Subject: Science

Level: Standard 3

Strand: Conservation and Sustainability

Topic: Uses of solar energy

Key Points:

- There are two sources of energy, renewable and non- renewable

NON-RENEWABLE forms of energy	**RENEWABLE forms of energy**
Formed millions of years ago	Alternate forms of energy
Mostly fossil fuels such as coal, petroleum and natural gas	Types of renewable energy sources are solar energy, wind power, hydroelectric energy, biomass energy such as firewood, geothermal energy
Produces a lot of pollution when burned	Less pollution is produced by renewable energy.
All the fossil fuels will be used as it is not possible to make more	Alternate forms of energy can be replenished.

A commonly used renewable energy in the tropics is solar energy

- Solar energy comes from sunlight that reaches earth
- This means solar energy has been used by people for hundreds of years to cook food, keep warm, and to dry clothes
- Today, solar energy is used to make electricity using solar cells.
- Solar cells turn light from the sun into electricity
- Solar cells are put together to make solar panels.
- The amount of sunlight varies depending on weather conditions and time of day.

Activity

1. (i) Examine the picture below. In Table 1, list 3 examples of each type of energy.



Natural Gas



Oil

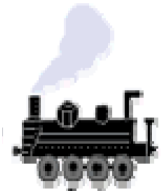


Sunlight

Water







Coal

TABLE 1: Types of Energy

Renewable Energy	Non- Renewable Energy

(ii) What are the two main concerns about the use of non-renewable energy.

_____

_____

(iii) Give two benefits of using renewable energy instead of non-renewable energy

_____

_____

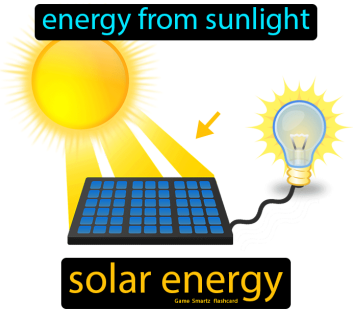
2. The picture below shows solar energy.



Why is solar energy commonly used in the tropics?

_____

3. Examine the picture below.

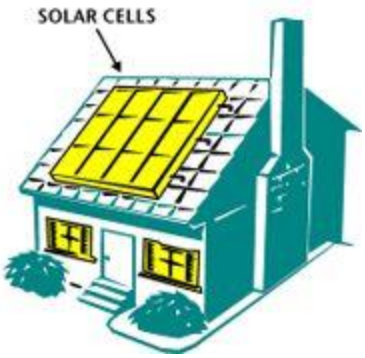


(i) What is solar energy for in households?

_____

Jimmy's house is shown below.





(ii) List 5 devices in Jimmy's household that can use the energy generated from solar cells

_____

_____

_____

_____

_____

Assessment

1. The pictures below shows 3 items that use solar powered batteries.

Toys	Watch	Phone Chrgers
		

Research and list 3 other uses of solar energy

i. _____

ii. _____

iii. _____

2. Choose the correct answer in the brackets:

Solar energy is a (renewable, non-renewable) source of energy. It causes (more pollution, less pollution). It is (readily available, not always available) in the tropics.

Answer Key

1. (i) TABLE 1: Types of Energy

Renewable Energy	Non- Renewable Energy
solar energy **wind energy** **hydroelectric energy**	**coal** **petroleum (oil)** **natural gas**

(ii) What are the two main concerns about the use of non-renewable energy.

- They produce a lot of pollution when burned.
- Eventually all the non-renewable energy (fossil fuels) will be used as it is not possible make more.

(iii) Give two benefits of using renewable energy instead of non-renewable energy

- Less pollution is produced by renewable energy.
- Renewable energy sources can be replenished.

2. Why is solar energy commonly used in the tropics?

Solar energy comes from sunlight that reaches earth. The tropics get an abundant supply.

3**.** i) What is solar energy used to produce for households?

Electricity

(ii). Anything powered by electricity eg. refrigerator, washing machines, clothes dryer, ovens, microwave, television, electric bulbs to provide light.

(Any 5 or other appropriate answers)

ASSESSMENT

1. List of 3 other uses of solar energy: (any 3 or other appropriate answer)

   Solar street lights, solar traffic lights, solar flash lights, solar calculator, solar cooker

2. Solar energy is a (renewable, ~~non-renewable~~) source of energy. It causes (~~more pollution,~~ less pollution). It is (readily available, ~~not always available)~~ in the tropics.

Acknowledgement

Activity with Picture	Reference
1. (i). Types of energy	https://www.pinterest.at/pin/294493263130641365/ Cropped from Pin on Renewable Energy pinterest.at
2. Solar energy	https://www.switchedonkids.com.au/facts-solar-energy/
3 (i) Solar energy	https://gamesmartz.com/definitions?definition=5210&solar-energy
3 (ii). Solar cell on house	https://www.ducksters.com/science/environment/solar_power.php
Assessment 1 (toy vehicles)	https://getsolarpowered.net/top-5-solar-toys-for-kids-teaching-young-ones-about-solar-energy/
Assessment 1 (watches)	https://www.pinterest.com/pin/762445411888742263/.
Assessment 1 (phone charger)	https://www.coolest-gadgets.com/charge-devices-sun-shines/.
Hydroelectricity	https://4570book.info/amazing-cliparts/hydro-energy-clipart-free.htm