

SOCAN Climate in the Curriculum Project
Climate Change: What we can do
Target Level: 4th – 6th Grade

Materials/Assistants:

- One “Guide” per group. A “Guide” is a person who understands the objectives and can guide and record for the group through the activity.
- PowerPoint presentation
- Activity - Part I: Brainstorming
 - One sheet of paper per group with one of the areas printed on it. Repeat areas as needed.
 - One sheet of butcher paper (approx. 3’x3’) & 1 set of colored markers per group
- Activity – Part III: Individual Choice
 - 5x8 card & pencil for each student]

Objectives: Students will:

Explain the link between climate change and carbon dioxide emissions.
Connect personal choices to reducing carbon dioxide emissions.
Identify specific actions they can take to reduce CO₂ emissions.

Oregon State Science Standards that are related:

- 4.2E.1 Compare and contrast the changes in the surface of Earth that are due to slow and rapid processes.
- 4.4D.3 Explain how the solution to one problem may create other problems.
- 5.2E.1 Explain how the energy from the sun affects Earth’s weather and climate.
- 6.1P.2 Compare and contrast the characteristic properties of forms of energy.
- 6.4D.1 Define a problem that addresses a need and identify science principles that may be related to possible solutions.

Running

Time

[0] **Set-up:**

1. Introduce guides
2. Identify & explain our signal to get attention (raise hand)

[2] **Introduction:**

1. Question: How many have heard about Climate Change or Global Warming? (raise hands)
2. What do you know? or What have you heard? (call on 3-4 students to share)
3. Do you remember the smoke last summer? (raise hand if you do)
4. What caused it? (1-2 students) {Note: if student responds something like “lightening,” ask why it was worse last summer because we have always had lightning strikes. Can include information that 1° F is the difference between a low and high fire year.

[7] **Information:** (Strategy: start from the end idea and work to beginning) Power Point slides

1. Wildfires have been increasing
2. Scientists understand that climate change contributes to increasing wildfires.



3. What is causing Climate Change?
 - a. Climate Change Basics I (sun→hitting ground→warming→back into atmosphere sequence). Questions to assess understanding.
4. What causes warming?
 - a. Climate Change Basics II (add thermal blanket)
5. What are these gases?
 - a. Carbon dioxide = CO₂
 - b. Methane = Natural Gas
 - c. Oxides of Nitrogen
6. From where do these gasses come?
 - a. Coal
 - b. Oil/gasoline
 - c. Natural gas
7. For what do we use these fuels? And details on each of these areas
 - a. Materials
 - b. Transportation
 - c. Energy
8. Review: Now let's start at the end and go back
 - a. Reducing our fuel use for materials, transportation, and energy...
 - b. Reduces our use of coal, oil, natural gas....
 - c. Reduces our emissions of carbon dioxide, methane, oxides of nitrogen...
 - d. Reduces our warming of the atmosphere...
 - e. Reduces wildfire risk (and other consequences)
9. Big question – What can **WE** do?

Activity

[17]

Part I: Brainstorming

1. Directions: Each group will get a paper with one of these areas (Transportation, Materials, Energy) and one sheet of butcher paper.
2. "Guide" will be the recorder and will use a web outline format with the assigned area (Energy, Transportation, Materials) circled in the center.
3. The group will brainstorm ideas of things students (not your parents or somebody else) can do to reduce emissions in the area designated on your group card. (Review rules of brainstorming.)
4. You have 5 minutes. I will raise my hand when your time is up.

[22]

Part II: Discuss ideas

1. In your group you will identify what each of the ideas you have written on your paper means. The Guide will add symbols and comments. Consider:
 - a. Will it be possible to do? (Feasibility)
 - b. How much of an impact will it have on the release of CO₂? (Gas)
 - c. Will it cost a lot of money? (\$) or Will it save money? (\$)

[27]

Part III: Individual Choice

1. Each person will get a card (5x8) & a pencil. Put your name on the top.
2. You will pick one of the ideas on your group's list and write it on your card. This must be something that you are willing and able to do.

3. Write 1-2 sentences explaining why you made your choice.

[32] **Part IV: Group Interaction**

1. Guide picks one student to share what they have written with the class.

[37] **Summary:**

1. What did you learn today? (3-5 student responses as time allows)
2. Give your card to the Guide who will give them to your teacher.

[40] **End**

Ideas for Related Class sessions:

1. Research can be done for any of the following topics:
 - a. What changes are taking place on the surface of the Earth due to factors associated with climate change (i.e., increased temperatures, ocean acidification, reduced snow pack)
 - b. Trace the increase of CO₂ from the Industrial Revolution to the current time.
 - c. Examine the differences between weather and climate and how the energy from the sun affects each of these.
 - d. Explore the characteristics of different wave lengths of radiation.
 - e. Identify a problem associated with climate change and propose possible solutions.
2. Identify books (fiction and non-fiction) that incorporate issues related to climate change.
3. Develop a writing assignment that extends the student's selection on their card.

Comments to Teachers

Examples of student responses/reason:

- Grow my own food./ You don't need transportation to bring your food.
- Buy paper made of non-trees for my school supplies./Trees are important and trees turn CO₂ to O.
- Walk./ It doesn't take any gas and doesn't pollute the earth.
- Ride my bike./ Conserves gas and makes less pollution.
- Don't buy useless stuff./ They won't make as much.
- Use hand me downs./ I have a brother so I can use his clothes. He does give them to me but I don't wear them. I will start to wear them. This means less energy to make new clothes.

