Capstone: My Future in Clean Energy and Climate Tech

Teacher Manual: Lesson 18

Essential Question

What role can I play in climate solutions?

Learning objectives. Students will be able to

1. Reflect on climate-critical careers and climate solutions discussed in the course
2. Evaluate different career paths based on your skills, interests, and values
3. Connect personal strengths with potential career paths in clean energy
4. Articulate your role in climate solutions and how you envision contributing to a sustainable future.

Lesson Summary

This lesson is intended to bring together what the students have learned over the previous lessons and identify next steps based on their interests. They will briefly review their journey through the course, including climate solutions and careers supporting them.
Today's focus will be a personal reflection and career evaluation to help students identify pathways in the clean energy and climate tech sectors that interest and excite them.
In contrast to previous lessons, this lesson has more individual reflection than group work.

Careers referenced in this lesson:

- Electrician/solar installer
- Energy auditor
- HVAC technician
- Wind turbine technician
- Engineer
- Analyst
- Project manager
- Sales & customer service rep

Agenda	Timing	PPT Slide	
Opening Activity	5 minutes		**Pre-lesson**
Present agenda & learning objectives	5 minutes		
Direct Instruction Video Technology introduced Careers introduced	20 minutes		
Primary Learning Activity Partner or small group work Reinforce what was learned	20 minutes		
Closing Review learning objectives Closing activity Reflection	5 minutes		
Extension			
Handouts			
TOTAL TIME	**55 minutes**		

Preparation

- Read Student Presentation Deck (PPT).
- Watch the video(s) included in the Student Presentation Deck (most are available on the MassCEC YouTube channel).
- Print worksheets before class.
- Verify that the computer hosting the presentation deck is connected to the internet for video and hyperlink viewing.
- Check any links in the slide deck to make sure they work as intended, and then review the content below.

Overview and Opening Activity (10 mins)

Materials and resources:

- Slide deck
- Worksheet

Present the agenda: Explain that the format of today's lesson will be a bit different.

Present the big question and lesson objectives:

- What role can I play in climate solutions?
- Reflect on climate-critical careers and climate solutions discussed in the course.
- Evaluate different career paths based on your skills, interests, and values.
- Connect personal strengths with potential career paths in clean energy.
- Articulate your role in climate solutions and how you envision contributing to a sustainable future.

Opening activity: Get students thinking and talking right away.

Instructions:

- Ask students to reflect **individually** on their most significant takeaway from the course.
- Students should consider what they learned about climate change, solutions, or careers that surprised them, inspired them, or changed the way they think.
- After a few minutes of individual reflection and writing, invite a few students to share their thoughts with the class.
- Connect these reflections to the course's key objectives, highlighting the importance of understanding the impact of climate and the roles that individuals can play in climate solutions.

Direct Instruction (20 mins)

Provide information to help the students achieve the learning objectives and prepare them to actively engage with the activity.

- Use inquiry-based learning strategies to engage learners where possible.
- Highlight careers related to the technologies.
- Help the learners to relate the learning to themselves and their communities.

Self-Evaluation

- Review/present the four contributing factors for career evaluation on the screen: skills, interests, values, and work environment.

- Direct students to their worksheets, guiding them through a self-evaluation, and encouraging them to write down responses for each question.
- This should feel familiar because it's similar to what they did in lesson 10 when they first discussed evaluating career options.
- These reflections will help them identify climate careers aligning with their strengths and interests.
- Remind them that these answers are likely to continue changing, and there is no right or wrong answer or answers!

Career Path (Re)exploration

Several careers were explored in depth throughout the lessons, and several others were mentioned.

- Each career contributes to the climate goals we've covered in this course in different ways.
- One by one, quickly recap these career paths by asking students to summarize what each of these roles does and how they contribute to climate solutions and achieving Massachusetts's climate goals.
- Ask students to share any other careers not shown on the screen that were mentioned or that came up throughout the course that interested them or they want to learn more about.
- Encourage students to think about which roles resonated with them most as they prepare for the next activity.

Differentiations & Adaptations—Direct Instruction

Primary Learning Activity (20 mins)

Materials:

- Worksheets

Activity objective: Help students start connecting personal qualities with potential career paths.

Group Activity: Analyzing Job Descriptions

Instructions:

- Divide students into small groups and assign them to one of the roles provided on their worksheets: energy auditor, solar project manager, or electric vehicle technician.
- Each group will analyze a job posting for their assigned role provided in their worksheets and discuss how specific skills, interests, values, or work environment preferences align with their assigned role.
- Role job descriptions provided:
    - Energy auditor
    - Solar project manager
    - Electric vehicle technician
- After 8–10 minutes, invite each group to share insights about how their group aligns with the role and how each role contributes to a more sustainable future.
    - Encourage students to think critically about how each role's skills and work environment relate to their interests.
    - Reinforce the idea that all these roles contribute to the same larger goal.
- If students finish discussing their assigned role before the group time is completed, they are welcome to read and discuss one of the other two roles.

Differentiations & Adaptations—Group Learning Activity

For students who struggle with abstract concepts: Use role-playing interviews.

Adaptation: Assign one student in each group to act as a hiring manager for their assigned role, or have them rotate. Other group members take turns "applying" for the job by explaining how their skills, interests, values, or preferences align with the role. The hiring manager asks follow-up questions based on the job description.

Goal: Provide a tangible and interactive way for students to connect personal traits to professional roles, making the activity engaging and concrete.

For students who need extra support: Provide real-world role models.
Adaptation: Include a short profile or day-in-the-life video of a professional currently working in each role (e.g., a solar project manager explaining their daily responsibilities or an energy auditor sharing career highlights). Students can use this as inspiration to understand better how their group aligns with the role.
Goal: Offer additional context and real-world examples to help students see the practical application of the job descriptions and better connect with the activity.

Individual Capstone Activity: My Future in Clean Energy

Instructions

- This individual capstone activity encourages students to synthesize what they learned about climate-critical careers and career evaluation throughout the course.
- Direct students to their worksheets for the **Closing 3-2-1 Reflection.** Individually, they should complete the following reflection prompts to help them answer the question, based on what you've learned, what role do you see yourself playing in climate solutions?
    - **List three climate-critical career roles that interest you**. These could be roles we discussed in class or others you learned about. Include why they interest you or what appeals to you.
    - **What are two skills you would like to develop further?** These could be skills you already have and want to improve or skills you want to gain because they will be necessary for the future. This could be anything relevant to the clean energy industry: teamwork, technical skills, analytical thinking, communications, etc. Focus on growth areas that align with different clean energy roles.
    - Finally, **identify one next step you can take to explore a career in clean energy**. This could be something simple like researching a specific role or something more involved, like contacting a local organization about an internship or volunteer opportunity. It could be signing up for a particular class or elective focusing on one of those skills you want to develop. The next step should be actionable and achievable. It should build on what you've learned in this class and take you one step further.

Encourage students to look through past activities and worksheets to refresh their memories about roles and how they felt about different skills, reflections, and careers throughout the course.

After the time is up, invite a few students to share if they feel comfortable, connecting their reflections to the real-world impact of their contributions.

Differentiations & Adaptations—Capstone Learning Activity

For students who struggle with written reflections: Offer an oral or visual/media option.
Adaptation: Allow students to complete their reflection through a voice recording, video, or visual representation. For example, students could create a mind map with their three career interests, two skills to develop, and one next step, using drawings or diagrams to illustrate their ideas.
Goal: Engage students who find it challenging to express their thoughts in writing by providing alternative formats that suit their strengths and preferences.

For students who benefit from guided discussions more than individual reflections: Allow peer reflection partners.
Adaptation: Pair students to discuss their 3-2-1 reflections with a partner before writing them down. Provide guiding prompts to structure the conversation, such as, "What career role did you find most exciting, and why?" or "What's one skill your partner mentioned that surprised or inspired you?"
Goal: Support students who process ideas more effectively through dialogue, fostering collaboration and peer learning.

For students who need extra structure: Provide reflection starters and examples.
Adaptation: Offer sentence starters or examples for each reflection category. For instance:

- "One role that interests me is ____ because ____."
- "A skill I'd like to improve is ____ because it will help me ____."
- "My next step is ____ because it will bring me closer to ____."

Goal: Help students who may feel overwhelmed by open-ended prompts focus their thoughts and articulate their reflections more easily.

Closing Activity (5 mins)

Materials:

- Presentation/Slide deck, slides
- Reflection journal and worksheets

Activity objective: Encourage students to reflect on key takeaways and identify areas of curiosity for further exploration.

Final reflection question: What is one word that describes how you feel about your future in climate solutions?

Extensions—If learners love this topic and want more …

(Extensions for lesson or course as a whole)

Create a Personal Climate Solutions Portfolio

Prompt: Compile everything you've learned in the course into a personal "Climate Solutions Portfolio." Include your favorite activities, your 3-2-1 Reflection, and a detailed action plan for how you might pursue a career in clean energy or climate solutions. Add sections for research on local opportunities (e.g., internships, volunteer roles, or organizations) and ideas for how you could contribute to climate solutions in your community.

Goal: Encourage students to synthesize their learning into a comprehensive document that can serve as a reflection tool and a roadmap for future action.

Design a Climate Action Initiative

Prompt: Create a proposal for a school- or community-based initiative that addresses a local climate challenge. Outline the problem, your proposed solution, and the roles or careers involved in making it happen (e.g., electricians for EV infrastructure, engineers for renewable energy systems). Include steps for implementation and potential impacts on your school or community.

Goal: Push students to think creatively and practically about how to apply what they've learned to solve real-world problems at a local level.

Interview or Shadow a Professional in a Clean Energy Career

Prompt: Arrange to interview or shadow someone working in a clean energy career you're interested in. Prepare a list of questions about their daily responsibilities, career path, and advice for someone considering the field. Create a summary of what you learned and how it relates to your career goals.

Goal: Provide real-world insights and personal connections to clean energy careers, encouraging students to take actionable steps toward exploring their interests further.

Launch a Climate Solutions Social Media Account or Video Series

Prompt: Start an account or video series sharing insights from this course, including what you've learned about climate solutions, clean energy careers, and how individuals can contribute to a more sustainable future. Include updates on your progress in exploring careers or taking steps toward climate action.

Goal: Empower students to become advocates for climate solutions and clean energy careers while developing communication and leadership skills.

Develop a Clean Energy Career Exploration Workshop

Prompt: Design a short workshop or presentation to teach others (e.g., classmates, community members, or younger students) about clean energy careers. Include interactive elements, like games or discussions, to engage your audience.

Goal: Reinforce students' understanding of clean energy roles by having them teach others while also building public speaking and organizational skills.

Handouts—Group Activity (Below)

Analyzing Job Descriptions

Instructions

In your group, analyze your assigned job description. Use the information below to identify the skills, interests, and values that align with your assigned role. Be prepared to share your findings with the class.

Job Descriptions

Solar Project Manager

Role Summary

As a solar project manager, you will lead and coordinate the planning, installation, and completion of solar energy projects for residential, commercial, and industrial clients. You'll oversee project timelines, budgets, and resources, ensuring the successful implementation of solar systems while meeting quality and safety standards. This role requires strong leadership skills, effective communication with clients and team members, and the ability to solve problems quickly and efficiently. Solar project managers play a vital role in accelerating the transition to renewable energy by ensuring projects are completed on time, within budget, and to customer satisfaction. This position offers opportunities to work on diverse projects and advance into higher-level management roles in the clean energy industry.

Qualifications:

- Experience in project management, construction, or renewable energy projects
- Strong organizational and leadership skills
- Knowledge of solar energy systems, permitting processes, and safety regulations
- Bachelor's degree in engineering, business, or a related field; project management certification preferred

Pay Range: $60,000–$90,000 annually, depending on experience and certifications

Notes:

Energy Auditor

Role Summary

As an energy auditor, you will conduct detailed assessments of homes or businesses to identify areas of energy waste and recommend solutions to improve efficiency. Using tools like thermal imaging cameras and blower doors, you'll evaluate insulation, heating and cooling systems, and other building components. After completing your analysis, you will prepare reports, explain findings to clients, and suggest upgrades that save energy and lower costs. This role combines technical expertise with excellent communication skills, as you'll work directly with customers to help them understand the benefits of energy efficiency. Energy auditors contribute to reducing energy consumption and greenhouse gas emissions while helping clients save money and increase comfort.

Qualifications:

- Basic understanding of building systems (HVAC, insulation, etc.)
- Strong analytical and communication skills
- Experience with energy auditing tools and software preferred
- High school diploma required; certification (e.g., BPI, HERS) preferred

Pay Range: $20–$35 per hour, based on experience and certifications

Notes:

Electric Vehicle Technician

Role Summary

As an electric vehicle (EV) technician, you will specialize in maintaining and repairing EVs, ensuring they operate safely and efficiently. Your responsibilities will include diagnosing mechanical and electrical issues, performing routine maintenance, and replacing or upgrading components such as batteries, motors, and charging systems. This role requires staying up-to-date with the latest advancements in EV technology and adhering to industry safety standards. You'll play a vital part in supporting the growing adoption of EVs by ensuring drivers have reliable, efficient, and sustainable transportation options. Working as an EV technician offers opportunities to work with cutting-edge technology and contribute to the clean energy transition.

Qualifications:

- Knowledge of electrical systems and automotive repair practices
- Strong diagnostic and problem-solving skills
- Certification in automotive technology or EV repair preferred
- High school diploma required; post-secondary technical training is a plus

Pay Range: $22–$40 per hour, depending on experience and certifications

Notes:

Discussion Prompts

What are the key tasks and responsibilities of this role?

What skills and expertise are required?

What type of work environment does this role typically work in?

How does this role contribute to the clean energy transition?

Notes:

Closing 3-2-1 Reflection

List three clean energy roles that interest you and why:

List two skills you want to develop further to prepare for a clean energy career:

What is one step you can take to learn more about clean energy careers as you prepare for your future?