



2024

Center of Transformation (CoT)

Program Curriculum

Facilitator Handbook –

Week 3 Session

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Developed By

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Week 3: STEM: Energy Basics

Duration: 45 minutes

Week 3 Introduction (Video):

- Welcome Members back briefly recap Week 2.
- Provide an overview of Week 3's focus on energy, STEM, and global climate change.
- Explore different types of transportation related renewable and renewable energy sources
- Summarize this week's activities.

Objectives: The objectives of this session are to:

- Provide a basic understanding of energy and its properties.
- Explore the difference between non-renewable (fossil fuels coal, oil, natural gas, nuclear fuel) and renewable (renewables, hydrogen, wind, water, solar, clean, and electric, biomass).
- Explore how different transportation modes use energy.
- Describe energy in the context of global climate change, transportation, and STEM and how we make decisions about energy, and the society-wide impacts of energy use related climate change.
- Participate in a hands-on energy activity or experiment.

Facilitator Time Commitment: 3 hours maximum

- Weekly Check-in Meetings: 1 hour per week (or less)
 - Please ensure that at least one person from your organization joins us each week so that we can share important CoT updates, answer questions, and ensure program alignment.
 - Join Zoom Meeting
 - <https://us02web.zoom.us/j/89252599378?pwd=Mkg0Um5QL2QzUzBLYUxkUzZSY21TUT09>
 - Meeting ID: 892 5259 9378
 - Passcode: 727575
- Session Preparation: 30 minutes per week (or less)
- Session Facilitator: 1 hour
- Reporting and Feedback: 30 minutes per week

Facilitator Instructions:

- Set up:
 - Learning Content: Open an Internet window and have the Introductory and Learning Videos ready to play. The weekly session content and videos can be found at: <https://www.clubhouseatyourhouse.com/week3>. Scroll down to the “Weekly CoT Session” section of the web page and click on the specific week.
 - Virtual Facilitation:
 - Open the Zoom room at least 15 minutes before the start of the session.

- CoT Virtual Session Zoom Link (for Tuesdays at 5:30 pm EST):
<https://us02web.zoom.us/j/86164296749?pwd=RWNuSWxUdzVaVmhhPRjRuamhiVTIEQT09>
- Some teens may join individually and others may join in a group at a local club. This may present some challenges with individual exercises and activities. Ensure that teens in the same room still have access to electronic devices to complete their assignments.
- Club/Organization facilitators may want to participate and help facilitate the discussion with the teens.
- Take pictures and video clips of your group and email them to:
cot@bgcgw.org.
- In-person facilitation:
 - Arrive at least 15-30 minutes before the start of the session to set-up and prepare.
 - Teens should have access to electronic devices for individual assignments.
 - Print the ***Energy Scavenger Hunt Worksheet*** for your group (located at the end of Week 3 below).
 - Provide your email address so teens can email their ***Energy Scavenger Hunt Worksheet*** for verification of winners.
 - Take pictures and video clips of your group and email them to:
cot@bgcgw.org.
- Introduction Video: Begin the weekly session by playing the weekly BGCGW CoT Introduction video.
 - Set-up: It is recommended to set up the teen space before the teens join, test the projector/TV connection and play the video to check the video and audio features
 - Ensure that teens have access to electronic/mobile devices with an Internet connection.
 - The video will welcome teen members to the program and provide a brief overview of the CoT Program, the calendar of events, and how the weekly sessions are designed.
 - The video link is: <https://www.clubhouseatyourhouse.com/week3>.
- Learning Video:
 - Play the learning video of the week: Renewable vs Non-renewable energy sources (5:55): <https://www.youtube.com/watch?v=jwzupl9pf6Y>.
 - Set-up: It is recommended to set up the teen space before the teens join, test the projector/TV connection and play the video to check the video and audio features.
 - Ensure that teens have access to electronic/mobile devices with an Internet connection.
 - The video will introduce the topic of the week and provide teen members with basic learning information to complete the weekly activity.

- Exercise or Activity: Energy:
 - Energy Virtual Scavenger Hunt Competition
 - Download and/or print the *Energy Scavenger Hunt Worksheets*
 - When the CoT Facilitator signals to start, teens will work individually to complete the *Energy Scavenger Hunt Worksheet* by finding the items listed on the worksheet.
 - Teen Members will email or hand-in their Energy Scavenger Hunt Worksheets to their CoT Facilitator for verification of winners.
 - CoT Facilitators will have an answer sheet to help them determine examples of scavenger hunt correct objects.
 - Note: Facilitators must provide their email addresses or collect the *Energy Scavenger Hunt Worksheet* to determine the top two winners.
 - The top two members in each group who find the most correct scavenger hunt items the fast will objects win a prize.
 - Facilitators will email **names of the top two winners** for each club or organization to: Cot@bgcgw.org after their session.

Wrap Up

1. Debrief Questions: Discuss the session with teens and ask them questions:
 - What are examples of renewable energy sources?
 - What are examples of non-renewable energy sources?
 - Is there one source of energy that is better than the others?
 - How does energy sources affect climate change?
2. Teens:
 - Submit Energy Scavenger Hunt Worksheet to CoT Facilitator
 - Teens who have not registered: [Complete Teen Registration](#)
3. Facilitator:
 - Submit Energy Scavenger Hunt Worksheets and top two teen winner names to CoT Facilitator at: cot@bgcgw.org.
 - Provide an Overview of Week 4.
 - Submit weekly pictures and video clips and email them to: cot@bgcgw.org.

Week 3 Session:

Duration	Activities	Facilitator	Resource(s)/ Material(s)
5 min	Week 3 CoT Video	BGCGW/CoT Staff	<ul style="list-style-type: none"> ○ Video link: https://www.clubhouseatyourhouse.com/week3
5 min	Video: What is Energy	Club Facilitator	<ul style="list-style-type: none"> ○ Learning Video (5:55): Renewable vs non-renewable energy sources: ○ https://www.youtube.com/watch?v=jwzupl9pf6Y
30 min	Exercise or Activity: Energy Virtual Scavenger Hunt Competition: Teens will explore different forms of renewable and non-renewable energy sources by searching for scavenger hunt items related to the transportation industry. The first two teens to submit the most correct items/answers will win a prize.	Club Facilitator	<ul style="list-style-type: none"> ● <i>Energy Scavenger Hunt Worksheet at</i> https://www.clubhouseatyourhouse.com/week3
5 min	Wrap-up	Club Facilitator	<ul style="list-style-type: none"> ○ Debrief questions. ○ Submit <i>Energy Scavenger Hunt Worksheets</i> and Scavenger hunt winners. ○ Week 4 overview.

Outcomes:

- Awareness of renewable and non-renewable energy sources in the context of global climate change, transportation, and STEM.
- Teens: Submit ***Energy Scavenger Hunt Worksheets*** to CoT Facilitators (in-person or email it to them).
- Facilitator: Submit Scavenger Hunt winner to: cot@bgcgw.org.

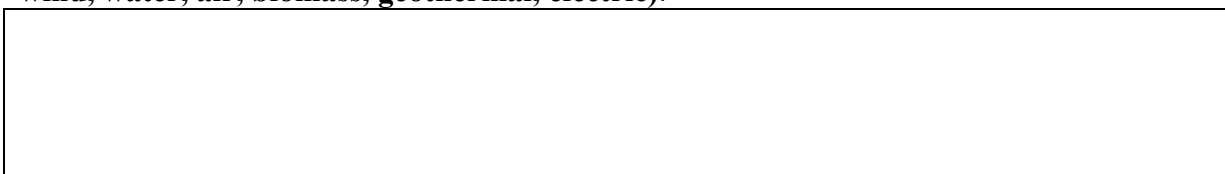
Center of Transformation

Energy Scavenger Hunt Worksheet

Week: _____ Name: _____ Club: _____ Date: _____

Instructions: *Energy is all around us. Now that you know the difference between non-renewable and renewable energy sources, let's see if you can find the correct objects the fastest in the Energy Scavenger Hunt Competition. Use your computer, tablet, or mobile device and the Internet to find the items below. The **first two teen members** in your group to find all the items and **submit your worksheet to your CoT facilitator** (in-person or by emailing the worksheet them) will win a prize. Happy Hunting!!!!*

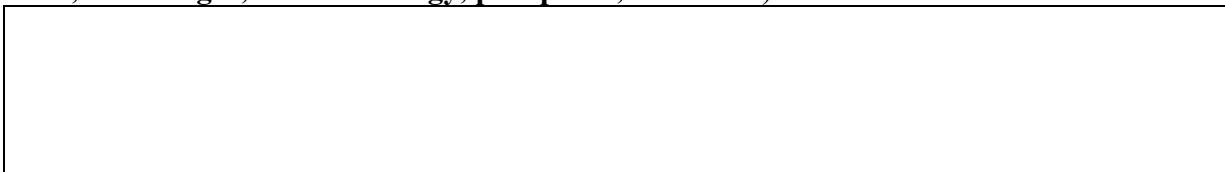
1. Find a picture of one **renewable** energy source we will never run out of (**answer: solar, wind, water, air, biomass, geothermal, electric**).



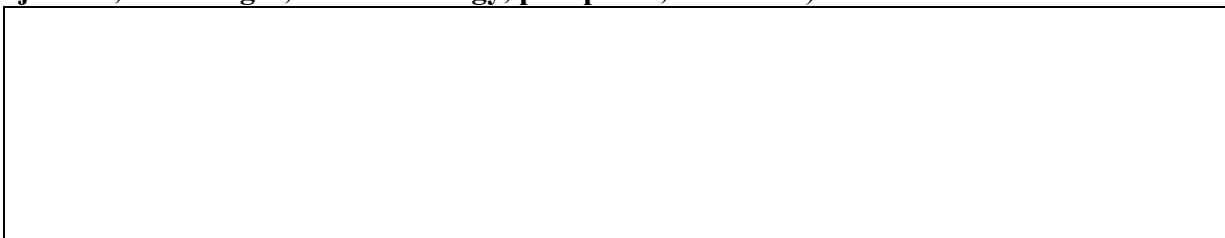
2. Find one **renewable energy company** and a picture of the renewable energy **product** they sell (**answer: look for companies and products related to: solar, wind, water, air, biomass, geothermal, electric**).



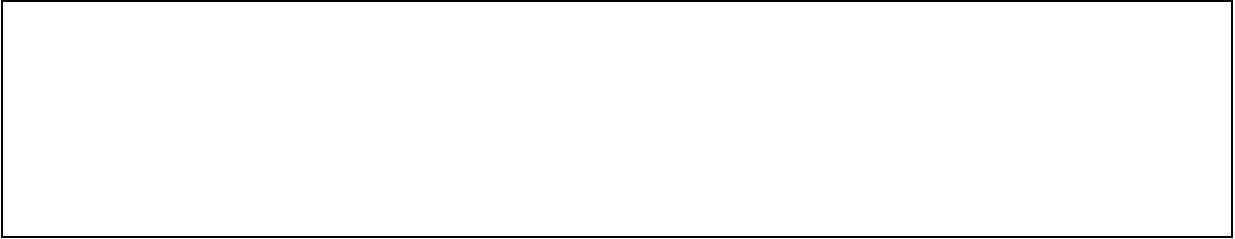
3. Find a picture of one **non-renewable** energy source (**answer: fossil fuels: coal, oil, gas, jet fuel, natural gas, nuclear energy, phosphate, limestone**).



4. Find one **non-renewable energy company** and a picture of the non-renewable energy **product** they sell (**answer: look for companies and products related to: fossil fuels: coal, oil, gas, jet fuel, natural gas, nuclear energy, phosphate, limestone**).



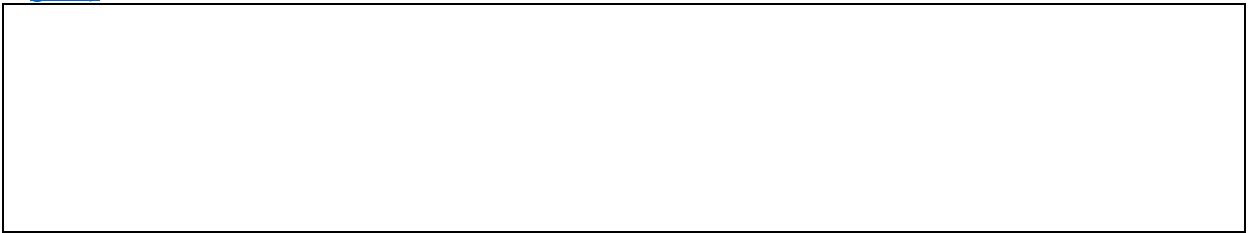
5. Find a picture of an *alternate fuel source* for transportation vehicles (*answer example: hybrid, biodiesel, hydrogen fuel cell, etc.*).



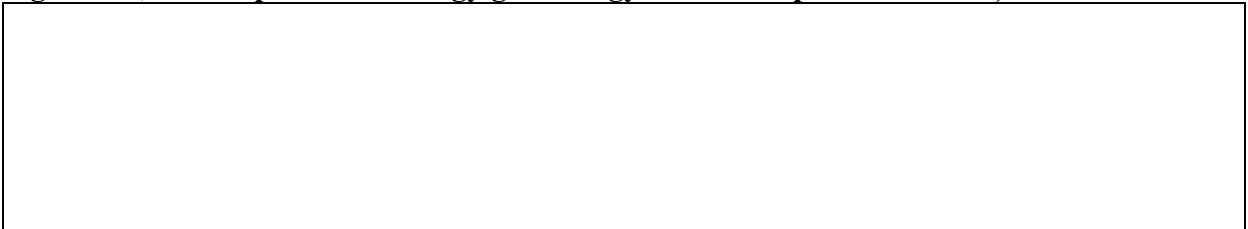
6. Find an *energy efficient vehicle* that requires less fuel by mile: (*answer: Tesla, Electric lithium battery*)



7. Find one *energy professional or career* title and describe what they do (*answer: there are a lot of careers that could be shared here. Here is a link to some energy professions/careers to reference: [https://www.energy.gov/eere/bioenergy/bioenergy-career-grid.](https://www.energy.gov/eere/bioenergy/bioenergy-career-grid)*)



8. Find a picture of the *most commonly used transportation fuel* in the U.S. (*answer sheet: gasoline, see: <https://www.energy.gov/energysaver/transportation-fuels>*)



Week 4 Session:

Duration	Activities	Facilitator	Resource(s)/ Material(s)
5 min	Week 4 CoT Video	BGCGW/CoT Staff	<ul style="list-style-type: none"> ○ Video link: https://www.clubhouseatyourhouse.com/week4
5 min	Video: Careers in global climate change, transportation, and energy	Club Facilitator	<ul style="list-style-type: none"> ● Learning video: ● Resource: www.cleanet.org/resources/57234.html ● DoT Materials: www.transportation.gov/womenandgirls/resource-s-teachers-mentors
5 min	Career Exploration Activity Instructions: Teens will research one career of interest related to the Transportation mode selected in Week 2 and energy source explored in Week 3.	Club Facilitator	<ul style="list-style-type: none"> ● Instructions
30 min	<p>Career Exploration Activities:</p> <p>Part 1: Research a notable figure or person in transportation and energy trace their career path and Complete the <i>Career Path Exploration Worksheet</i>. Teens will present their career learnings to each other.</p> <p>Part 2: Share 2-3 questions to ask the Career Professionals in Week 5.</p> <p>Part 3: Have 1-2 Teen members share about their notable figure or person with the group.</p>	Club Facilitator	<p>Resources:</p> <ul style="list-style-type: none"> ● Green Careers: https://www.careeronestop.org/GreenCareers/ExploreGreenCareers/explore-green-careers.aspx ● Fast Growing Careers: https://www.careeronestop.org/Toolkit/Careers/fastest-growing-careers.aspx ● <i>Career Path Exploration Worksheet</i>

5 min	Wrap-up	Club Facilitator	<ul style="list-style-type: none">○ Debrief questions.○ Week 5 overview.○ Submit <i>Career Path Exploration Worksheet</i>
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Outcomes:

Submitted ***Career Path Exploration Worksheet*** of understanding careers of interest that align with global climate change, transportation, and energy.