

**STUDENT
GUIDE**

I AM

EM



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Introduction

We have been celebrating Earth Day for fifty years, but there is still work to be done. There is good news though! According to the Earth Day Network (earthday.org), we can still work together to create a healthier, safer and more sustainable future for all. You are part of the generation that can be the key to this movement, and you can bring others, like your friends, parents and teachers, along with you! In these lessons, you will learn about all the many ways you can inspire others to make a difference!

You will:

-  **prepare** by learning about energy efficiency, renewable energy and environmental conservation, and what other young people like you are already doing to *take action* in these areas.
-  select a topic and create a message in the form of a Public Service Announcement (PSA) to **inspire** others to *take action* to save the environment.
-  be **EM-powered** to take your message into the community and invite others to *take action* to preserve the Earth!



Lesson One - Prepare

Prepare - this means you are getting yourself ready to get something done. Your job now is to inspire others to take action and help the environment. In this lesson, you will learn important information that will be your tools to get this job done.

Activity 1: GATHER INFORMATION AND EVIDENCE

There are many things that can be done to help the environment, but you are going to focus on three main areas:

- energy efficiency
- renewable energy
- environmental conservation

Find a partner and work together to research these three key areas. Your teacher has a list of recommended websites to explore. With your partner, select one website to review together. Use the chart below to collect your thoughts as you read the information from your selected site.

Selected Website:	
NOTICE - What did you see?	WONDER - What were your thoughts?

When you and your partner have finished describing the terms above, find another pair and share your work. Ask questions about words you don't understand and take notes about any additional information the other pair discovered.



Once you have reviewed your selected site with your partner, take some time to define the terms below. You can use the information you collected in the chart on previous page, other sources on the internet, textbooks and any available resources to find your information. While exploring these issues, you may have come across some advanced vocabulary. If you encountered other words you did not recognize or understand, add them below this list and define them in your own words using the same resources.

Term:	Define in your own words:
Energy Efficiency	
Renewable Energy	
Environmental Conservation	
Other Vocabulary	



When you and your partner have finished describing the terms, create a summary of what you discovered and learned. Your summary can be in the form of a written paragraph, tables or graphs or even a creative drawing. Submit this summary to your teacher to be shared with the rest of the class. As you review other classmates' summaries, ask questions about their work and take notes on information not uncovered with your own initial investigation.

Activity 2: IMAGINE THE FUTURE

As you learned in Activity 1, there are two types of energy - renewable (solar power) and nonrenewable (coal). Renewable energy comes from sources that are naturally restored. In the simplest terms, these sources do not run out because they are constantly being renewed. However, in 2017, about 89% of the energy used in the United States was from nonrenewable sources. These are sources that have a limited supply and if we keep depending on them for our energy, we could one day run out. Think about all the ways you use energy every day - energy that powers your alarm clock, heats the water for your hot shower, or runs the stove to cook your breakfast.

Imagine spending just one day without energy. Use the planner below to think about all the ways your day would be different.

A DAY WITHOUT POWER

	How your day looks now	How your day would be different without power
Waking up in the morning		
Getting ready for school		
Getting to school		
At school		
After school activities/clubs		
Homework		
Evenings		
Going to bed		

Share your imaginary day with the rest of the class.



Activity 3: LEARN THE ISSUES

It may be strange to think about a day without power, but that is one of many possibilities that make people want to work so hard to make changes now to save the environment. Let's take a closer look at the topics related to the three areas you explored in Activity 1.

Environmental Conservation: Conservation is about making choices as individuals, families, companies or even governments to preserve the environment by changing behaviors and habits. One of the environmental changes we can make is to save energy. This can include turning lights off when leaving a room or air-drying clothes. Some large organizations and governments are making changes to conserve energy like:

- Reducing the need for energy
- Placing taxes on high energy use
- Requiring "green" building design

These are big environmental conservation moves, but individuals and communities can make smaller changes to help the effort too. Make a list of some things you and others in your community can do to conserve the environment.

Energy Efficiency: Efficiency involves using technology that needs less energy to do the same work. Smart thermostats and energy-saving light bulbs are examples of energy efficient technology. Just like energy conservation, governments and companies are working to become more energy efficient. What are some things that could be changed to make your home, school and community more energy efficient?



Renewable Energy: There are many sources of renewable energy that are already being used around the world. Every day, new things are being learned about these sources. List some renewable energy sources here and the ways they are being used to help the environment.

Renewable energy source	How it is used to help the environment

Now that you have explored these concepts a bit deeper, take time as a class to make a list of all the topics you discovered. Include the renewable energy sources and the things you listed that can conserve energy and promote energy efficiency. Keep in mind that your Public Service Announcement (PSA) needs to address the overall subject of “Energy Efficiency and Protecting the Environment.” As you are generating a list of topics, remember to focus on this theme. You will use this list in the next lesson to select a topic and create a PSA to inspire others to take-action for the environment!

List of environmental conservation, energy efficiency and renewable energy issues:

Lesson Two - Inspire

When you inspire others, you help them discover a desire and the ability to do or feel something. Think of a time when you have been inspired to do something by someone else. Maybe you saw a celebrity on a commercial for a charity and you decided to donate to that cause. Or maybe a friend or family member volunteered with an organization and you decided to help too. Now you have the chance to inspire others in your community to take action to save the environment!

Activity 1: FIND SOURCES OF INSPIRATION

Sometimes it is easy to think that because you are young, or because you are just one person that you cannot make a difference. But there are many young people who are working to make a difference now. Let's take a look at some of their stories.

Jamie Margolin: Jamie is the founder of Zero Hour, an organization that supports young people as they work to protect our natural resources. Read her story here: <https://ultimatecivics.org/jamie-margolin-story/>

Jerome Foster II: Jerome is a young man in the United States who recently hosted the Washington, DC youth climate strikes at the White House. Read more about him here: <https://earthoptimism.si.edu/about/2020-summit/speakers/jerome-foster-ii/>

Alex Weber and Jack Johnston: These two California students worked together to establish The Plastic Pickup, a nonprofit organization that removes golf balls from the ocean. Read more about them here: <https://www.treehugger.com/meet-kids-who-are-changing-world-4868568>

Alexandria Villasenor: Alexandria is the founder of Earth Uprising, a nonprofit where youth around the world work together to save the environment. Read about her in the recent interview: <https://www.earthday.org/2019/05/23/14-year-old-alexandria-villasenor-has-been-striking-outside-un-headquarters-for-5-months-heres-why/>

Greta Thunberg: Greta is a young woman from Sweden who has inspired millions of kids across the world to join the movement for climate justice. Read her story here: https://kidsrights.org/advocacy/international-childrens-peace-prize/winners/greta-thunberg/?gclid=Cj0KCQiA0NfvBRCVARIsAO4930nh0C2DVrAc1kGIkQJdxiSiYkbMvtzndPPWYkjabj4KnuaHm89ZVpwaAtRAEALw_wcB

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Discuss these questions with your class or a small group:

- What do you remember most from these stories?
- What are some things these young people have done to help the environment?
- How have they inspired others to join their causes?
- What messages are they trying to share?
- How are they getting their message out to others?



Activity 2: SELECT YOUR TOPIC

If you want to inspire people like the young people in these stories, it is first important to pick a topic that you want to focus on and share with others. Look at the list you made at the end of Lesson One. Pick a topic that you think is important to share with your community, one that you think can make a difference in saving the environment. Remember that your topic needs to address the overall concept of “*Energy Efficiency or Protecting the Environment.*” Be sure to select a topic that fits within this theme.

After you pick a topic, research it with your classmates and use the table below to collect more information. Remember to use all available resources like the internet, textbooks, or teachers and other adults.

What is your topic?	
Why is this topic important to you?	
What can be done related to your topic to help save the environment?	
What can be done related to your topic to make a difference in your community?	
What are the three most important points about this topic?	
What else do you want people to know about this topic?	



Activity 3: CREATE YOUR MESSAGE

You have picked a topic and done the research to learn more about it. Now it is time to create a message about *Energy Efficiency and Protecting the Environment* that you can share with your community to inspire others to work together to save the environment.

You will use a Public Service Announcement (PSA) to share your message with others. PSAs are like commercials because they are short videos and they are often seen on television. But, unlike commercials that sell products, PSAs are designed to educate people about a cause or an issue. You will use your PSA to inspire people in your community and bring people together to take action to save the environment.

When crafting your PSA, you can think about the following questions to guide you:

- 1) What is the problem we are addressing?
- 2) What is the solution we are offering?
- 3) What is the action we want people to take?

Like a commercial, PSAs are very short, so you have to communicate your information quickly and with maximum impact. Most PSAs are about 30 seconds long, and you should aim for the same length (official submissions must be 45 seconds or less). It will take careful planning to be sure to share your important message, grab the audience's attention and stay within the time length.

Use the "Creating a Public Service Announcement Guide" to create, film and submit your PSA.

*OPTIONAL SOCIAL STUDIES LESSON



Lesson Three - A Focus on Conservation

You will:



Prepare by learning about

- Human Interactions with the Environment including human adaptations and modifications.
- The negative consequences of human actions to the environment
- The impact on energy conservation and efficiency by human actions
- Conservation efforts made to protect the environment



Select a topic and create a message to **inspire** others to **take action** to save the environment.



Be **EM-powered** to take your message into the community and invite others to **take action** to preserve the Earth!

Prepare - this means you are getting yourself ready to get something done. Your job now is to inspire others to **take action** and help the environment. In this lesson, you will learn important information that will help you get the job done.

Activity 1: GATHER INFORMATION AND EVIDENCE

We must understand the ways that human activity affects the environment. Additionally, it is important to recognize that humans are greatly impacted by environmental influences. Many of the important issues facing society are the result of these interactions. Some of these are intentional and positive; others unintentional and negative. These changes have political, economic, and social consequences, from the local to the global. We must understand the interaction between people and the environment in order to create positive change.

There are many things that can be done to help the environment. You are first going to focus on understanding the interactions between people and the environment using these terms:

Interaction

Dependence

Modify

Adapt



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Vocabulary Word Map

Directions: Define the bold-faced words in the CONTEXT of each phrase.

Phrase: Humans **interact** with the environment

Define it in your own words	Draw or insert a picture
Example	
Use it in a sentence	

Phrase: Humans **depend** on the environment

Define it in your own words	Draw or insert a picture
Example	
Use it in a sentence	

Vocabulary Word Map (continued)

Phrase: Humans **modify** the environment

Define it in your own words	Draw or insert a picture
Example	
Use it in a sentence	

Phrase: Humans **adapt** to the environment


Define it in your own words	Draw or insert a picture
Example	
Use it in a sentence	

Activity 2: Human-Environmental Interaction


As you learned in Activity 1, there are many ways that humans and the environment affect each other. It is demonstrated in how people **DEPEND** on, **MODIFY** and/or **ADAPT** to the environment.


Read each description/picture of Human-Environment Interaction on the chart. (Alternatively, click on the link for a picture)

Decide which type of interaction is demonstrated in the description/picture and explain your choice.


Description/picture of Interaction	Circle/Highlight the correct interaction described (choose one)	Explain WHY you chose this response
 <p>https://www.quora.com/What-are-the-implications-for-climate-change-to-our-everyday-life-Why-cant-we-depend-on-the-enduring-ability-of-human-adaptation-to-deal-with-it</p>	<p>DEPEND</p> <p>MODIFY</p> <p>ADAPT</p>	


Activity 2: Human-Environmental Interaction (continued)

Description/picture of Interaction	Circle/Highlight the correct interaction described (choose one)	Explain WHY you chose this response
 <p>https://ucsdnews.ucsd.edu/feature/deforestation-drives-disease-climate-change-and-its-happening-at-a-rapid-rate</p>	<p>DEPEND</p> <p>MODIFY</p> <p>ADAPT</p>	


Description/picture of Interaction	Circle/Highlight the correct interaction described (choose one)	Explain WHY you chose this response
 <p>https://kullabs.com/class-miscellaneous/miscellaneous-subject/population-and-environment/human-dependency-on-the-environment</p>	<p>DEPEND</p> <p>MODIFY</p> <p>ADAPT</p>	


Activity 2: Human-Environmental Interaction (continued)

Description/picture of Interaction	Circle/Highlight the correct interaction described (choose one)	Explain WHY you chose this response
 <p>http://www.westerville.k12.oh.us/userfiles/4188/Classes/7526/humanforcesthatchangeenvironment.pdf?id=448117humanforcesthatchangeenvironment.pdf?id=448117humanforcesthatchangeenvironment.pdf?id=448117humanforcesthatchangeenvironment.pdf?id=448117</p>	<p>DEPEND</p> <p>MODIFY</p> <p>ADAPT</p>	

Description/picture of Interaction	Circle/Highlight the correct interaction described (choose one)	Explain WHY you chose this response
 <p>https://kullabs.com/class-miscellaneous/miscellaneous-subject/population-and-environment/human-dependency-on-the-environment</p>	<p>DEPEND</p> <p>MODIFY</p> <p>ADAPT</p>	

Activity 2: Human-Environmental Interaction (continued)

Description/picture of Interaction	Circle/Highlight the correct interaction described (choose one)	Explain WHY you chose this response
 <p>https://www.google.com/search?q=human+adapt+to+the+environment+t&tbm=isch&ved=2ahUKEwjX8ujk2-vsAhVLJd8KHYY-IAC0sQ2-cCegQIABAA&oq=human+adapt+to+the+environment+t&gs_lcp=CgNpbWcQA-1CLiQFYi4kBYPMMAWgAcAB4AIABN4gBN5I-BATGYAQcGAQgQAQtd3Mtd2l6LWltZ8ABAQ&s-client=img&ei=7RmkX5fIBsvK_AaCgazYBA&bih=581&biw=1242&rlz=1C1GCEB_enUS926US926&safe=strict#imgsrc=AelC2laseR5tgM</p>	<p>DEPEND</p> <p>MODIFY</p> <p>ADAPT</p>	

Description/picture of Interaction	Circle/Highlight the correct interaction described (choose one)	Explain WHY you chose this response
 <p>https://www.osler.com/en/resources/regulations/2016/renewable-energy-and-climate-change-canada-s-new</p>	<p>DEPEND</p> <p>MODIFY</p> <p>ADAPT</p>	



Activity 2: LEARN THE ISSUES

A. Consequences of Adaptations and Modifications to the Environment

Optional Video: <https://www.generationgenius.com/videolessons/human-impacts-on-the-environment-video-for-kids/>

True or False? Provide evidence to either confirm or refute the statement.

1. We are not able to repair the negative impacts humans have had on the planet.

TRUE or FALSE

Evidence to support or refute the claim above:

2. Human activities have been linked to climate change.

TRUE or FALSE

Evidence to support or refute the claim above:

3. Environmental conservation refers to efforts by humans to protect our planet and preserve its natural resources.

TRUE or FALSE

Evidence to support or refute the claim above:



4. Laws written to protect the environment have had no benefit.

TRUE or FALSE

Evidence to support or refute the claim above:

Optional additional T/F questions : <https://www.earthday.org/environmental-literacy-quiz/>

B. BE INSPIRED TO DO SOMETHING!

Example 1:

In her book *Silent Spring* published in 1962, Rachel Carson warned about what might happen if the use of dangerous pesticides continued. Read the following passages and answer the questions below.

(Note: Pesticides are substances used to control plant or animal pests)

...There was a strange stillness. The birds, for example—where had they gone? Many people spoke of them, puzzled and disturbed. The feeding stations in the backyards were deserted. The few birds seen anywhere were [dying]; they trembled violently and could not fly. It was a spring without voices. On the mornings that had once throbbed with the dawn chorus of robins, catbirds, doves, jays, wrens, and scores of other bird voices there was now no sound; only silence lay over the fields and woods and marsh....

....The roadsides, once so attractive, were now lined with browned and withered vegetation as though swept by fire. These, too, were silent, deserted by all living things.

....Even the streams were now lifeless. Anglers [fishermen] no longer visited them, for all the fish had died. In the gutters under the eaves and between the shingles of the roofs, a white granular powder [pesticide DDT] still showed a few patches; some weeks before it had fallen like snow upon the roofs and the lawns, the fields and streams....

Source: Rachel Carson, *Silent Spring* 1962, adapted by NYSED 2014



1. According to the passage on the previous page, how did the use of the pesticide DDT negatively impact the environment?

...Silent Spring planted the seeds of a new activism that has grown into one of the great popular forces of all time. When Rachel Carson died, in the spring of 1964, it was becoming clear that her voice would never be silenced. She had awakened not only our nation but the world. The publication of Silent Spring can properly be seen as the beginning of the modern environmental movement....

Source: Vice President Al Gore, introduction to 1994 edition of Silent Spring, adapted by NYSED 2014

2. According to former Vice President, Al Gore, in what way did Rachel Carson's book make a difference?

Note: *Silent Spring* prompted the government to act. Laws were passed to restrict/control the use of all 6 dangerous chemicals mentioned in the book in addition to other changes. Carson testified before Congress, and was greeted with the words, ***"You are the lady who started all this."*** She made a difference - so can you!

[http://www.environmentandsociety.org/exhibitions/rachel-carsons-silent-spring/us-federal-government-responds#:~:text=After%20Silent%20Spring%2C%20Congress%20revised,\(FIFRA\)%20served%20these%20goals.](http://www.environmentandsociety.org/exhibitions/rachel-carsons-silent-spring/us-federal-government-responds#:~:text=After%20Silent%20Spring%2C%20Congress%20revised,(FIFRA)%20served%20these%20goals.)

Example 2:

Click on the link below or read details from the PSEG Long Island website below
(Note:same information in both places)



The Majestic Osprey

The more people know about osprey, the more they love them. A symbol of a healthy environment, this majestic raptor has mastery over the land, sea and air. Ospreys have made Long Island's coastlines and abundant fish populations their home. These powerful migratory hunters tend to come back to the same location each year to nest and raise their young.

Historically ospreys would nest near the water in dead trees. Now ospreys often choose other high locations such as telephone and utility poles, posing serious safety concerns for both the birds and our customers(PSEG Long Island).



1. According to the passage above, identify the problem faced by the Osprey on Long Island due to Human Interaction with the Environment.

Since the resurgence of the osprey population, PSEG Long Island and its dedicated team have identified best practices for when to move a nest, and when to create alternative safer nests for the ospreys. PSEG Long Island workers have safely relocated two dozen osprey nests in order to ensure they are out of harm's way from high voltage systems, and taken actions to make nests safe in place at an additional eight locations

2. According to the passage, what has PSEG Long Island done to help protect the Osprey from danger associated with telephone and utility poles?

Check out the live osprey cam:

<https://www.psegliny.com/wildlife/ospreycam>

Steps for identifying a topic for further study on **conservation and protection of the environment**:

- Problem
- Solution
- Challenge/Action



Creating a Public Service Announcement

Creating a Public Service Announcement (PSA) can help you bring your community together around a subject that is important to you.

In this guide, you will learn how to create a PSA to help you spread your message and save the environment.

GETTING STARTED

- 1 Think.** When it comes to saving energy to help the environment, what is important to you – is it turning off the lights? Is it unplugging devices? Is it increasing the use of wind power? Is it creating regulations to make corporations more energy efficient? In Lesson Two, you picked a topic that is important to you that you can talk about on video. Write that topic here:

Tip: Keep your focus narrow and to the point. More than one idea confuses your audience.

- 2 Research.** You have done some research on your topic, but you can always learn more. Take a look at how people around you act around your topic. Example, does your dad leave the lights on when he leaves the room? Are there companies near you that are using renewable energy sources? Including real-life examples in your PSA can make a strong impact.

Tip: Including statistics can also get people's attention, especially if you can find ones that directly relate to them, your audience.

You can turn to Google for statistics which will help strengthen your PSA. Simply type in your "Topic + how much energy is wasted." Example, "AC + how much energy is wasted" or "How much energy does the AC use?"

- 3 Audience.** Who are you targeting – parents, teens, teachers or someone else? You want to make sure you know who you are talking to through your PSA and make sure that your message is clear.

Tip: When it comes to your messaging, short and sweet is key!

- 4 Content.** Before you start filming your PSA you will want to think about your content. For example, you could write out on paper your PSA and have someone hold it up while you film. You could film the action taking place (ex. Your dad walking out of the room and leaving the light on). You could do a combination of things to help you get your message across to your audience.

Tip: Don't make this too complicated. Pick something you can easily do and just do it.

- 5 Script.** You can create a script with a few key points to help you during filming which highlights the major and minor points that you want to make. Be sure the information presented in the PSA is based on up-to-date, accurate research, findings and/or data.

Tip: Grab a 3x5 index card and write down up to 3 talking points that you want to cover. Use the information from the table in Lesson Two to help you write these cards.

- 6 Get camera ready.** Before filming your PSA you want to make sure you are "camera ready." This means you will need to make sure you:
- Comb your hair
 - Plan out what you will wear
 - Review your shooting location the day before – try going by at the same time of day you plan on shooting that way you get a better idea of what happens around that time
 - Check all your equipment (smartphone is fully charged and has storage space, you have working headphones with the mic built-in, a soft cloth to clean your camera lense before shooting)
 - Practice your stance, posture, and weight balance – will you be standing or sitting?

- 7 Filming day.**
- Grab your camera (this can be a smartphone if you like)
 - Find a good place to shoot (find a quiet place you can film without interruptions)
 - Review your notes
 - Prop your camera up (using a tripod or have someone else hold it for you, this avoids shaky videos)

continued on next page

7 Filming day continued

- e. Do a test video to make sure everything is working and that your sound is good. Remember, you can use headphones that have a built-in mic so that you can get good audio – audio and video are so important for your PSA.
- f. Speak slowly, clearly, and loudly with good energy – you want to get people excited and passionate about your topic, just like you are!
- g. Tips
 - i. Keep your video short, 30 seconds ideally, but absolutely no more than 45 seconds. Also, make sure that you have a location that doesn't have a lot of noise and has good lighting.
 - ii. Be sure to have a clear call to action – tell people exactly what they need to do next as it relates to your PSA. Example, "Turn off the lights when you leave a room."
 - iii. Use hand gestures to add energy
 - iv. Make direct eye contact with the camera so your audience feels like you are looking directly at them.
- h. Hit the record button – and action!

Once you have recorded your PSA you will want to review it to make sure you covered everything you wanted to before packing everything up.

If you need to do any editing feel free to use your favorite editing program (need a suggestion? iMovie for those with Apple products, Windows Movie Maker for PC products).

Once your PSA is ready you will want to share with your teacher.



Notes:



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Developed by

