

Sun Alarm Worksheet – Module 5

Names: _____

RENEWABLE ENERGY

Imagine you live in a remote village without mains electricity. Suggest some things you could use a solar PV panel for.

ELECTRICITY

Name a material which conducts electricity.

Name some materials which do not conduct electricity (insulators).

Does the LED work if you connect it either way round?

How about the buzzer?

When connecting the LED to the solar panel, which leg of the LED should be connected to the positive terminal of the solar panel?	
When connecting the buzzer to the solar panel, should the red or the black wire of the buzzer be connected to the positive terminal of the solar panel?	
How can you adjust the volume of sound from the buzzer?	
STEM	
What do the initials STEM stand for.	
EXTENSION QUESTION	
Describe the energy conversions taking place in the sun alarm.	

Suggested Answers

RENEWABLE ENERGY	
Imagine you live in a remote village without mains electricity. Suggest some things you could use a solar PV panel for.	<i>You could use it for lighting, refrigerating food, pumping drinking water, irrigating crops, powering mobile phone masts, TVs, radios...</i>
ELECTRICITY	
Name a material which conducts electricity	<i>Metal conducts electricity. Many liquids also conduct electricity.</i>
Name some materials which do not conduct electricity (insulators)	<i>Plastic, rubber, dry wood and lots of other materials do not conduct electricity.</i>
Does the LED work if you connect it either way round?	<i>No, the LED only works if connected one way round.</i>
How about the buzzer?	<i>The buzzer only works if connected one way round.</i>
When connecting the LED to the solar panel, which leg of the LED should be connected to the positive terminal of the solar panel?	<i>The long leg of the LED should be connected to the positive terminal of the solar panel.</i>
When connecting the buzzer to the solar panel, should the red or the black wire of the buzzer be connected to the positive terminal of the solar panel?	<i>The red wire of the buzzer should be connected to the positive terminal of the solar panel.</i>
How can you adjust the volume of sound from the buzzer?	<i>You can partially cover the solar panel with your hand or turn it away from the sun.</i>
STEM	
What do the initials STEM stand for?	<i>STEM stands for science, technology, engineering and maths.</i>
EXTENSION QUESTION	
Describe the energy conversions taking place in the sun alarm	<i>Solar energy from the sun is converted to electrical energy by the solar PV panel. This travels round the circuit and is converted to sound energy by the buzzer and light energy by the LED. A small amount of energy is converted to heat due to resistance in the circuit.</i>