



CUB MEETING SCHEDULE : Week 2

Theme: Saving Energy

Date:

<i>Time</i>	<i>Activity</i>	<i>Program Details</i>	<i>Leader Responsible</i>
10 mins	Gathering Activity		
	Chase An Answer		
5 mins	Opening Ceremony		
35 mins	Theme Activity Build a Solar Cooker		
10 mins	Game Energy Charades		
15 mins	Theme Activity A Watched Pot Never Boils		
5 mins	Theme Activity Energy Find a Word		
10 mins.	Theme Activity Climate Change House		
10 mins.	Six Meeting		
5 mins	Spiritual Fellowship		
5 mins	Closing Ceremony		
15 mins	Leader Discussion Time		

Meeting Notes:



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/](http://.../natural%20gas/) [.../coal.](http://.../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.



THEME ACTIVITY

Build a Solar Cooker

Objective:

To understand the potential of using solar energy.

Background Information:

Solar cookers have been around since the 1700s. They make use of the sun's energy by redirecting the sunlight to concentrate on an area and then converting it to solar radiation. Large sophisticated solar cookers can get up to 500 degrees F. The three basic types of solar ovens are box cookers (good for cooking large quantities), panel cookers (panels concentrate sunlight on a pot inside a plastic bag or glass bowl) and parabolic cookers (concave disks focus light onto the bottom of a pot). Our version is an adapted parabolic. There are several plans available for a pizza box stove in the links below that are easy to make.

More detailed versions

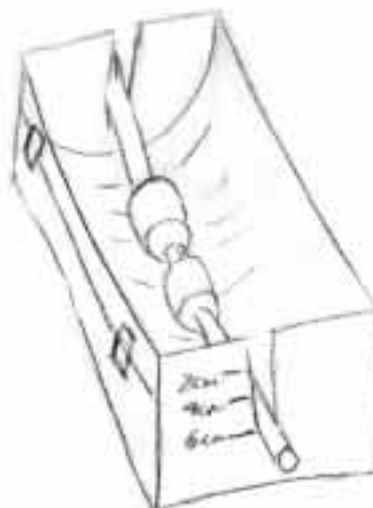
http://www.adeca.alabama.gov/content/ste/pdfs/energy_ed_pdfs/K-3pgs17-18.pdf

http://www.re-energy.ca/t-i_solarheatbuild-1.shtml

<http://solarcooking.org/plans.htm>

Equipment:

- Scissors
- Tape
- Empty shoe box without lid (one per Cub)
- File folder - letter size (one per Cub)
- Straws (two per Cub)
- Aluminum foil (to cover folder and sides of the shoe boxes)
- Marshmallows
- Diagram.



Instructions:

- Cut a slit in the ends of the box in the middle about one cm wide and six cm deep (leaders may need to help with this).
- Tear or cut the file folder in half along the fold.
- Line the folder with aluminum foil with the shiny side showing. Try to make the surface as smooth as possible.
- Place the folder in the shoe box so that it curves into the shape of a tube cut in half lengthwise. Secure the file folder into the box with tape (see diagram).
- Push the end of one straw into the other.
- Dip a marshmallow in cocoa powder. Push two marshmallows (one with and one without cocoa powder) onto the straws so they are in the middle. Put the straws in the slits of the box.
- If it is sunny outside, put the cooker in a sunny spot and tilt it so that the focus of the sun is on the marshmallows. Leave the cooker for 10 minutes, then move it out of the sun and touch the marshmallows. Determine if they warmed up and which warmed up more. Enjoy the marshmallows.
- If it is not sunny outside, encourage the Cubs to take their cooker home and try to cook the marshmallows on the next sunny day, or take them on the next camping trip. Solar cookers can work in winter as well!

Source: "Build A Simple Solar Cooker". *Climate Change Toolkit: Teacher's Guide*. Saskatchewan Science Centre.



GAME

Energy Charades

Objective:

To recognize ways of saving energy.

Background Information:

The following is some background information on the actions.

Turn off a light when you leave the room

Turning off the lights saves electricity. Electricity that is produced with fossil fuels creates greenhouse gases which contribute to climate change.

Turn off the TV

See explanation for lights.

Take a shower

Water is often heated with gas or oil in a process that creates greenhouse gases. A quick shower will generally use less energy to heat the water than a bath. Some people use electricity which relates to the explanation for lights.

Take the city bus

City buses use less gas per person to move around on average than a private car. The combustion of gas creates greenhouse gases which contribute to climate change.

Ride a bicycle

Bicycling is an active form of transportation which uses only our human energy and no fossil fuels and therefore does not contribute to climate change.

Use a skate board

See explanation for bicycle.

Turn off a computer

See explanation for lights.

Turn down the heat

In many places, heating for your home is produced by a gas or oil stove. In these cases the process of using these fuels creates greenhouse gases.

Put on a sweater

See explanation for "Turn down the heat".

Walk to the video rental store

See explanation for bicycle.

Use a microwave

Microwaves use less electricity to heat items than a conventional oven. See explanation for lighting.

Hang clothes to dry

Clothes dryers are one of the appliances that consume the most energy in the home.

Equipment:

Paper slips with the actions below written on them.

Instructions:

- The object is to guess the action that the Cub is doing.
- Write the following actions on pieces of paper and put them in a cup or hat.
- A Cub is handed the slip of paper and acts out the action while the others must guess what they are doing.
- After each action is guessed, discuss how this action helps save energy and can be good for reducing climate change.
- Once the action has been reviewed, choose another Cub to act out the next action.

Ideas

Turn off a light when you leave the room

Turn off the TV

Take a shower

Take the city bus

Ride a bicycle

Use a skate board

Turn off a computer

Turn down the heat

Put on a sweater

Walk to the video rental store

Use a microwave

Hang clothes to dry on a clothes line or drying rack.



THEME ACTIVITY

A Watched Pot Never Boils

Objective:

To demonstrate the energy saving aspects of covering a pot so that it boils faster and introduce the concepts of insulation.

Background Information:

Insulation is an important concept for energy savings. Properly insulating a house's attic and walls will mean that it takes less energy to heat or cool the house. A lid on a pot is like the insulation in an attic. A significant portion of a house's heat can be lost through poor insulation in the attic. A pot without a lid will generally use three times more energy to cook an item than a pot with a lid.

Equipment:

- Two identical camp stoves (See variation if you only have one stove)
- Two similar pots with at least three litre capacity each. One of the pots must have a lid.
- Matches
- Ten cups of water per pot (enough for half a cup of hot chocolate per Cub if you are making hot chocolate, otherwise use less)
- Hot chocolate powder - optional (enough for half a cup for each Cub)
- A mug for each Cub - optional
- A timer or watch with a second hand – if only using one stove.

Instructions:

- Ask the Cubs to guess whether the water will boil faster with the lid on or off. How much faster do they think it will boil?
- Put ten cups of water in each pot. Ensure that the water and pots are roughly the same temperature to begin with.
- Light the stoves.
- Put the two pots on the stoves – one with a lid on and the other without.
- While waiting for the water to boil, hand out the Climate Change Find A Word puzzle (see below) for the Cubs to work on.
- Note how much longer it takes the uncovered pot to boil. When both are boiling turn off the stoves. If desired, make hot chocolate for the pack.

Variation

- Put ten cups of water in an uncovered pot.
- Light the stove. Start the timer.
- Note how long it takes for the water to come to a full rolling boil.
- Turn off the stove. Empty the pot (or make hot chocolate) and let the pot cool to room temperature.
- Once the pot is cool fill it with another ten cups of water and put the lid on the pot. Light the stove again. Put the covered pot on the stove. After a few minutes, check every 30 seconds quickly to see if the water is boiling.
- When it has boiled, note the time and compare with the first time. Turn off the stove. Empty the pot (or make some more hot chocolate).



THEME ACTIVITY

Energy Find a Word

Background Information:

All of the words should have been mentioned in previous activities with the exception of composting (see Save Waste – Save Energy theme) and solar (see Renewable Energy theme).

Equipment:

- Photocopied Activity Sheet (see page 9)
- Pens or pencils.

Instructions:

Find the words listed on the sheet.

THEME ACTIVITY

Climate Change House

Objective:

To introduce the home component of the Energy Use Audit.

Background Information:

On average, half of the greenhouse gases that each Canadian produces comes from energy consumption in the home. The other half is from transportation. Energy can be saved at home both through behavioural changes (such as turning off the light) and purchasing or adapting equipment so that they are more energy efficient (such as compact fluorescent light bulbs).

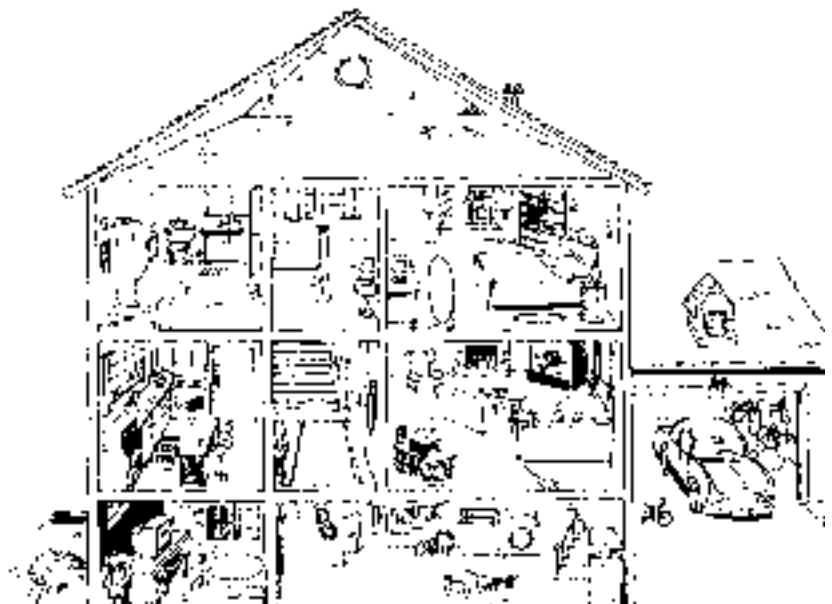
One of the requirements for the Energy Use Audit for Cubs is to investigate some ways they can reduce the amount of energy being used at home. The drawing for this activity will help them identify where they can find energy savings in their own homes.

Equipment:

A photocopy of the “Climate Change House” for each Cub (see page 10).

Instructions:

- As a pack review where energy is used in the house (TV, lights, furnace) and where energy can be saved (turn down temperature, turn off lights, etc.).
- Hand out the Climate Change House pictures. The Cubs colour in the items where energy can be (one colour) or where it is being saved (another colour) on the drawing.
- Discuss, while they are colouring, how they can save energy at their own homes and what might be different at their house from the picture.





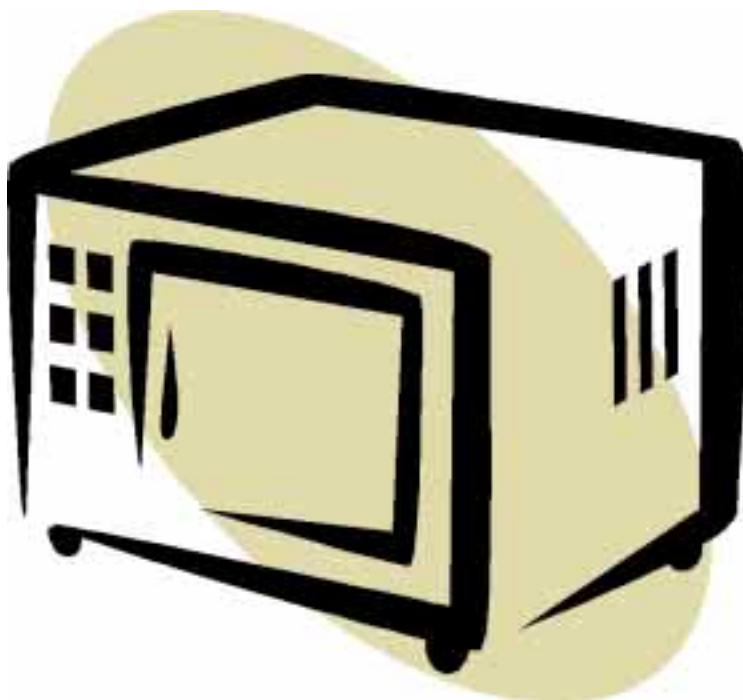
Chase an Answer - Questions & Answers

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





Energy Find a Word Search

Y G R E N E B Q T I N P W L U B
V Z F E M U G C S X J Y D H A T
I G O T T T A L V E L C Y C E R
Q U I E T S S E B Z O I X V L U
P W N R A L O S Z X O R A U M B
V E A H I N L P Y T P T W E N T
B C N G R Q I A M N R C V J L O
N Z H A E R N U S O A E K T E R
X T Y Q N O E I T R C L B I C W
S V I A P J L K E V R E S N O C

Find the following words

CARPOOL - GASOLINE - COMPOST - LIGHTS - CONSERVE
RECYCLE - ENERGY - SOLAR - ELECTRIC – SUN



Climate Change House

