



Energy Education

Foundation Phase (Grade 2) (CAPS)

Home Language, First Additional Language,
Mathematics and Life Skills

Energy Education

The demand for electricity is growing. An alternative to building new power stations to supply the increase in demand for electricity, is to use what we have more efficiently (i.e. without wasting). One of the ways is to change the way we use electricity. Eskom's Integrated Demand Management (IDM) Energy Education programme motivates people to change the way they use electricity. Eskom has taken the approach of integrating energy education within the school curriculum.

The energy education programme is being introduced in the Foundation Phase so that learners can see energy-saving as integral to their lives and put it into practice as they grow. The activities are simple and can be adapted by the educator. The activities are within the context of the Curriculum and Assessment Policy Statement (CAPS) of the Department of Education (DoE).

The subjects in Grade 2 are:

- Home Language
- First Additional Language
- Mathematics
- Life Skills

Note: The Eskom guides are in English. The educator will need to translate them into the Home Language or other languages.

Educators need to consult the Department of Education's CAPS policy guides for details on the skills, content and assessment within the relevant Phase and Grades.

Energy Education

Home Language

The skills in the Home Language are (CAPS, DoE, 2011):

<ul style="list-style-type: none">• Listening and speaking• Reading and phonics• Writing and handwriting	Thinking, reasoning and language structure and use are integrated into all four language skills (listening, speaking, reading and writing).
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An integrated approach is taken to develop the skills required in Home Language within the context of energy education.

Mathematics

In earlier grades children should be exposed to mathematical experiences that give them many opportunities to “do, talk and record” their mathematical thinking (CAPS, DoE, 2011, p10). The energy education activities can be done during teacher-guided numeracy learning opportunities offered during ring time. The Eskom Energy Education programme has been designed in line with the to “do, talk and record” approach.

Life Skills

The Life Skills subject is aimed at guiding and preparing learners for life and its possibilities, including equipping learners for meaningful and successful living in a rapidly changing and transforming society (CAPS, Life Skills Gr 1 - 3, DoE, 2011, p8). Through Life Skills learners are exposed to a range of knowledge, skills and values. Structured Life Skills activities should be short teacher-guided activities (CAPS, Life Skills Gr 1 - 3, DoE, 2011, p11). The activities within the Eskom Energy programme can be adapted by the educator to suit the Grade 2 programme.



- This icon means you should read carefully and carry out the relevant educator action in the activity.

For the educator to take note:

- Being energy-wise is the message that is integral to all the activities.
- You may use the activities as they are.
- You can adapt or change the activities.
- You can use other resources where you see appropriate.
- Adapt the activities to suit the grade you teach.
- Adapt the activities according to the level of the learners (consider language or any other barriers).
- Share and discuss the activities with other educators in the same phase and grade.
- You can use activities from the different grades but adapt to suit the level of your learners.
- You can design your own activities for the additional resources or activity sheets that have been provided. These may not have been mentioned in the activities.
- Practice the energy-saving behaviour so you become an example of what is expected.
- Share your knowledge and practice on energy-wise education with everyone at school, home and in the community.

Thank you for taking care of our earth

Energy-saving

Activity 1 Energy-saving lights

[Educator] Introduction for the learners:

Learners in the Foundation Phase learn best when they are able to see concrete objects. The educator should start with the following introduction.



- Show the learners the actual old light bulb (incandescent) and the energy-saving light (compact fluorescent light - CFL). Do not use the words incandescent or compact fluorescent light.
- You can also place A4 pictures of the lights next to each other.



**Incandescent light
Old traditional
light bulb**



**Compact fluorescent
light (CFL)
Energy-saving light**



Making reference to the energy-saving light:

- The energy-saving light does not get as hot as the old light bulb.
- It has a gas inside.
- The energy-saving light lasts far longer than the old light bulb.
- We should use the energy-saving light - it uses less energy.



Making reference to the old light bulb:

- The old light bulb has a thin wire inside.
- It gets very hot... it uses more energy.
- We should not use the old light bulb - it uses more energy.

Activity 1 Energy-saving lights

English - Home Language			
Component	Activity	Term	Resource
Listening and speaking (oral)	<ul style="list-style-type: none"> Listening to the differences between the bulbs Answering questions orally on the bulbs 	2	<ul style="list-style-type: none"> Actual light bulbs A4 picture of an energy-saving light A4 picture of the old light bulb



In this activity you are going to develop the learners' listening and speaking skills using the pictures of the energy-saving light and the old light bulb.

- Use prestik or a magnet to place the A4 pictures of the energy-saving light and the old light bulb next to each other on the board.
- Refer to the picture of the energy-saving light as A and the old light bulb as B.
- Tell the learners that you are going to ask questions on the lights and that they should put up their hands if they want to answer.
- You can add on more relevant questions.

Questions:



- Which picture shows the energy-saving light? [A]
- Which picture shows the old light bulb? [B]
- Which light should be used at home? [A - energy-saving light].
- Why is it not good to use the old light bulb? [It gets very hot, uses a lot of energy, does not last long].
- Should children play or change the light when it burns out? [No]
- Who should change the light when it burns out? [Parents or adults].

Activity 2 Use energy wisely... Do not waste energy (Pictograph 1)

Mathematics			
Component	Activity	Term	Resource
Data handling	<ul style="list-style-type: none"> Collect and organise data Represent data Pictograph 	2	Picture of the family

A pictograph is a way of showing information using pictures or images. This is a simple way of introducing learners to present information in tables and graphs later on.

To draw a pictograph one needs information. The information can be obtained from the learners on a specific topic or theme or the educator can provide the information. In this activity information on aspects of energy use are used to draw pictographs.

Pictograph 1

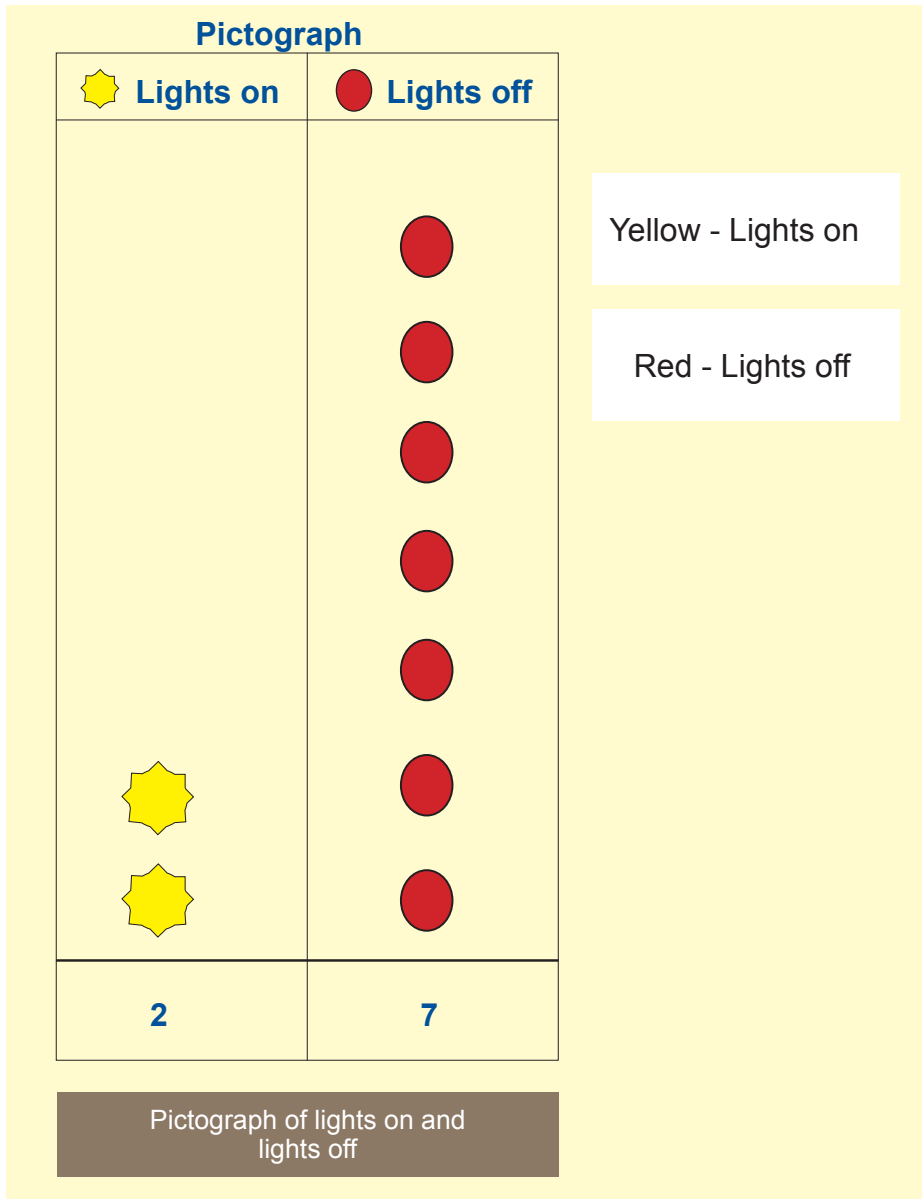


Use the picture of the family “Use energy wisely”.

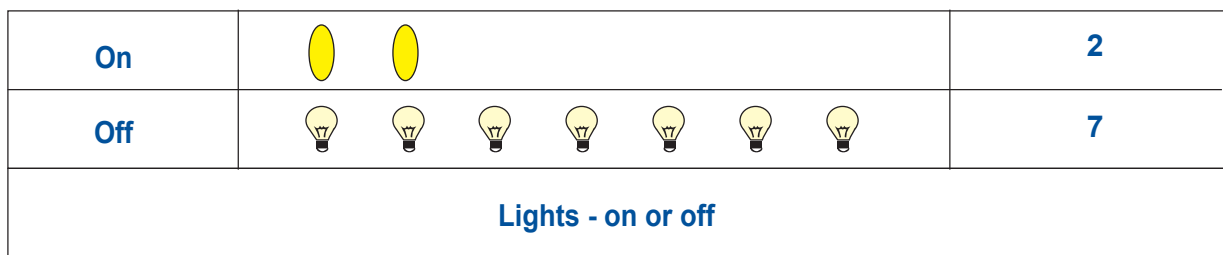
1. Count the lights that should be on? [2 - write the number on the board].
2. Count the lights that should be off? [7 - write the number on the board].
3. Let us put all the information on a pictograph.

- Give each learner an A4 page to draw the pictograph. You can also use the pictograph template provided.
- Draw the pictograph step by step.
- First draw the graph outline.
- Decide on a symbol/picture for the lights that should be on.
- Decide on a symbol/picture for lights that should be off.
- Draw the key to the graph - draw the picture or the correct symbol next to the word **on** and **off**.
- Label the graph. [Use simple words for the labels - **on,off**. Caption: lights **on** - **off**].
- Draw the picture or the correct symbol next to the word **on** and **off** in the table.
- Draw in the correct number of lights in the correct column.
- Refer to the examples given.

Activity 2 Use energy wisely... Do not waste energy (Pictograph 1)



The pictograph above is an example of how a pictograph can be laid out. You can use other ways. Another example is given below.



Activity 3 Use energy wisely... Do not waste energy (Pictograph 2)

Pictograph 2

This pictograph involves getting the information from the learners.





1. How many learners only have energy-saving lights at home? [Ask the learners to raise their hands and count loudly together. Write the number on the board].
2. How many learners only have old light bulbs at home? [Ask the learners to raise their hands and count loudly together. Write the number on the board].
3. Let us put all this information on a pictograph.

- Give each learner an A4 page to draw the pictograph. You can also use the pictograph template provided.
- Decide on a symbol/picture for an energy-saving light.
- Decide on a symbol/picture for the old light bulb.
- Draw the pictograph step by step.
- First draw the graph outline.
- Label the graph. [Use simple words for the labels - save, waste. Caption: lights at home].
- Draw the picture or the correct symbol next to the label.
- Draw the key to the graph.
- Draw the correct number of lights in the correct column.
- Refer to the previous example.

Information to be written on the board (NB. This is only an example):

	Number of learners
1. How many learners only have energy-saving lights at home?	3
2. How many learners only have old light bulbs at home?	2
3. Learners who did not raise their hands?	5
Total number of learners in class	10

Learners - Energy-saving lights		3
Learners - Old light bulbs		2
Learners - Energy-saving lights or old light bulbs		

Activity 4 Presentation/Role-play/Drama



1. Use the picture of the family for this activity.

English - Home Language			
Component	Activity	Term	Resource
Listening and speaking (oral)	<ul style="list-style-type: none"> • Questioning • Role-play different situations 	3	<ul style="list-style-type: none"> • Picture of the family • A2 poster of the family

- Tell the learners to place the picture of the family in front of them (the learners may have used the picture in previous activities).
- Put up an A2 poster of the family on the board.
- Tell the learners that you are going to ask questions on the picture and that they should put up their hands if they want to answer.
- Ask one question at a time and listen to the answers of the learner. Give other learners a chance to agree, disagree or add on.
- You can add on more relevant questions.



Questions:

1. Name all the rooms in the house? [Downstairs - kitchen/dining room, lounge. Upstairs - bathroom, middle bedroom, right-hand side bedroom].
2. Tell me something about the middle bedroom? [3 lights - all are on, a light switch, a bed with pillows, 2 side drawers and a mat].
3. Tell me something about the bedroom on the right-hand side? [1 light is on, bed and pillow, a ball, side drawer, a television which is on and a large drawer].
4. Who do you think sleeps in the bedroom on the right-hand side? Tell me why you think so? [The son/child - there is a ball/toy on the floor].
5. Tell me something about the bathroom. [1 light is on, the bath tub is full of water and the water is hot - steam can be seen].

Activity 4 Presentation/Role-play/Drama

6. Tell me something about the family. [There are 3 people in the family - mother, father, child; they are having dinner].
7. The father seems to be saying something. What do you think he is saying? [Listen to the answers from the learners. Then bring the learners' attention to the lights and the television - he is probably talking about the lights and the television that is on upstairs and how energy is being wasted].
8. Now pretend you are the father. What would you say to the family about using lights? [Give the learners time to think. Listen to the answers from the learners].

Activity 4 Presentation/Role-play/Drama



2. Use the picture of the A4 energy-saving light for this activity.

Life Skills			
Component	Activity	Term	Resource
Creative Arts	Improvise and interpret - role-play related to selected topics or stories told by the teacher.	2	<ul style="list-style-type: none"> A4 picture of the energy-saving light Picture of the family

Dramatisation: Dramatisation involves the learners doing actions to demonstrate something. The learners can make up short stories of no more than a few sentences based on a box of interesting objects - an object is selected and imagined to be **alive**.

Learners are to dramatise an energy-saving light and/or an old light bulb. Learners should not be allowed to touch the bulbs as they are fragile and break easily. The energy-saving light has mercury vapour in it and can cause harm.

- Put up the A4 picture of the energy-saving light.
- Tell the learners to look at the picture of the energy-saving light.
- The educator reads line 1 slowly and clearly and performs the action.
- The learners are to perform the action when the educator **claps**.
- [Educator claps]** - learners perform the action and repeat the words as the educator reads line 1 again.
- Repeat the same for each line on the next page.

- I am an energy-saving light.
- I give off light (show flicking action).
- Everyone should use lights like me.
- I use less energy.
- I can be dangerous - I break easily.
- Children should not touch me.
- I care for the **earth** therefore I use less energy.
- But remember children should never touch me.**

Activity 5 Story telling and role-play

English - Home Language			
Component	Activity	Term	Resource
Listening and speaking (oral)	Role-plays with different situations e.g. uses appropriate language with different people such as interviews with different people.	3	Story

Life Skills			
Component	Activity	Term	Resource
Creative Arts	Improvise and interpret - creating short scenes based on appropriate topics, focusing on the storyline.	1	Story



- Use the picture of the family “Use energy wisely” to help the learners visualise the story.
- You can use prompt questions to keep the learners’ attention.
- When reading the story repeat the lines that show moods (as a prompt question) for the learners to show action for the mood - e.g. Dad replied in a soft but clear voice, “ssshhhhh”. The educator should ask the learners - **What did dad say?** The learners are to put their index finger on their lips and say, “ssshhhhh”.
- Read the story to the learners with action and emotion.
- Replace or explain words that might be difficult.
- You can make up your own short story using the picture of the family [relate the story to saving energy].

Activity 5 Story telling and role-play

Good Habits – by Dr. Rajen Pillay

My name is Max and this is what happened at dinner last night. Dad sat down to have dinner with mummy and I. Mummy cooked a delicious dinner.

Mum watched a programme on television while at the table. Dad very politely told mummy to switch off the TV. Then I shouted out, “oh no dad, my programme is going to start just now.”

Dad replied in a soft, but clear voice, “ssshhhhh, eating is a sacred (Godly) activity. We should not eat and watch television at the same time. It is not a good habit. Enjoy the food, not the bad thoughts that are coming from the TV. Besides it is unkind to ignore each other at the table.”

“Max,” said dad, “I noticed that you had left all the lights and the television on upstairs. Son, I kindly ask that you switch the lights upstairs off.” “But why dad?”, I asked. He smiled and replied, “every time we put something on we are using energy. We are downstairs so there is no need for the lights upstairs to be on. Nobody is watching television upstairs. Right now we are wasting energy. Whenever we use energy and even if we are wasting it, I have to pay for it.

Do not waste **food**, do not waste **water**, do not waste **energy**, do not waste **money**, and do not waste **time**. Use what we have **wisely** - it is the right thing to do.”

“I listened to my dad and so did my mummy. Although we did wrong, dad was patient and explained very clearly that saving and using energy wisely is a good habit.”

Activity 5 Story telling and role-play



1. Questions on the story:

Since these are Grade 2 learners the questions should be asked orally. Move slowly and give the learners time to answer. When asking the questions point to the picture “Use energy wisely”.

1. Who are the people sitting at the dinner table? [Mum, dad and Max].
2. What did mum do wrong? [She was watching television while eating].
3. What did Max do wrong? [He shouted at the table; he also wanted to watch television while eating; he left the lights on upstairs; he left the television on upstairs].
4. What did dad teach the family about energy? [When you switch anything on, you are using energy; you pay for energy; switch off what you are not using].
5. Name 3 other things that dad taught the family. [Do not waste water, do not waste food, do not waste time, do not eat while watching television, be calm].
6. Was dad angry? What makes you think so? [No. Dad talked calmly and softly].
7. What are all the things that you have learnt from the story? [Do not waste; talk calmly; ...]
[Listen to answers from the learners].



You can add other related questions to the story.

Activity 5 Story telling and role-play



2. Role-play

- Tell the learners you want them to act out the story.
- Put the learners in groups of 3.
- Each one will have a role - mother/father/child.
- Give the learners time to practice their roles according to the story.
- Set up a dinner table with 3 chairs in the front of the class.
- Get one group to come out in the front.
- Prompt the learners with the story if they need help.

OR

- Tell the learners you want them to act out the story.
- Set up a dinner table with 3 chairs in front of the class.
- Ask the learners who wants to play the father - call the learner to the front.
- Ask the learners who wants to play the mother - call the learner to the front.
- Ask the learners who wants to play the child/son (a female/girl learner could also play the role) - call the learner to the front.
- Ask the learners to act out the story.
- Prompt the learners with the story if they need help.