

## Grade 8 Natural Science Worksheet

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### Renewable energy sources

#### Part One: Understand renewable energy

Write a paragraph to show what you understand by renewable energy. Include a list of as many renewable sources as possible. Illustrate your paragraph with drawings or pictures you have cut out of magazines.

[20 marks]

#### Part Two: Make greater use of renewable energy sources

1. Why don't we make greater use of renewable energy sources? Discuss this question with your group and then make self-reporting notes on the discussion.

[10 marks]

2. What are some of the disadvantages of using renewable energy sources?

Tabulate your answer.

[10 marks]

#### Part Three: Be more energy efficient

1. Make a list of the things you could do to help the environment with your energy use.

[10 marks]

2. What are some of the things you could do to make your home more energy efficient?

Write a letter to your parents telling them what you have learned about renewable energy sources and how you think your home could be made more energy efficient.

[15 marks]

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### Suggested Solutions

Question number	Possible marks	Solution
1	20	<p>Learner answers will differ, but this is a guideline that can be used in marking:</p> <p>When an energy source will not run out, it is called 'renewable'. ✓ We can replace the source of energy on an ongoing basis. ✓ Renewable energy is energy that will not run out if it is managed properly. ✓ It can be replenished in a fairly short time. ✓ There is not much pollution from renewable energy. ✓ Solar, hydro-electric, wave, biofuels, nuclear, tidal, geothermal and wind energy are all examples of renewable sources of energy. ✓✓✓✓✓</p> <p>Renewable energy sources are regarded as 'clean' sources of energy. They do not produce the same amount of pollution that non-renewable energy sources such as coal and oil produce. ✓</p> <p>Renewable energy sources therefore have many benefits. They are safer to the environment and they will not run out. ✓</p> <p>Award up to 5 marks for paragraph structure and style. Award up to 5 marks for pictures/illustrations.</p>
2.1	10	<p>It tends to be expensive ✓✓ to set up schemes to use the renewable sources of energy to make electricity. Coal and oil are cheaper energy sources. ✓✓ There are other factors that make it difficult to use renewable energy sources. How much sun, ✓ moving water ✓ and wind ✓ available in a certain place at a certain time, is something that makes using renewable energy rather limited. ✓ When we look at the existing technology, most vehicles work only with petrol or diesel. ✓ Only a few models of cars have been developed to work with alternate energy and because this technology is so new, there are not very many around. ✓ The idea of using renewable instead of non-renewable energy sources is a new one for some countries and not even thought of by others. ✓</p>
2.2	10	<p>Nuclear – can be dangerous; ✓ difficult to dispose of wastes. ✓</p> <p>Solar – is expensive ✓ and not constant. ✓</p> <p>Wave – is difficult to catch the energy of the waves ✓, rough seas are needed. ✓</p> <p>Wind – not constant, ✓ noisy, spoils the landscape. ✓</p> <p>Hydro-electric – needs a large amount of moving water, ✓ risk of floods, dams are expensive to build. ✓</p>

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		Set into a table.
<b>3.1</b>	10	<p>Learner answers may differ:</p> <p>Non-renewable energy sources are those that cause the most harm to the environment and we must use less of them if we want to help protect the environment. Some of the things you can do are:</p> <ul style="list-style-type: none"> <li>• Use public transport or form carpools so that less cars are driven and there will be less petrol used and less pollution. ✓✓</li> <li>• Use electrical energy only when needed by switching off lights when possible, only boiling enough water in a kettle for what we need. ✓✓</li> <li>• Recycle things like glass, aluminium cans and paper. ✓✓</li> <li>• Use energy efficient light bulbs and appliances. ✓✓</li> <li>• Buy recycled products. ✓✓</li> <li>• Use renewable energy sources wherever you can because they cause less pollution. ✓✓</li> </ul>
<b>3.2</b>	15	<p>Some possible suggestions: Use insulation in the roof, make sure doors and windows fit tightly into their frames so that there are no draughts, close windows to keep the heat in, use things to cover the floor like carpets or rugs, doors should close properly, use energy saving light bulbs, switch off appliances when not in use, etc.</p> <p>Letter: Award up to 5 marks for format and style.</p>