

Using the Energy

Background:

1. What is the original source of all energy used by living organisms?

The Sun

2. Which living organisms are able to capture or gather this energy?

Plants

3. What is the process that uses this energy to put it to good use?

Photosynthesis

4. What is the equation that shows us how this original source of energy is used?
Sunlight + carbon dioxide + water = sugars + oxygen

5. What is the result of all of this use of the original source of energy?
The plants use the sugar to construct different chemicals which help them grow their roots, stems, leaves, flowers and seeds.

6. How is this energy passed through the food web?
By one living organism eating another living organism.

7. What unit do we use to measure this energy?
Calories

8. What is the difference between a chemistry calorie and a food calorie?
one food calorie equals 1000 chemistry calories.
9. How much heat would a food calorie provide?
enough heat to raise one liter of water 1 degree C
10. How many food calories does the average human consume a day?
about 2000 food calories
11. How much heat would this amount of energy provide?
enough to heat a hot tub about 2 degrees C
12. What is the definition of energy?
The ability to do work.
There are many different forms of energy - electrical, heat, light, movement, chemical for example.

13. In what ways do plants and animals use energy? Brainstorm a list with your group. (1 point)

Procedure:

1. Sort the **31** energy use strips into the four categories. List them in the space below.
(1/3 point per strip of paper = 10 and 1/3 points total)

Category #1 **Movement**

Category #2 **Growth and Reproduction**

Category #3 **Maintenance**

Category #4 **Waste**

2. In which category is food produced? (1/2 point)