



ENERGY

Energy gives us the ability to move, lift, warm or light something. We use energy in all of our daily activities at home, school, in offices and when we travel. The food we eat and water we drink are fuels that help our bodies create energy to run, jump, and think!

Energy sources for machines, appliances, cars, trains and airplanes, and heating our homes can come from wind, water, the sun, nuclear reactors and fossil fuels such as oil, gas and coal. Energy that is made from grains like corn and gas from animal waste are called bio-fuels. Bio-fuels are also called renewable energy sources because they can be grown again.

Fossil fuels have to be mined from inside the earth. Mining for coal and drilling for oil and gas often cause damage to the environment. To generate energy, fossil fuels need to be burned. This creates air pollution, which is not healthy for our bodies either! Energy that comes from wind, sun and water is called “clean energy” because they don’t pollute our environment. Unlike fossil fuels, the sun, wind and water can be used forever.

DO YOU KNOW HOW MANY TIMES YOU USE ENERGY IN A DAY? Let’s find out by making a clock chart!

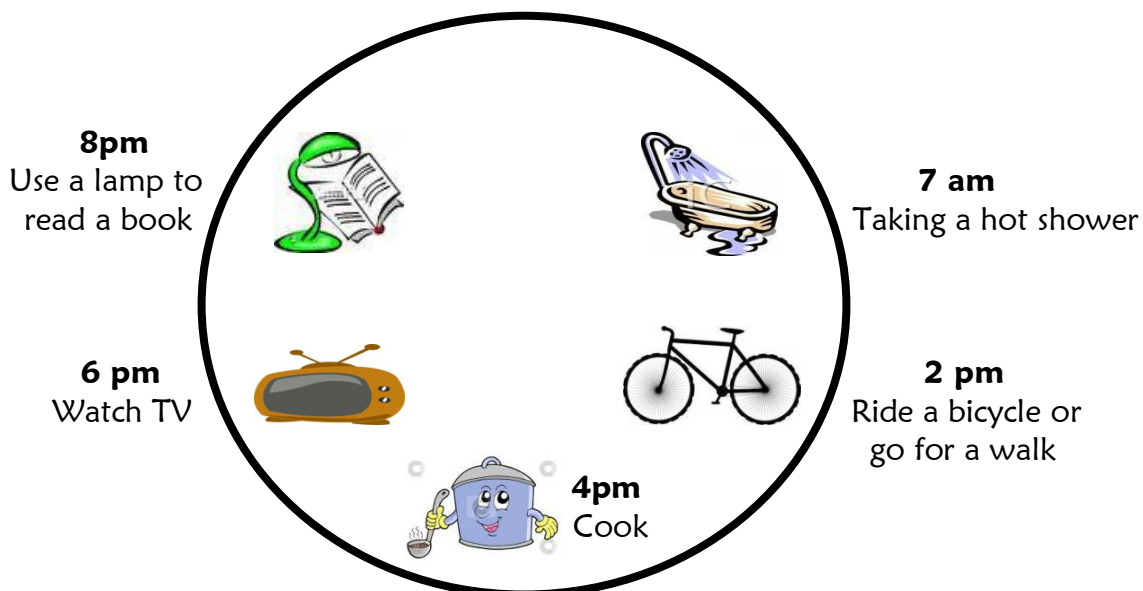
MATERIALS YOU WILL NEED:

- ★ Piece of paper
- ★ A pencil, pen, marker or crayon

INSTRUCTIONS:

- 1) Draw a big circle which will represent a clock and the 24 hours in a day.
- 2) Fill the clock with different drawings of activities you do at different times during the day.

Example of a Clock Chart



- ★ What kinds of energy do your activities use? Ask your friends, parents, and teachers to help you find out.
- ★ Also find out where the energy comes from for each activity.
- ★ What ways you can use less energy during your day?
- ★ Are there any activities you could do without using fossil fuels? Are there ways to use less electricity?
- ★ To see the impact your activities are having on the environment visit this m website: <http://calc.zerofootprint.net/youth/>

DO YOU KNOW HOW WIND ENERGY WORKS?

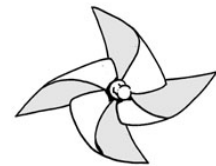
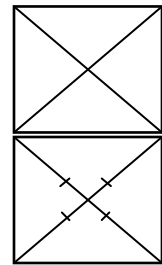
Let's make a pin wheel and see how wind helps creates energy!

MATERIALS YOU WILL NEED:

- ★ Square sheet of paper (can be colored or decorated)
- ★ Long, thin twig, stick, straw or pencil with an eraser on top
- ★ Scissors
- ★ Pencil or Pen
- ★ A push pin or straight pin

INSTRUCTIONS:

- 1) Take a square sheet of paper and fold it into a triangle. Next, fold that triangle into a smaller triangle. Unfold it back into a square and you will see two diagonal lines formed.
- 2) Make four small marks with a pen or pencil along each line about 1/3 of the way from the center.
- 3) Cut along the folded lines, but stop at the marks you made.
- 4) Bring every other point into the center and stick a pin through all the four points in the center.
- 5) Stick the back end of the pin into a stick, twig or on the eraser of the pencil.



Your pinwheel will end up looking like this: →

Spend some time playing and running with your pin wheel. Depending on how much wind or air there is (from a fan or your breath), you will notice that the pin wheel turns slower or faster.



How does a windmill work?

Your pin wheels turns in the same way a windmill turns. The wind makes the blades turn, which then creates energy that can be used to move a water pump or turn a turbine to generate electricity.

Want to learn more?

- Does your community use wind energy? If so, what is it used for; if not, where do you think the best place to put a wind pump would be? Does your home or school or community use any other forms of renewable energy (*such as solar from the sun or hydro from water*)?