintenance Workers

Opening Activity: Make it Possible

Think back on an activity you completed for any previous lesson in this class. How do construction, installation, or maintenance workers make that project possible?

The Big Question

How do construction, installation, and maintenance workers contribute to climate solutions?

My Climate Goals

When you complete this lesson, you'll be able to

1. Identify various construction and maintenance careers in the field of climate solutions
2. Understand the growing demand for these roles due to state climate goals
3. Explore the skills and training needed for these careers
4. Discuss how these careers align with your personal interests and skills.

Notes:

Assembling Your Project Crew

Instructions

You must assemble a project team with the necessary skills and expertise to complete an assigned job. Work with your group to review the details of your assigned project, review the roles available for hire, determine which roles you need on your team, and assemble your ideal crew. Be prepared to share your crew plans with the rest of the class and explain your selections.

Project Details

Group 1: Solar Panel Installation on a School Building

- Install solar panels on the roof of a local school building.
- Ensure the system is safe, efficient, and ready to connect to the school's electrical grid.
- Address challenges such as roof access, securing panels, and system wiring.

Group 2: Weatherization of an Apartment Building

- Seal air leaks, insulate walls, and upgrade windows and doors.
- Ensure the building is comfortable for residents and reduces energy waste.
- Address challenges such as working around occupied units and ensuring minimal disruption.

Group 3: Installation of Electric Vehicle Charging Stations

- Install charging stations in a community parking lot to support electric vehicles (EVs).
- Ensure the stations are durable, user-friendly, and properly connected to the electrical grid.
- Address challenges such as planning for future EV capacity and accessibility for users.

Group 4: Installation of Heat Pumps in Residential Homes

- Replace oil or gas heating systems with efficient heat pumps in a neighborhood of homes.
- Ensure each home has a properly installed, energy-efficient heating system.
- Address challenges such as varying home layouts and electrical needs.

Available Crew Roles

1. Electrician

Responsibilities: To handle wiring, system connections, and electrical troubleshooting

Skills: Knowledge of electrical systems, safety practices, and grid integration

2. Carpenter

Responsibilities: To build and modify structures to support installations, such as panel mounts or insulation frameworks

Skills: Precision in cutting, assembling, and adapting materials

3. Heating, Ventilation and Air Conditioning (HVAC) Technician

Responsibilities: Install and maintain heating, ventilation, and air conditioning systems, including heat pumps

Skills: Mechanical skills, system knowledge, and troubleshooting expertise

4. Solar Installer

Responsibilities: To install, secure, and test solar panel systems

Skills: Mechanical aptitude, knowledge of solar systems, and physical stamina

5. Insulation Specialist

Responsibilities: To apply insulation to walls, attics, and other areas to improve energy efficiency

Skills: Attention to detail, material knowledge, and safety practices

6. Construction Manager

Responsibilities: To oversee the project, coordinate team efforts, and ensure timelines are met

Skills: Leadership, organization, and problem-solving

7. General Laborer

Responsibilities: To provide physical support for all tasks, including material handling and site preparation

Skills: Flexibility, physical stamina, and a willingness to assist in various tasks

Discussion Prompts

Use the prompts below to evaluate your project needs and assemble your ideal project crew.

What are the key tasks to complete your assigned project?

Which skills are necessary to complete your project?

What challenges might your project face? Which roles can help overcome them?

Which roles do you select for your crew, and how will each contribute to your project's overall success?

Lesson Key Points

- Construction and maintenance careers are critical to climate goals.
- These jobs require hands-on skills, and there are many ways to gain training.
- Exploring these careers can lead to meaningful work in clean energy sectors.

Additional key points:

Closing Activity

What specialized skills distinguish construction, installation, and maintenance workers?

What questions do you still have about skills and training for these careers?

In what ways are these workers critical to the clean energy transition?