

CARBON FOOTPRINT VIRTUAL PROJECT

Read through the following questions, prompts, and directions and complete them accordingly. Answer these questions as best as you can. Afterward, watch the video provided and then add information to your answer. Type them in two different colors – **blue** for your initial response and **green** for your response after watching the video.

1. When we switch on a light, what is the source of this power?

ANSWER (before video): _____

ANSWER (after video): _____

2. How was this power created?

ANSWER (before video): _____

ANSWER (after video): _____

Here's a video to watch – Video One: <https://youtu.be/OlrMBY1vkss>. Use it to help answer the questions again.

3. What can we tell about the different types of fuel sources that are used to produce electricity?

HINT: They each create heat that is used to create steam that turns the turbine that creates electricity.

4. There is a lot that you can learn about power in South Carolina from interpreting charts, graphs, and illustrations. Visit these websites.

- See **South Carolina Profile State Profile and Energy Estimates** at www.eia.gov/state/?sid=SC – and review the Overview, Data, and Analysis sections. What kind of information did you find on this page?

- See the **Beta Version Website** at www.eia.gov/beta/states/states/sc/rankings. What information could be helpful to you from this website?

- See **South Carolina Energy Office Website** at <http://energy.sc.gov/> – and review the South Carolina Energy Data, Renewable Energy, Residential

EXPLAIN:

Use your resources to research and explain an energy source (e.g., coal, oil, natural gas, nuclear, solar power, wind) used in creating energy. Pick one of the energy sources to answer the questions about. You may work with a friend to answer the following questions.

1. How was it formed or created (for fossil fuels) or what is the process that causes it (solar, etc.)?

2. What is the availability in our state?

3. What are the environmental advantages/ disadvantages?

4. Provide five interesting facts about the energy source in South Carolina found on the websites.

1) _____

2) _____

3) _____

4) _____

5) _____

ELABORATE:

The size of your carbon footprint indicates how much impact you have on the environment. Complete the **Carbon Footprint Survey** and color a footprint to show the relative size of your family's impact on the environment. The survey is available at www.energystar.gov/ia/products/globalwarming/downloads/GoGreen_Activities%20508_compliant_small.pdf.

BACKGROUND INFORMATION:

Read this before continuing.

The light and heat from the sun support life on Earth and provide the energy needed for plants to grow. Energy from the sun drives the Earth's weather and climate. The Earth absorbs some of the energy it receives from the sun and radiates (sends out) the rest back toward space. However, certain gases in the atmosphere, called greenhouse gases, absorb some of the energy radiated from the Earth and trap it in the atmosphere.

These gases act as a blanket, making the Earth's surface warmer than it otherwise would be. In the past 100 years or so, humankind has created machines, factories, and vehicles that have greatly increased the amount of greenhouse gases in our atmosphere. This increased level of greenhouse gases means more heat is held in the atmosphere and the Earth is getting warmer.

These warmer temperatures are causing changes around the world on land, in the oceans, and in the air. This could upset the delicate balance that sustains life. Whether we realize it or not, we all emit carbon dioxide, one of the greenhouse gases, through our day-to-day activities. The amount we emit is referred to as our "carbon footprint." The bigger the footprint, the more carbon dioxide that comes from each of us as a result of the choices we make.

Climate change caused by excess greenhouse gases and a big carbon footprint can cause:

- **Heat waves that damage crops, stress livestock, and make life difficult for people;**
- **More air pollution, which is linked to allergies, asthma, and other health problems;**
- **Severe storms and flooding due to higher sea levels; and**
- **Loss of habitat as the climate changes, particularly in Arctic regions.**

Families can help reduce their carbon footprint by focusing on four major areas that generate excess carbon dioxide:

- 1. Housing and household energy use;**
- 2. Transportation;**
- 3. Personal habits; and**
- 4. Recycling.**

In the game, you'll have the chance to estimate the relative size of your family's carbon footprint as well as learn easy ways you can help reduce it.

CARBON FOOT PRINT SURVEY:

1. Complete the survey handed out to you or print it off in the link above. The following color crayons will represent the four categories of behavior surveyed.

Housing and Home Energy: RED
Personal Habits: GREEN
Transportation: BLUE
Recycling Habits: BROWN

2. Complete the **Carbon Footprint Survey**.
3. Color in the **Carbon Footprint** document. Color from the inside out. Each time you need to color, make sure you're coloring a new ring and are not coloring over a ring.
4. Read the **"What Can You Do To Reduce The Size of Your Carbon Footprint?"** worksheet and reflect on the information

EVALUATE:

Create a poster (physical or virtual), online presentation, video, TikTok, song, or something else that you can share what you have learned.

REQUIREMENTS:

One way of reducing our Carbon Footprint is to bring awareness of the issue.

- **List at least three specifics of how to reduce your carbon footprint.**
- **List at least three consequences of not reducing your carbon footprint.**
- **Include at least 2 or 3 illustrative examples.**

FUN FACT:

Did you know that South Carolinians consumed 329 million BTUs of energy per person in 2018. A Btu is the amount of heat required to raise the temperature of one pound of water by one degree Fahrenheit.

SOURCE: energy.sc.gov/node/3063

NOTE: This activity is shared with permission from Alexis Del Castillo.