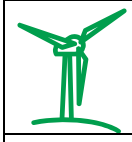
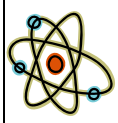
Lesson 6: Here today, gone tomorrow - renewable and non-renewable energy

Student worksheet

If renewable energy is energy that can be replaced, what is non-renewable energy? Of course…non-renewable energy is energy that cannot be replaced. For example: gas, coal and oil come from deep within the earth and may run out someday. Indicate whether you think the following energy sources are renewable or non-renewable. Place an X in the box that corresponds to your choice. The first one has been completed as an example.

Energy Source	Renewable	Non-renewable
 **Natural Gas**		**X**
 **Solar**		
 **Hydro-electricity**		
 **Wind**		
 **Coal**		
 **Biomass (energy from plants)**		
 **Oil**		
 **Uranium (used in nuclear reactors)**		

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Teacher instructions

Introducing the activity

- Begin this activity by asking students why they think they need to eat. *(Food gives them energy and energy keeps them alive.)* Hold up an apple and ask: a) is an apple is a source of energy, and b) is an apple a renewable source of energy*?* In order to answer this question, students will need to understand the difference between renewable and non-renewable energy. Discuss the following: **Many sources of energy including coal and oil can be replaced…it just takes millions of years. Coal is the ancient remains of land-plants that were buried millions of years ago and exposed to heat and pressure. Since it takes so long, coal and oil are considered to be non-renewable. An apple, on the other hand, does not take millions of years to be replaced. An apple, then, is considered renewable.**

- Ask students the following:
  - Is the energy produced from corn (ethanol) renewable? *(yes)*
  - Is the energy produced by wind renewable? *(yes)*
  - How long does it take new water to replace water falling in a dam? *(not long!)*
  - Is the energy that is produced from falling water (hydro-electricity) considered renewable? (yes)

Ideas for teaching the worksheet

- Review the introduction paragraph with the class and have students complete the worksheet, taking their best guess at whether each source if energy listed is renewable or non-renewable.

- Take up the answers together. The answers are listed below.

- Ask if anyone knows why corn has become such a controversial type of energy even though it is renewable? *(More farmers are growing corn for energy than for food – is this okay given that there is a global food crisis?)*

Answer Key
natural gas: non-renewable / solar: renewable / hydro: renewable / wind: renewable / coal: non-renewable / biomass: renewable / oil: non-renewable / uranium: non-renewable