CONSERVATION OF ENERGY

PALMS

TEACHER'S REMINDER

Remember to have the following tools ready before starting your lesson:

1. YoTeach chatroom
2. Realtimeboard
3. Badaboom quiz

(see lesson plan for details)

CONSERVATION OF ENERGY

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LESSON OBJECTIVES

- ☐ Recognize and demonstrate that energy can be converted between different forms

- ☐ Recognize that energy is conserved following the law of the conservation of energy

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WHAT IS ENERGY?

REVIEW: ENERGY

- Energy is the capacity for doing work

- Work is done whenever a force moves something

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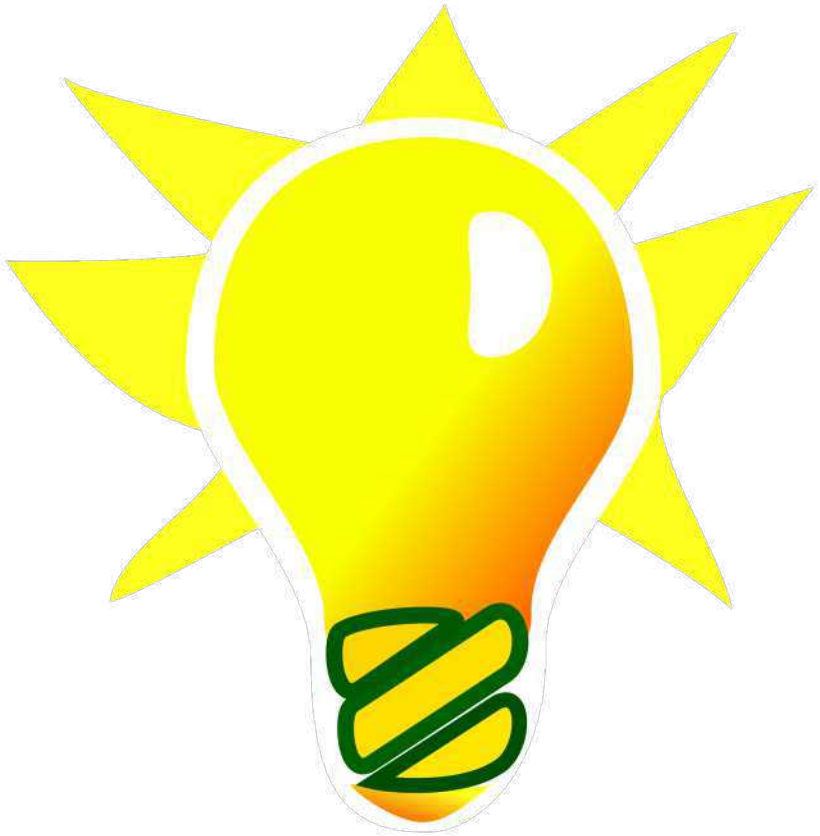
REVIEW: ENERGY

- Energy allows us to move everyday, for plants to grow, and even for a fire to burn.

- Energy is measured in Joules (J) or kilocalories (kcal)



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CLASS ACTIVITY: YOTEACH!

- Q1: Name a form of energy with an example.

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ENERGY FORMS

CONSERVATION OF ENERGY

CONSERVATION OF ENERGY

- The law of the conservation of energy states:

Energy can neither be created nor destroyed – it can only be transformed to other forms.

- All forms of energy can be converted into other forms. This is called **energy conversion**.

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ENERGY CONVERSION

- We see and use energy conversions everyday!
- The sun's energy through solar cells can be converted directly into electricity.
- Green plants convert the sun's energy (electromagnetic) into starches and sugars (chemical energy).

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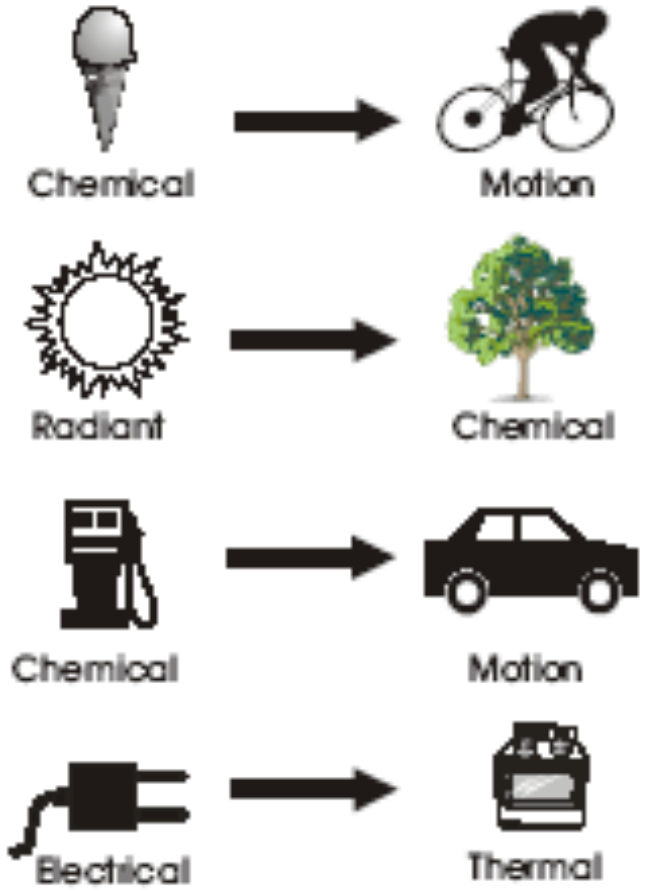
PRACTICAL APPLICATIONS

- Chemical energy in gasoline converts to mechanical energy which moves the car
- A battery converts stored chemical energy to electrical energy
- Dams convert the kinetic energy of falling water into electrical energy



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EXAMPLE: CARS

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EXAMPLE: CARS

Chemical energy → Heat energy → Mechanical energy

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EXAMPLE: RUBBING HANDS TOGETHER

EXAMPLE: RUBBING HANDS TOGETHER

Kinetic energy → Heat energy

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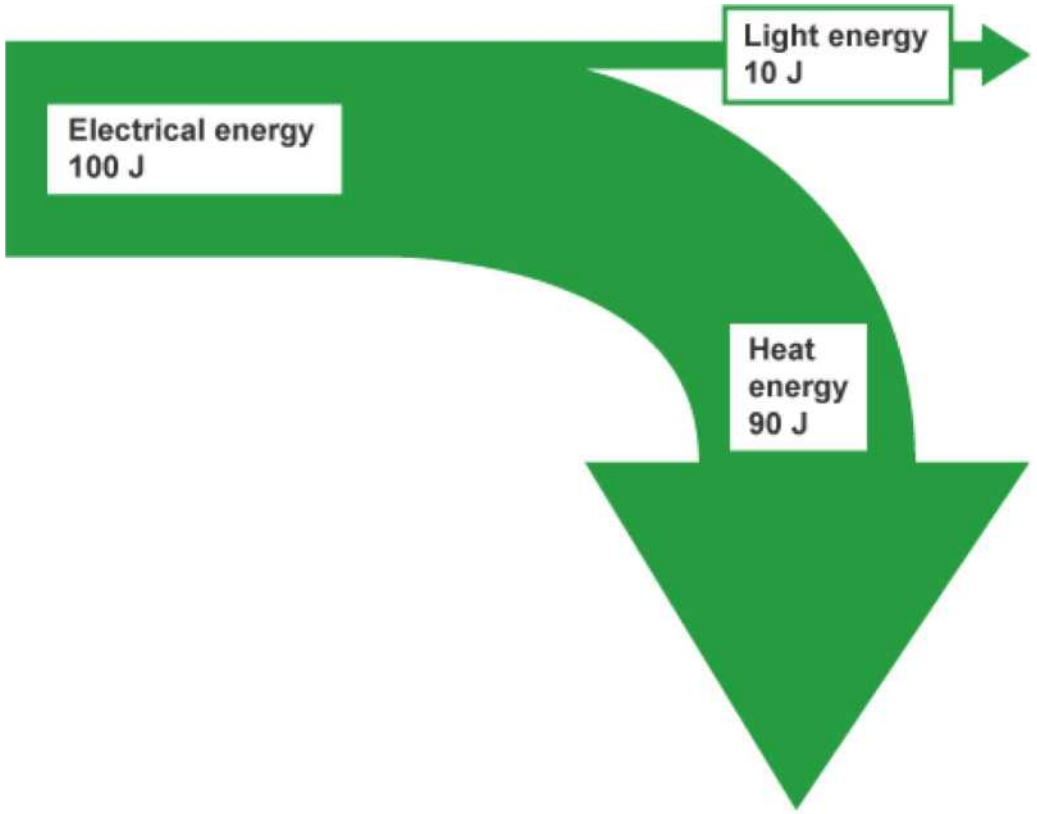
ENERGY 'LOSS'

- Even though energy cannot be destroyed, there can be energy loss.
- Often energy is converted into multiple different forms, some of which are not 'useful'.

- E.g. In lighting a lamp, a lot of heat energy is lost to the surroundings.

SANKEY DIAGRAMS

- We can use Sankey diagrams to show how energy is dispersed.
- The width of the arrow reflect how much energy is converted to each form.
- Note we always start and end with the same amount of energy!



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CLASS ACTIVITY: REALTIMEBOARD

- Discuss the energy conversion processes of different machines/tools

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CLASS ACTIVITY: BADABOOM

- Energy Quiz

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CLASS ACTIVITY: YOTEACH!

- Reflection: What have you learnt today?

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