



ENERGY

Domain: 4.6

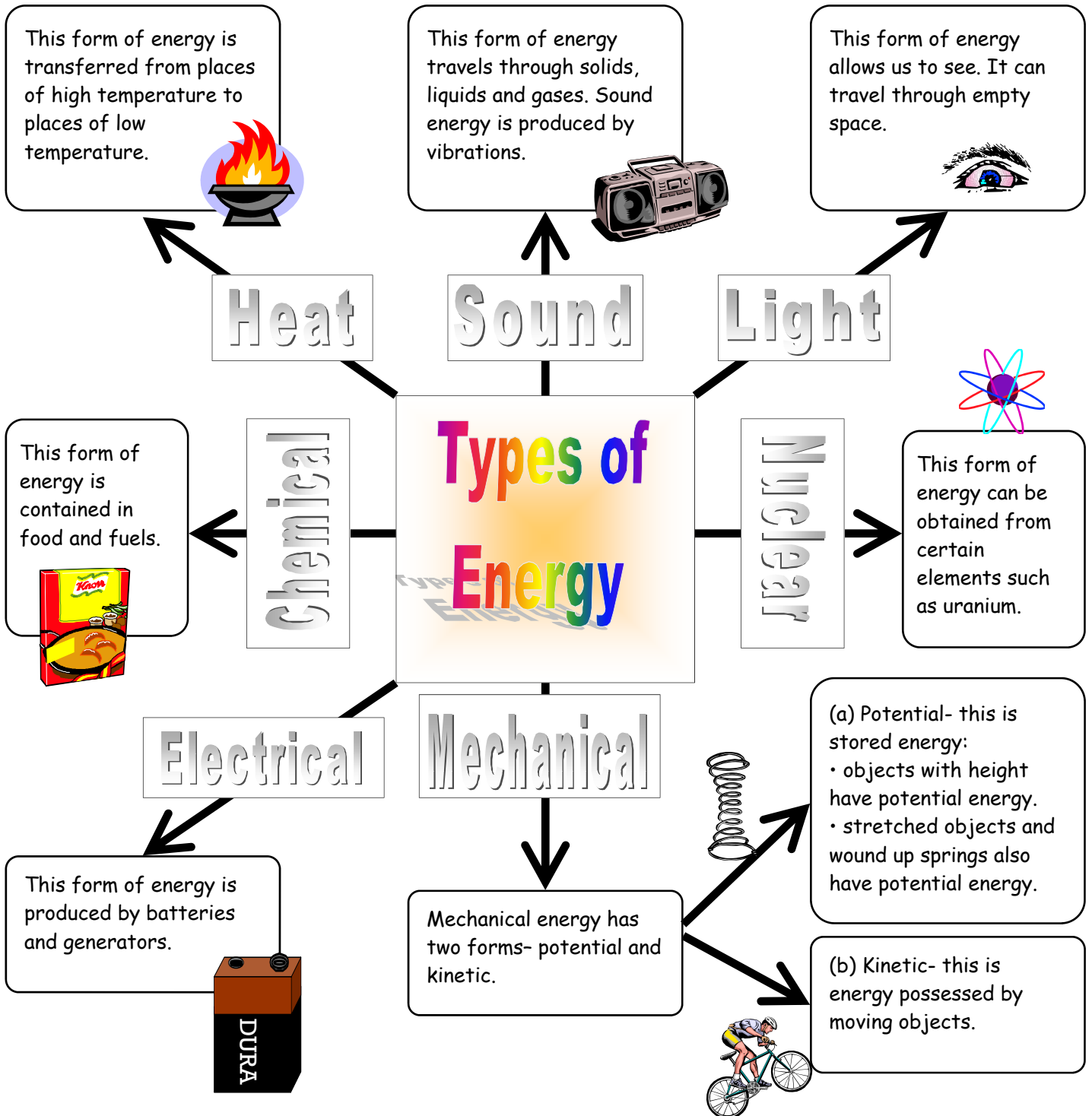
identifies and describes energy changes and the action of forces in common situations

What is Energy?

Energy is the ability to do **work**. If an object has energy it can do work.

Types of Energy

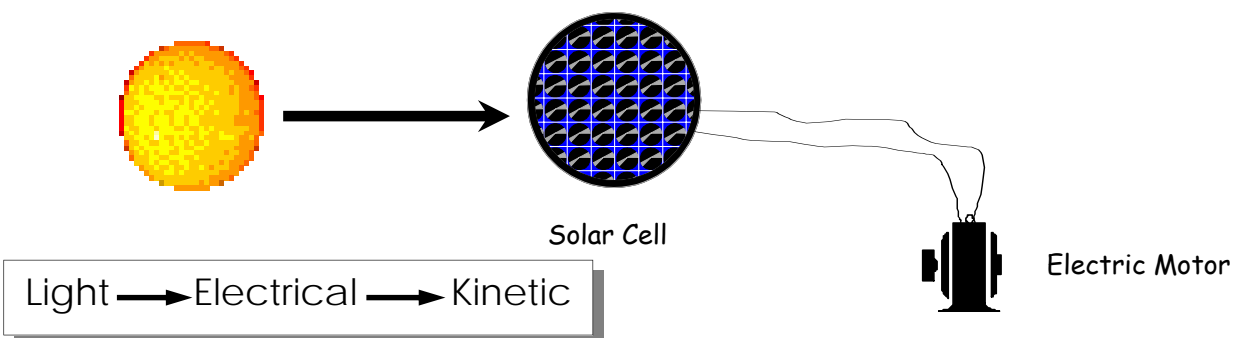
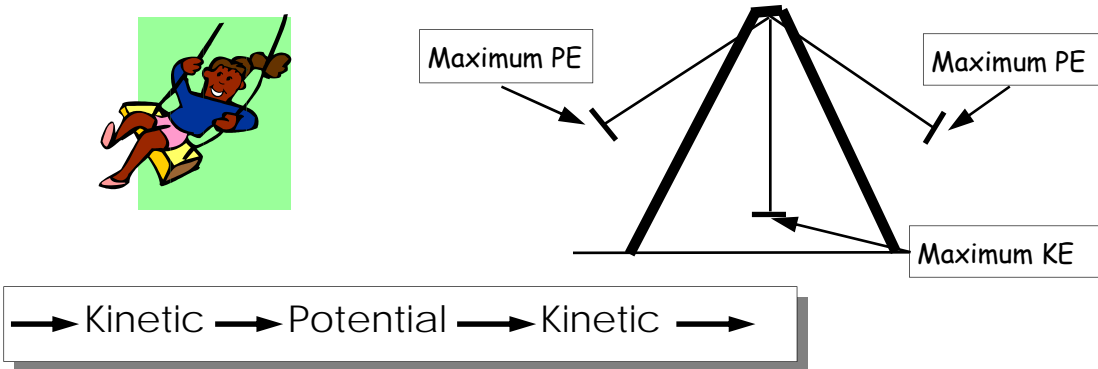
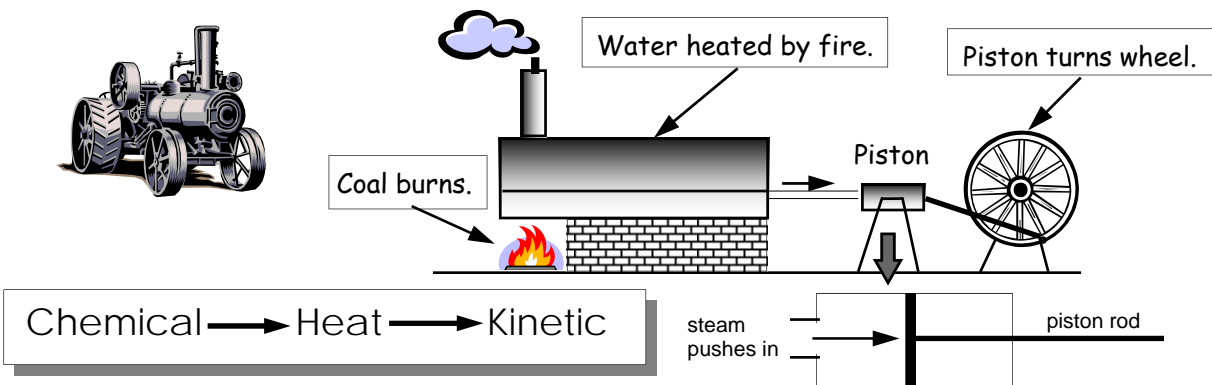
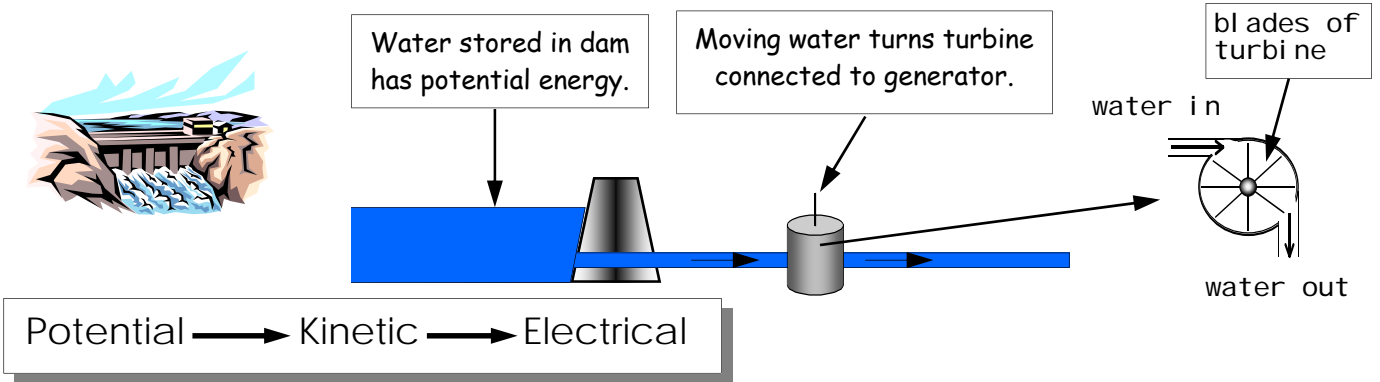
The main types of energy are listed below:





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Using Energy (some examples showing main energy changes only)





Questions:

1. What is energy?
2. What are the seven main types of energy?
3. Which types of energy are examples of:
 - (a) energy in action; (b) stored energy?
4. What type of energy do the following possess?:
 - (a) a ball rolling along the ground; (b) a book sitting on a desk; (c) boiling water; (d) a chocolate bar;
 - (e) the wound-up spring in a clock; (f) water at the top of a waterfall; (g) water at the bottom of a waterfall;
 - (h) coal; (i) dynamite; (j) uranium atoms.
5. What does the Law of Constant Energy say?
6. Give the energy changes which occur in the following processes:
 - (a) a plant uses sunlight to make food; (b) burning wood is used to boil a billy of tea;
 - (c) a wound-up spring moves a toy car;
 - (d) a ball is dropped off a balcony, it bounces back up to its original position;
 - (e) an electric toaster cooking toast; (f) using gas to cook vegetables;
 - (g) using an electric fan to cool down a room; (h) making noise by hitting a ruler on to a desk;
7. What are the energy changes for:
 - (a) hydro-electric power station; (b) a steam engine; (c) a child's swing;
 - (d) a solar cell powering an electric motor.
8. Why does it hurt more to catch a fast-moving ball than a slow-moving one?
9. A ball is dropped into a bucket of sand from a height of 1 metre. The same ball is dropped from a height of 2 metres into the bucket of sand.
 - (a) Which ball will fall into the sand the greatest depth?; (b) Explain why you chose your answer.
10. Complete the following table for energy changes:

taking a picture using a camera	light	changes to	?
microphone	?	changes to	electrical
lightning producing thunder	?	changes to	sound
rubbing your hands together to warm them up	?	changes to	heat