Climate Change Meeting Outline

Opening - 10 min

Introduction - 10 min

Climate change is a global concern with the potential to significantly affect the future of the next generation. In fact, it will affect not only their future but the present. There is strong evidence that human activities are impacting our climate now – resulting in warmer temperatures, a greater frequency and intensity of storms and droughts, and a higher incidence of forest fires.

Climate change refers to a change in the weather (temperature, wind and precipitation) typically experienced in a region. At a global level these changes impact the Earth's climatic balance. Evidence is gathering that human activities are changing climate, or perhaps accelerating naturally occurring climate change. The Earth has warmed significantly over the past 100 years and scientists are almost universally in agreement that this is in large part due to human activity.

The climate is changing because of a "greenhouse effect" taking place in the atmosphere. Certain gases exist naturally in the atmosphere. These gases act like the glass of a greenhouse keeping some of the sun's radiant heat in near the earth, making the earth's climate warm enough to sustain life. However, human activities, chiefly the combustion of fossil fuels for energy or heat, create "greenhouse" gases. When a high concentration of these gases build up in the atmosphere the climate of the earth changes.

Stations - 60 min (15 min each)

Station 1: Climate Change Cootie Catchers - **Gosia**

- make the finger flippers
- play with the flippers

Materials:

1. 5 scissors
2. 30 template printouts
3. colouring pencils

Station 2: Solar Code - **Kenn**

- Crack the solar code to learn about solar energy
- discussion of the benefits/drawbacks of solar energy
  - pros: clean infinite
  - cons: still more expensive than oil; doesn't work when the sun is not out, so needs a batteries/backup

Materials:

1. 30 printouts
2. pencils

Station 3: How much energy does it take to make popcorn? - **Nestor**

- Discuss what goes into making, transporting and then popping corn

Materials:

1. 6 bags of popcorn
2. 1 microwave oven

Station 4: Chase an answer - **Graham and Paul**

- tape up printouts and have kids run around to find them
- See activity sheet

Materials:

3. printouts
4. tape

Closing - 10 min

CUB MEETING SCHEDULE
CLIMATE CHANGE: WEEK 3
Theme: Save Waste = Save Energy

Introduction: The manufacture, distribution, and use of products - as well as management of the resulting waste - all result in greenhouse gas emissions.

By reusing goods and purchasing recycled products, less energy is needed to extract, transport and process raw materials. When energy demand decreases, fewer fossil fuels are burned and less carbon dioxide is emitted into the atmosphere.

Trees absorb carbon dioxide from the atmosphere and store it in wood in a process called "carbon sequestration." Waste prevention and recycling paper products allows more trees to remain standing in the forest, where they can continue to remove carbon dioxide from the atmosphere and help regulate our climate.

Objective: To introduce the Cubs to some of the ways that we can save energy through waste reduction and how this is related to climate change.

GATHERING ACTIVITY

Climate Change Cootie Catchers

(also known as finger flippers)

Objective:

To give the Cubs an information source at the beginning of the evening to get them curious about recycling and to reinforce the “Saving Energy” concepts.

Background Information:

The answers for the questions to the Cootie Catcher are on the template.

Equipment:

- Photocopied sheets of the model provided (see page 6).
- Scissors.

Instructions:

- The Cubs make the Cootie Catchers by using the instructions or by following the leader step by step.
- Once the Cootie Catchers are folded, the Cubs can colour them.
- How to play with Cootie Catchers:
  1) partner up,
  2) the Cub without the catcher chooses one of the four words,
  3) spell out the word while opening and closing the Cootie Catcher,
  4) the other Cub chooses which question they want of those showing,
  5) ask the question and
  6) check if the answer is correct by lifting the flap on which the question is written.
- Cubs can take the Cootie Catchers home but remind them to recycle the paper when they are finished.

THEME ACTIVITY
Solar Code

Objective:

To introduce the concept of solar energy through a puzzle.

Background Information:

Solar energy is an important type of renewable energy. Our sun's radiant energy can be used to produce electricity. This method is called photovoltaic energy. The sun's rays are collected in a solar panel and converted into electricity. The most popular use of solar power is spacecraft and satellites, although many homes, cottages and boats are now being fitted with solar panels. The sun can also be used to heat up spaces or materials. Solar hot water heaters and solar cookers are two examples of this.

Equipment:

- The "Solar Code" template photocopied (see page 8)
- Pencils.

Instructions:

- The Cubs work on the puzzle while they are waiting for the other Cubs to finish their anemometers.

~~*THEME ACTIVITY*~~
~~*Anemometer Testing*~~

~~*Objective:*~~

~~To show the Cubs that the wind can make things move and that there are more and less efficient ways to capture the wind's energy.~~

~~*Background Information:*~~

~~In order to determine where a wind turbine should be placed, it is necessary to test how much wind there is in that location over the period of a year. An anemometer is used to measure the frequency and speed of wind. It is necessary to have at least 10 mph winds in order to create electricity in most wind turbines.~~

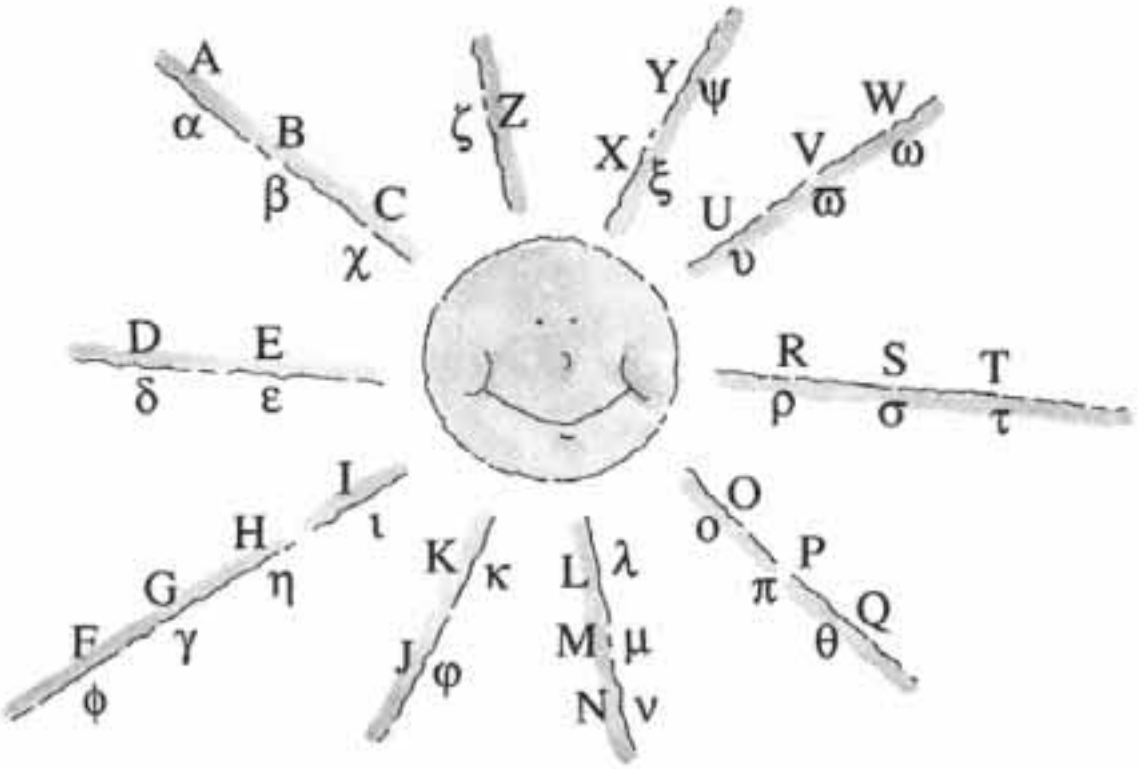
~~*Equipment:*~~

- ~~One electric fan for every two sixes, or move outside if it is windy~~
- ~~Watch with a second hand.~~

~~*Instructions:*~~

- ~~Working in sixes, the Cubs stick their anemometers on the ground about a metre in front of the electric fan, or in the wind outside, so that they are not blocking each other. The Cubs count how many times they see the coloured cup come around the circle in thirty seconds and record this number.~~
- ~~Discuss how the design of the anemometer improves its efficiency and allows the cups to spin better.~~
- ~~Discuss how engineers use an anemometer to figure out the best places for wind turbines.~~

Solar Code Template



Crack the solar code to learn about solar energy:

1. Sunshine is a _____ source of energy.
   φ ρ ε ε
2. Solar energy has little or no harmful effects on our _____
   ε ν ϖ ι ρ ο ν μ ε ν τ
3. Solar energy is useful in remote areas where it would be expensive to install _____.
   π ο ω ε ρ λ ι ν ε σ
4. Solar energy depends on the amount of _____ we receive and is therefore not always predictable.
   σ υ ν λ ι γ η τ

Source: Solar Code. *Energy and our Environment*. Thank-you to SaskPower.

THEME ACTIVITY
How Much Energy Does it Take to Make Popcorn?

Objective:

To get Cubs thinking about the fact that it takes energy to do and make everything on the earth.

Background Information:

The production of energy from non-renewable energy sources such as coal, oil and gas is one of the main sources of greenhouse gases in Canada. It is important to realize that energy is used to create new materials, processes or services and to try to minimize the amount of energy Canadians demand.

Equipment:

- Popcorn kernels
- A popcorn popper
- Butter or margarine
- Bowls for the popcorn
- A piece of flip chart paper for each six
- Markers.

Instructions:

Before starting this activity, check for allergies.

- Discuss with the Cubs how it takes energy to do everything (put up a tent, drive a car, etc.) and make everything (clothing, games, etc.) in the world. Ask them to think about all the types of energy needed to make the popcorn (sun to grow it, farm equipment to harvest it, trucks to bring it to stores, machinery to package it, cows' energy to make milk, machinery to make butter, electricity to make the popper work, human energy to put it together etc.).
- Form into sixes and put a large piece of paper in the middle of each six. Draw a few popped popcorn kernels in the middle. Ask the Cubs to draw all the energy ideas around the popcorn on the sheet with lines going to the popcorn.
- A leader can get the popcorn popper set up and once the activity has started, make the popcorn.
- Each six presents their ideas on their sheet while the rest of the Cubs are eating their popcorn.

Adapted from *Green Teacher*, On line articles, *Planet Earth Pages - Resource Conservation*.

GAME
Climate Change X's & O's

Objective:

To test the knowledge of the Cubs on climate change while playing a life-size game of X's and O's.

Background Information:

See sections above for more detailed descriptions of climate change.

Equipment:

- A diagram of X's & O's on a piece of paper (see page 10)
- 2 sets of 9 chairs
- 12 questions on climate change based on story before (see page 10).

CUB MEETING SCHEDULE
CLIMATE CHANGE: WEEK 2
Theme: Saving Energy

Introduction: Energy exists in different forms such as heat (thermal), light (radiant), mechanical, electrical, chemical, and nuclear energy. There are two types of energy -- stored (potential) energy and working (kinetic) energy. For example, the food we eat contains chemical energy, and our bodies store this energy until needed. We use all these energy sources to generate the electricity we need for our homes, businesses, schools and factories, to run our cars, or to cook on an outdoor grill. (Visit these government web sites for more information www.eia.doe.gov/kids/consumption/consumption.html or www.eia.doe.gov/kids/consumption/transportation.html)

In Canada, a large part of the energy that we consume comes from nonrenewable energy sources, which include the fossil fuels such as oil, natural gas and coal. They're called fossil fuels because they were formed over millions and millions of years by the action of heat from the Earth's core and pressure from rock and soil on the remains (or "fossils") of dead plants and animals. Burning fossil fuels such as coal and oil to produce energy not only creates greenhouse gases but also creates air pollution. By saving energy, we can reduce greenhouse gases, air pollution, and practice the careful use of the earth's resources. (Visit these government web sites for more information on oil, natural gas and coal www.eia.doe.gov/kids/non-renewable/oil.html, …/natural gas/ …/coal.)

Objective: To ensure the Cubs understand that using energy is linked to climate change and that there are many ways to save energy.

GATHERING ACTIVITY

Chase An Answer

Objective:

A game involving questions about energy and climate change.

Background Information:

See pages 7 and 8 for background information on the answers.

Equipment:

- Tape
- Photocopied and cut-out pictures of various items that represent the answers to the questions. You will need as many copies of each picture as you have teams (see pages 7 and 8)
- Questions (see page 7).

Instructions:

- The object of the game is to be the team that gets the most correct pictures and finds them the quickest. For each question give a point to the team whose player made it back first with the right answer.
- Before the Cubs arrive, tape the pictures to one wall at about eye level.
- Line the Cubs up, sitting in relay fashion, near the opposite wall from the pictures.
- Explain to the Cubs the objective of the game. They cannot leave the start line until the question has been read completely. Also, if they bring the wrong answer back they must return it and get the right answer before the next question is read.
- Read the first question.
- The first Cub in each team races to the other side of the meeting room, finds the right picture and races back to the team with the picture. When all the Cubs are back, discuss the right answer with the group before the next set of Cubs take their turn.
- Add more pictures and questions to the mix if necessary.

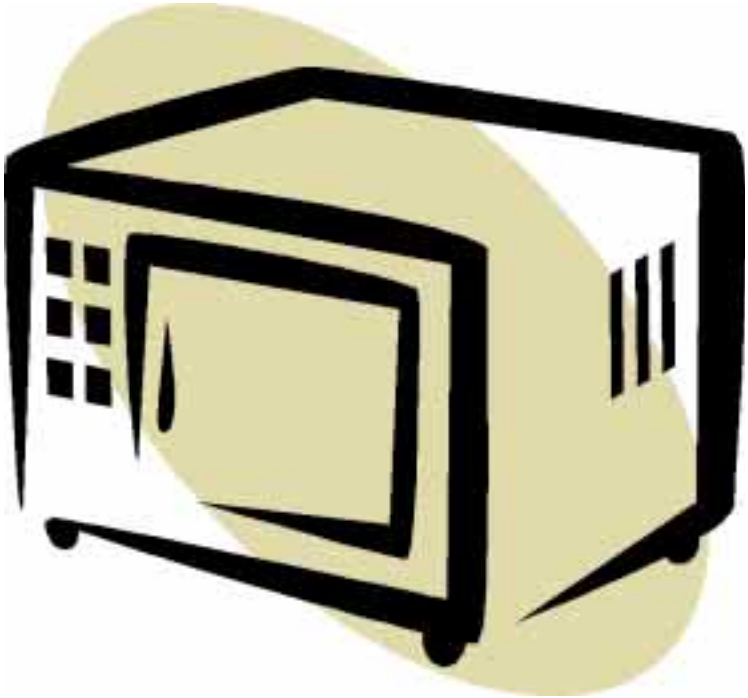
Chase an Answer - Questions & Answers

1. What is something that will suffer if we don't help reduce climate change? The earth.
2. What is something that we can use when we are cooking that uses less energy than the stove? A microwave.
3. What is something that we use to light our houses that saves energy? A fluorescent light bulb.
4. What is something that wastes energy if we leave it on when we are not using it? A computer monitor.
5. What is a way of getting to school that uses less energy than a car? A bicycle
6. What is something that we can put on so we can turn down the heat in our homes in the winter? A sweater.

Chase an Answer - Answer Descriptions & Images

There are many common household items that can be used to save energy. Below are the answers and brief explanations for this game.

1. Because of climate change important things on earth such as weather patterns, temperature, the habitat of animals and plants are changing.
2. A microwave uses 50% less energy than most conventional ovens.
3. A fluorescent light bulb uses 1/3 to 1/4 of the energy of a regular bulb.
4. A computer monitor is the part of the computer that consumes the most energy.
5. A bicycle uses no energy except human energy to move it.
6. A sweater will help keep us warm in the winter so we can reduce the temperature of our homes to save energy.



Chase an Answer - Answer Descriptions & Images

Climate Change Cootie Catchers Template

Adapted from *Trash and Climate Change*. Environmental Protection Agency, Solid Waste and Emergency Response.

Climate Change Cootie Catchers Folding Instructions

NOTE: *Make all folds neatly and squarely;*

1. Carefully cut along the solid lines to make a square.

2. With the picture of the world facing upward, fold the paper neatly in half and then in half again.

3. Undo the folds and flatten out the paper. Turn the paper over, with the world facing downwards, and fold in each corner so the four points meet in the centre.

4. Flip the paper over. Again, fold in each corner so that the four points meet in the centre.

5. Fold the square in half, making a rectangle, with the open flaps facing down. The writing should be right-side up.

6. Slide both index fingers and thumbs under each of the four outer flaps.

7. Pinching your fingers together, push the top corners of the flaps toward the centre. Poke down in the centre to help form the shape.