

The value of our electricity

Intermediate Phase (Grade 5)

Learner activity sheet

Natural Science and Technology





How to save energy



Dear Learner,

Electricity is produced from fuel such as coal, water, diesel and uranium which are limited resources. Building new power stations to increase the supply of electricity is costly, time consuming and is only one of the possible solutions towards producing more electricity. Increased use of electricity means we use up our limited natural resources and means we pollute more.

An immediate solution is to change the way in which we use electricity – that is using electricity wisely without wasting.

Eskom kindly asks you, the learner, to please put into practice different ways of using electricity wisely. You are going to learn a lot in energy education. Some of the things you will learn are:

- the changes in technology (use energy-saving lights instead of the traditional old lights),
- how to use technology more wisely (using the switch to switch off remote controlled appliances instead of the remote),
- other energy-wise saving tips,
- and how using energy wisely helps to care for our environment – our earth.

Do not worry, the energy education will be part of your school work. Be alert and become an example of how to use energy wisely. Share all that you learn with your friends, family and community. Remember to be energy-wise wherever you are – at home, at school and in other places.

Thank you for taking care of our earth.

Activity 1: Renewable and non-renewable resources



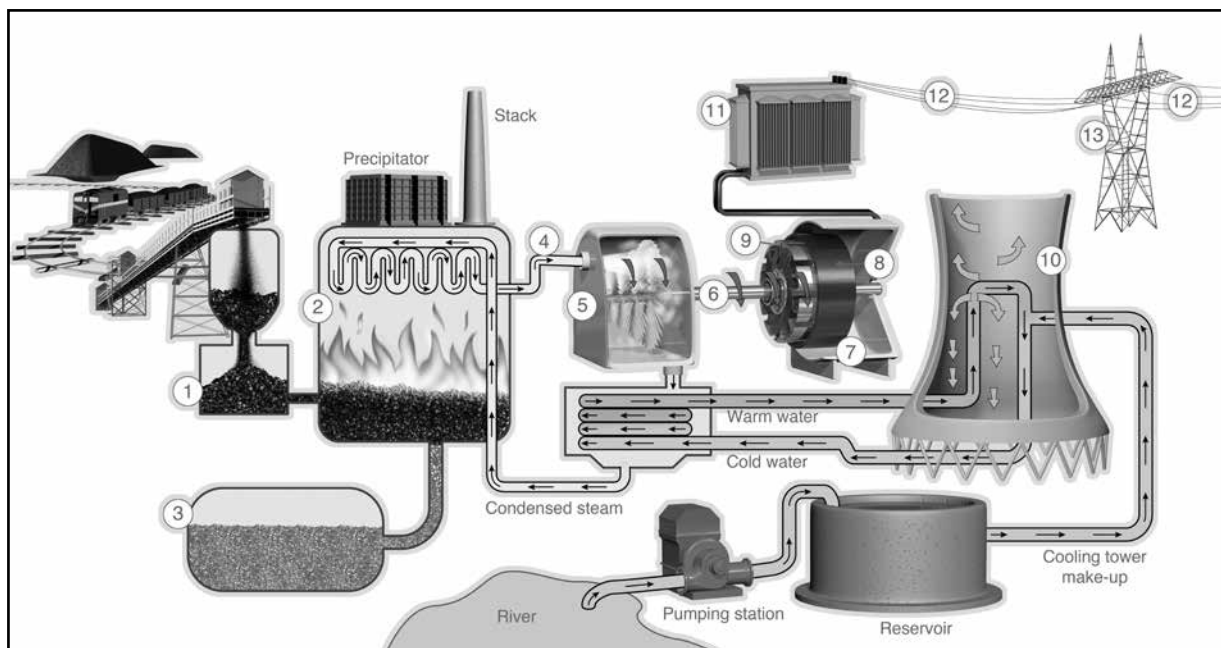
Read the information below and answer the questions.

Did you know?

Renewable resources are limitless – we can use these resources again e.g. energy from the sun and wind energy. Solar energy (energy from the sun) and wind energy can be used to generate (make) electricity.

Non-renewable resources are not limitless – these resources get used up e.g. coal (fossil fuel) and water. Fossil fuels can take millions of years to form. Fossil fuels like coal are burnt in a power station to turn huge machines to generate (make) electricity. In South Africa coal is used to generate (make) most of the electricity.

The picture below in a very simple way shows how coal is used to generate (make) electricity.





1. Is coal a renewable or non-renewable resource? Give a reason.

2. Which resource is used in the process of generating (making) most of the electricity in South Africa?

3. Which two non-renewable resources shown in the diagram are used to generate (make) electricity?

4. Why is water a non-renewable resource although there is so much water in the sea?

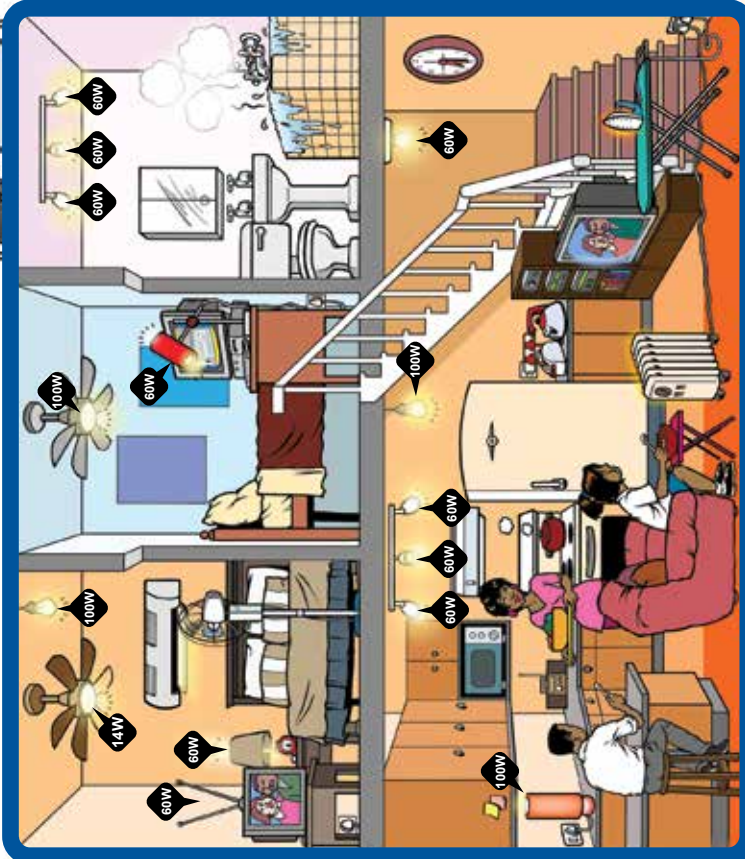
5. Why is it a disadvantage to use coal as a resource in the process of generating (making) electricity?

6. Write the following in the correct column: wind/wood/water/coal/natural gas/oil/solar energy/nuclear energy/steam

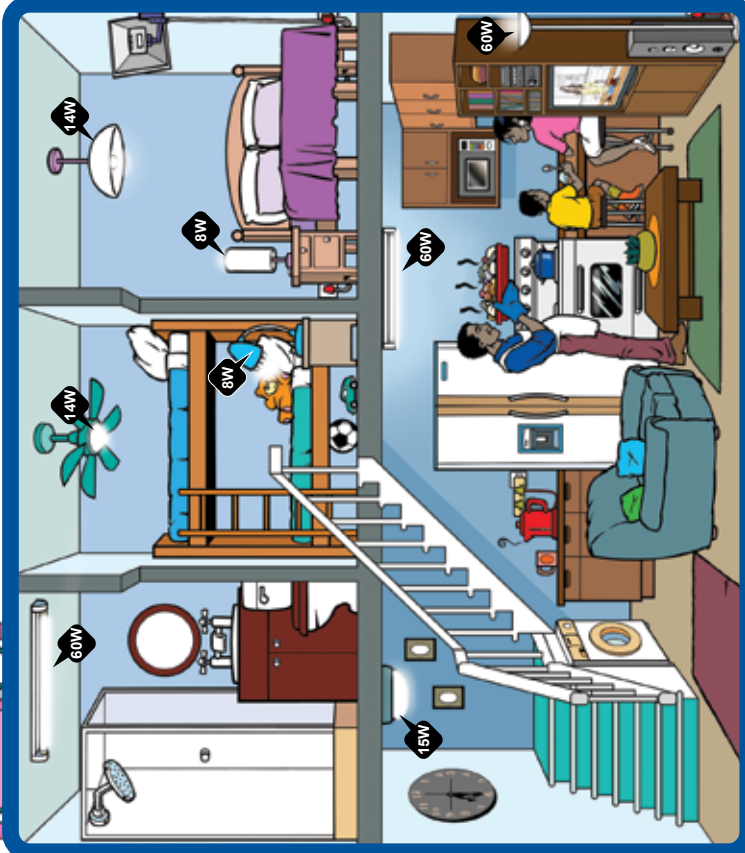
Renewable resources	Non-renewable resources

Activity 2: Energy, change and mechanisms - electrical energy

Kilowatt family



Watt family



Activity 2: Energy, change and mechanisms - electrical energy

Study the picture of the Watt and Kilowatt families and answer the questions below. The two families live in South Africa.

1. What is the main source of energy the families are using?



2. What is the main sources of energy the Kilowatt family is using?
Give reasons for your answer.

3. Give examples from the picture to show the following uses of electricity?
- a. Lighting.
 - b. Heating.
 - c. Driving machines.

4. Do you think the Watt and Kilowatt families are using electricity wisely (are they wasting or saving energy)?

5. Why should both families save electricity?

6. What are some of the ways the families can save electricity?

7. In order to use our coal resources wisely and save electricity what do you think should be the **golden rule** for the use of electricity?



8. Give examples from the picture to show how electricity is used in the following.

- 8.1 Lighting

8.2 Heating

8.3 Driving machines



9. Do you think the Watt and Kilowatt families are using electricity wisely, are they wasting or saving energy? Give reasons for your answer.

9.1 Which appliance do you think uses the most amount of energy in the house? Explain why you chose that appliance.

9.2 Which appliance uses the second most amount of energy in the house? Explain why you have chosen that appliance.

9.3 Which appliance uses the third most amount of energy in the house? Explain why you have chosen that appliance.

10. Based on what you have learnt about lighting technology (CFLs and incandescent lights), what advice would you give the Kilowatt family?

11. Using what you have learnt about electricity write down one energy-saving behaviour you will put into practice in your home or school from today. Write down the behaviour on a piece of paper/ cardboard and keep it in a place where it will remind you every day.

