



How to save energy

Foundation Phase (Grade 1)

Educator Guide

Home Language, First Additional Language,
Mathematics, Life Skills

How to save energy

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 Basic Education (DBE).

The subjects in Grade 1 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 Basic Education's CAPS policy guides for details on the skills, content and assessment within the relevant Phase and Grades.

How to save energy

Home Language

The skills in the Home Language are (CAPS, DBE, 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, DBE, 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, DBE, 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, DBE, 2011, p11). The activities within the Eskom Energy programme can be adapted by the educator to suit the Grade 1 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 use other resources where you see appropriate.
- Adapt or change the activities to suit the grade and level of the learners you teach (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 that best suit the level of learners and grade you are teaching.
- Practice the energy-saving behaviour so you become an example of what is expected.
- Share your knowledge and practice energy-wise education with everyone at school, home and in the community.
- Saving energy means we don't have to produce so much, using our limited natural resources and limiting the amount of pollution we create, thus taking better care of our environment.

Thank you for taking care of our earth

Energy-saving

Activity 1 Mathematics - Counting (Term 1 and 2)

[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 light) and the energy-saving light (compact fluorescent light - CFL)



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.

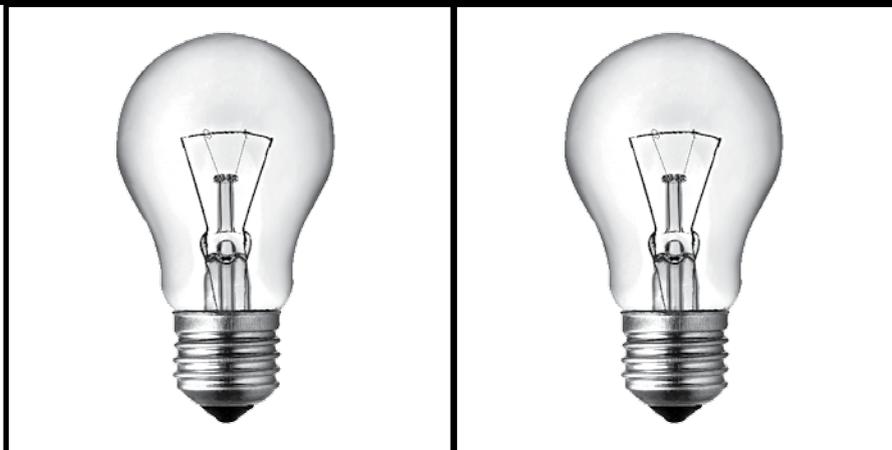
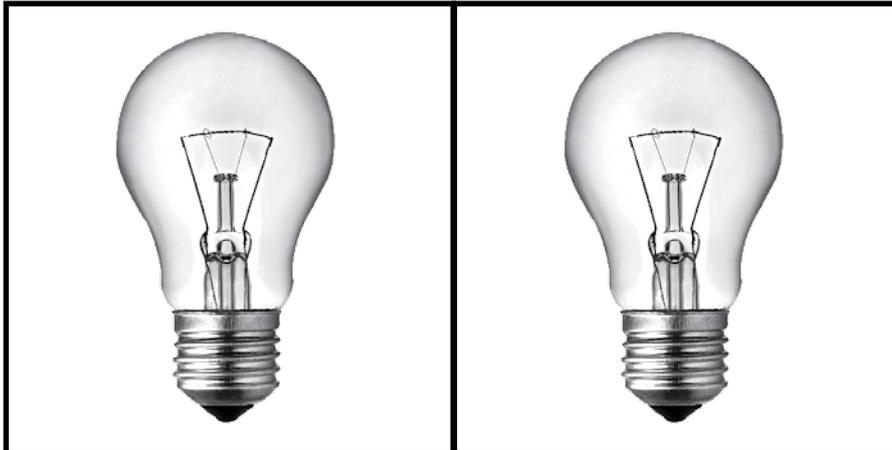


Making reference to the old light bulb:

- 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.

[Note: The safe disposal of CFL or energy savers is crucial for South Africa. CFLs disposed of en masse in land fill sites could be detrimental in years to come to water resources. The energy-saving light has mercury vapour in it, and should it break, the educator would have to clean it up with specific precautions and evacuate the class for 15 minutes].

Energy saving and old lights



Group activity

1. Use the resource sheet - Counting the lights and the A4 pictures of the lights.



First put up the large A4 pictures of the energy-saving light and the old light bulb side by side on the board and ask the learners:

Which one is the energy-saving light and which one is the old light bulb?



Now give out the counting sheets to each learner. Ask the learners to:

- Put a tick (✓) next to the energy-saving lights. [Draw the symbol of a tick on the board for the learners].
- Put a cross (X) next to the old light bulbs. [Draw the symbol of a cross on the board for the learners].

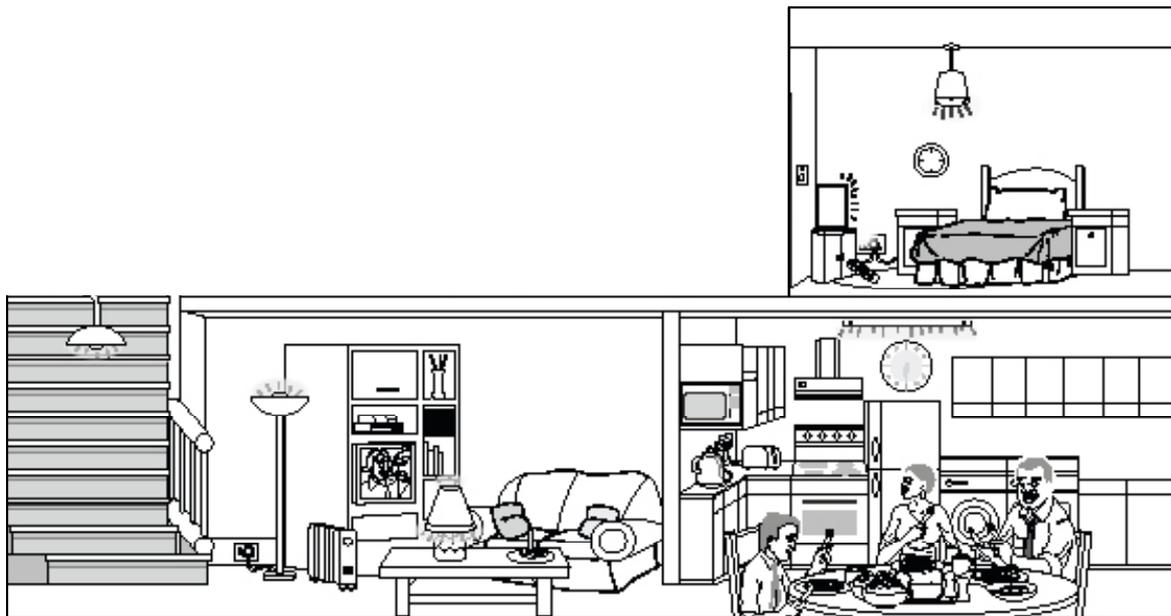


Read each question one at a time aloud - and wait for the learners to do the counting before moving on to the next question.

- 1.1 Count how many energy-saving lights (✓) are in row B? [3]
- 1.2 Count how many old light bulbs (X) are in row A? [2]
- 1.3 Which rows only have energy-saving lights? [Row B and D].
- 1.4 Which lights should we use at home? [Energy-saving lights - row B and D].



2. Use the picture of the family “Use energy wisely” for this part of the activity.



- Tell the learners that there are 3 primary colours: blue - red - yellow. [Show the learners the colours].
- Learners need to have crayons/colour pencils for this activity. If the learners do not have crayons/colour pencils then use symbols to represent the colours [E.g. circle - blue, triangle - red an square - yellow].
- Give each learner a picture of the family.



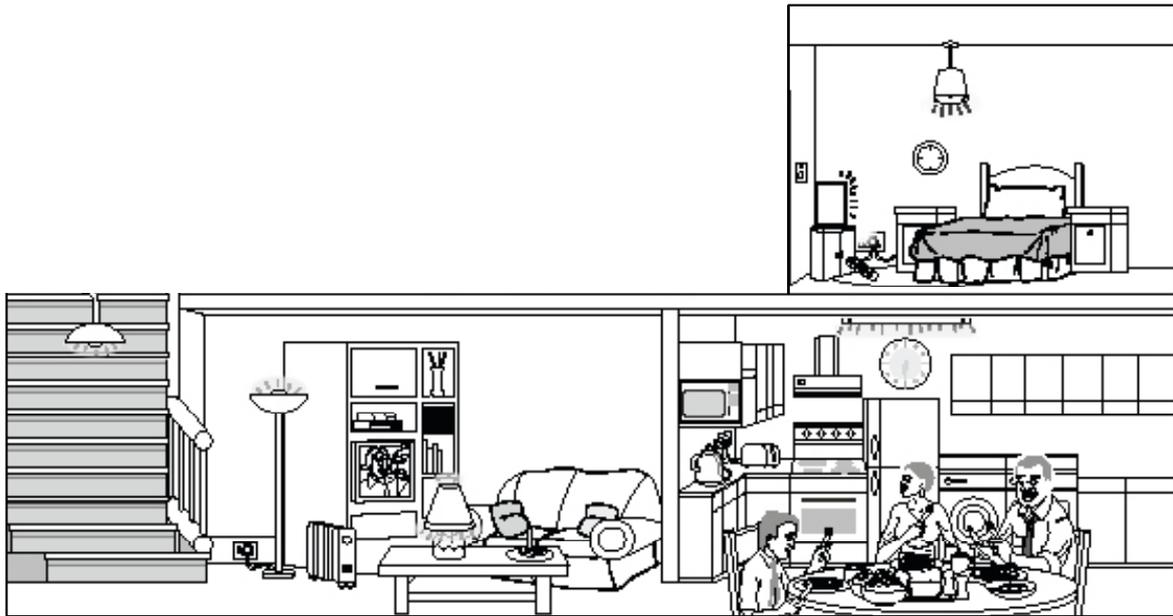
Take the learners step by step through the activity.

- First ask the learners to tell you what they see in the picture. [Listen to the learners' answers].
 - Read the questions one at a time and wait for the learners to complete before going on to the next question.
- 2.1 Count all the lights in the picture. [5]
 - 2.2 Do they have to put on all the lights in the house? What do you think? [Listen to the learners' answers and their reasons]. [No. They are in the kitchen].
 - 2.3 Which lights do you think should be on? [Kitchen/stairs].
 - 2.4 Colour the lights that should be **on** in **yellow**. [Kitchen/stairs].
 - 2.5 Colour the lights that should be **off** in **red**.
[All other lights besides the kitchen/stairs].
 - 2.6 Count the lights that should be **on**? [2]
 - 2.7 Count the lights that should be **off**? [3]

Activity 2 Mathematics - Counting: Describe, compare and order up to 15 objects (Term 3)



Use the picture of the family “Use energy wisely” for this activity. Take the learners step by step through the activity.



- Ask the learners to find the stairs in the picture.
- See if your friend has found the stairs.
- Now let us go up the stairs. [Ask the learners to stand up. Then step on the spot as if you are all going up the stairs. The learners can sit once you are all upstairs].
- Tell the learners to listen carefully. Ask the learners the following questions or give the instructions. Give them time to answer before going on to the next question.

Questions:

- 1.1 Count how many lights there are in the room upstairs:
 - The bedroom on the right. [1]
- 1.2 How many lights are there upstairs? [1]
- 1.3 How many more lights does the lounge have than the kitchen? [1]
- 1.4 How many lights are there in the house? [5].
- 1.5 Ask the learners the following lead questions:
 - How many people are in the house? [3 - mother, father and son].
 - Where are they? [In the dining room/kitchen].
 - What are they doing? [Having dinner/supper].
- 1.6 Do they need all the lights in the upstairs room to be on? What do you think? [Listen to the learners' answers]. [No - the family is eating in the dining room/kitchen].
- 1.7 What are you going to tell everyone who lives or stays in your house?



[Educator - talk about **saving and wasting**. Sum up with the message - “**Put/switch off the lights that are not needed**”].

Activity 3 Mathematics - Pictographs (Term 3)

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 can be used to draw pictographs.

Pictograph 1



Since these are Grade 1 learners guide them step by step in the activity. Go slow and be clear with the instructions.

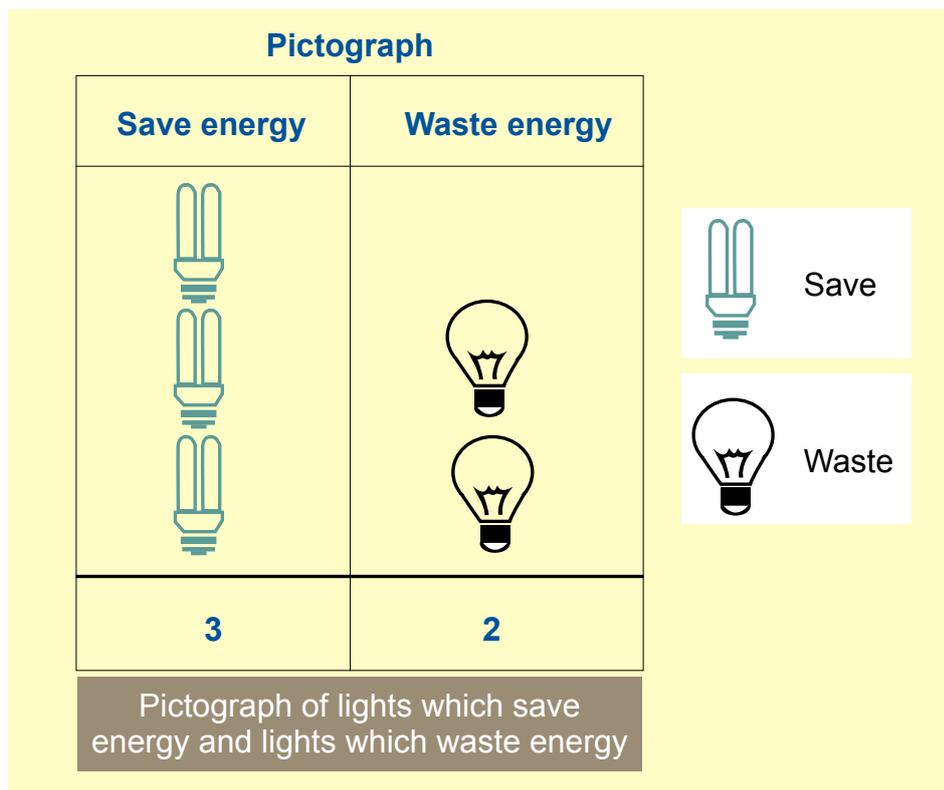
- Give each group/learner an envelope containing a mix of pictures of the light bulbs (3 energy-saving lights and 2 old light bulbs). [Prepare these beforehand].
- Ask the learners what is inside the envelope? [Pictures of a mix of light bulbs].
- Tell them today they are going to get a message.
- Ask the learners to open the envelopes and take out the pictures.
- If you do not have envelopes then give the learners a set of 5 pictures and go straight to the guided questions below.



Ask the learners the following questions [Go slowly step by step].

1. Count how many pictures there are all together and write the number down? [5]
 2. Separate the pictures into 2 groups (look at their shape to separate the pictures into the 2 groups). [Old light bulbs and energy-saving lights].
 3. Count how many old light bulbs you have. [2]
 4. Count how many energy-saving lights you have. [3]
 5. Which group has more: the energy-saving lights or the old light bulbs? [Energy-saving lights].
 6. Let us put all the pictures on a pictograph. [Tell the learners what a pictograph is].
- Give each learner a template of the pictograph.
 - Get the learners to stick the pictures in the pictograph.

- Decide on a symbol/picture for the lights that save.
- Decide on a symbol/picture for lights that waste.
- Draw the key to the graph - draw the picture or the correct symbol next to the word save and waste.
- Label the graph. [Use simple words for the labels - save, waste. Caption: lights].
- Draw the picture or the correct symbol next to the word save and waste in the table.
- Draw/stick in the correct number of lights in the correct column.
- Write in the caption for the graph.
- Refer to the examples given.



Activity 3 Mathematics - Pictograph 2 (Term 3)

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

Save		3
Waste		2

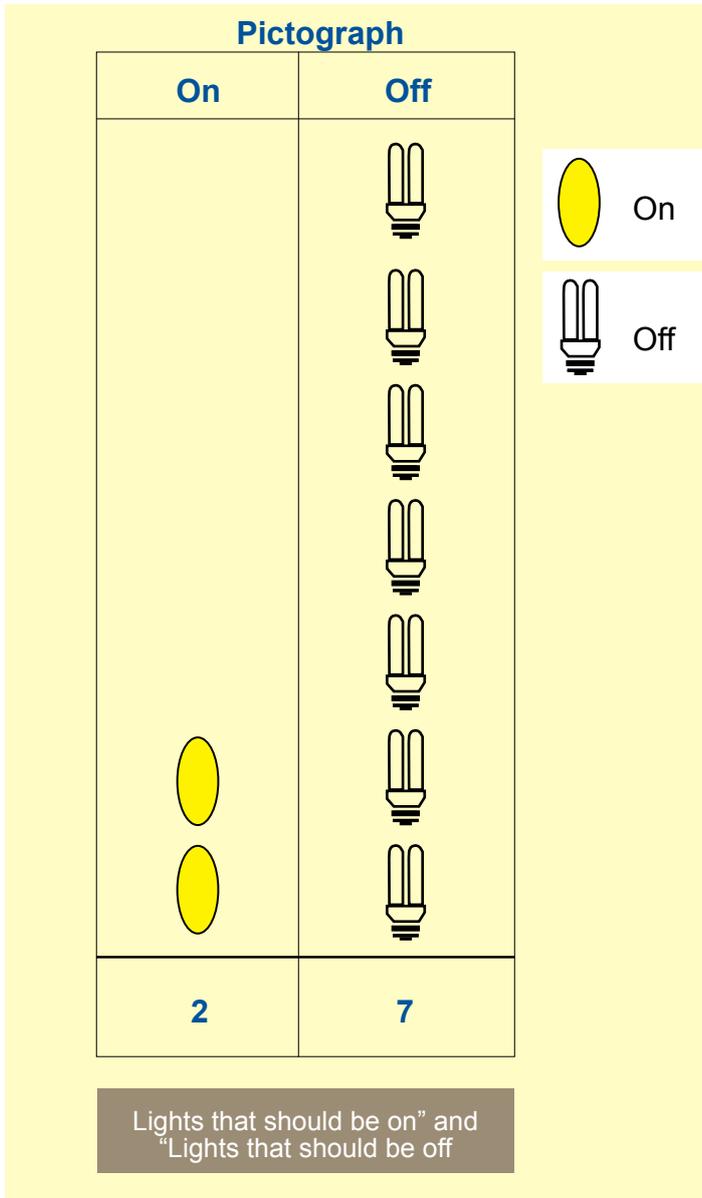
Save		3
Waste		2

Pictograph 2

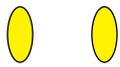


Use the picture of the family: "Use energy-wisely".

- Count the lights that should be on? [2 - one in the kitchen/dining room and one on the stairs].
- Count the lights that should be off. [3 - one in the bedroom and two in the lounge].
- Let us put all the information on a pictograph. Use the template provided.
 - Decide on a symbol/picture for the lights that save.
 - Decide on a symbol/picture for lights that waste.
 - Draw the key to the graph - draw the picture or the correct symbol next to the word save and waste.
 - Label the graph. [Use simple words for the labels - save, waste. Caption: lights].
 - Draw the picture or the correct symbol next to the word save and waste in the table.
 - Draw in the correct number of lights in the correct column.
 - Write in the caption for the graph.
 - Refer to the examples given.



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

On		2
Off		7

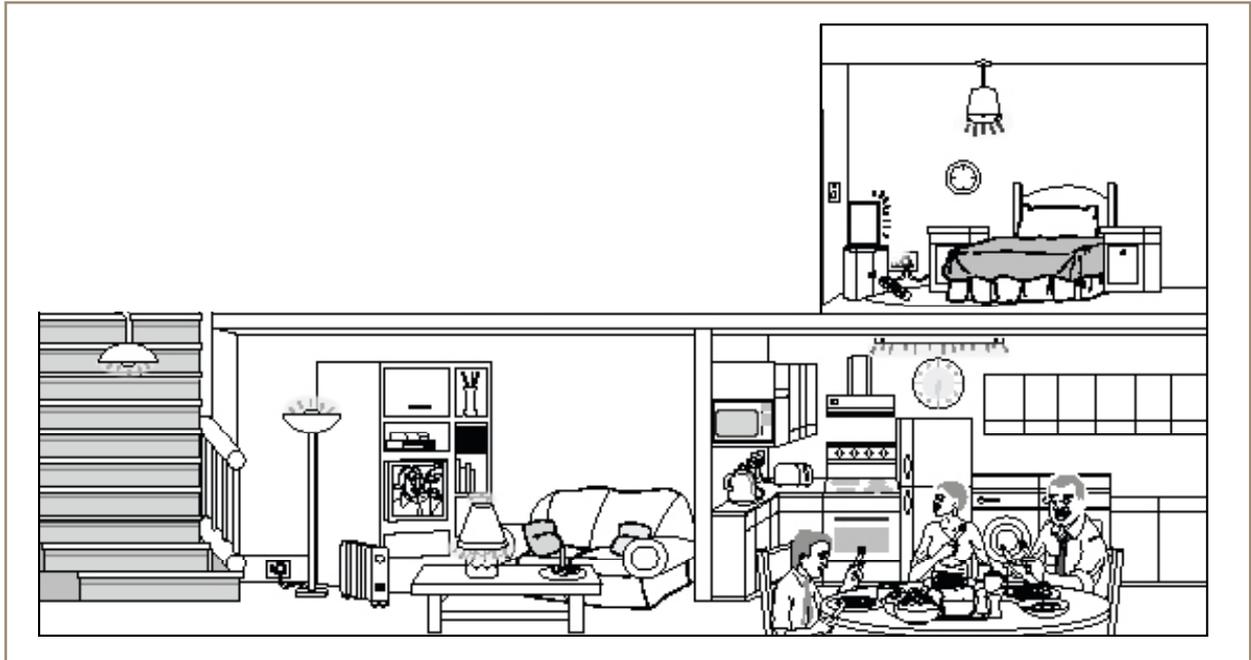
Lights - on or off

Activity 4 Life Skills - Beginning knowledge, personal and social well-being and healthy habits - 4 hours (limited television and sleep) (Term 1)



Let us talk about watching television. Use the picture of the family “Use energy wisely” for the class discussion. Ask the learners to put their hands up when you ask a question.

Max and his family



1. How many learners think that the TV downstairs should be **on**? [Write the number that raised their hands on the board]. [Follow-up by asking why].
2. How many learners think that the TV upstairs should be **off**? [Write the number that raised their hands on the board]. [Follow-up by asking why].
3. How many learners think that both TVs should be **off**? [Write the number that raised their hands on the board]. [Follow-up by asking why].

[Both televisions should be off - upstairs because no one is watching television and downstairs the family is having dinner. We should not eat and watch television at the same time].

4. How does watching limited (less) TV help us? [Time to do other things/saving electricity/TV affects our brain (negatively?)/programmes are not good/violence, bad language, bad habits, lack of values...].
5. Should we watch TV before going to bed? [No]. [Follow-up by asking why]. [The brain needs to relax before going to bed - the pictures change so fast on television that it does not relax the brain. Sometimes the unpleasant things that we see on television disturb the mind making it difficult to have a peaceful sleep or it leads to us having bad dreams].

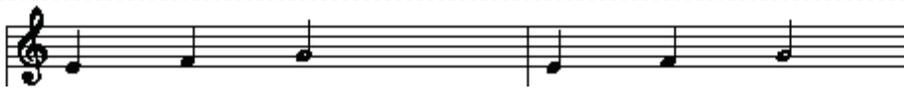
Activity 5 Life Skills - Creative Arts (Term 1)

Dramatisation involves the learners doing action to show 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 and the old light bulb.
- Tell the learners to look at the picture of the old light bulb.
- The educator reads the first verse of the song and demonstrates the tune. (The song is sung to the tune of Father Jacob, Bana ba Sekolo and Frere Jacques)
- **The learners are to sing the first verse of the song when the educator claps.**
- **[Educator claps]** - learners sing the song as the educator claps
- Repeat the same for each line on the next page.
- Tell the learners to look at the energy saver light.
- Reads the second verse of the song as was done in the first verse.
- The children sing the second verse when the teacher claps.
- Then the whole song is repeated until the children can sing it on their own. Ask the class who wants to sign it for everyone.

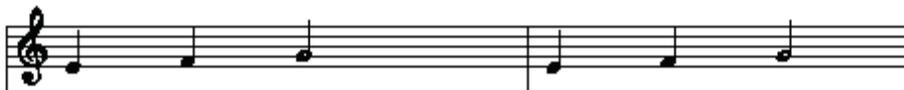


In-can-de-scents!
In-can-de-scents!
They waste rands, they waste rands.
They use lots of energy, they use lots of energy
Don't use them, don't use them!

C-F-L's

C-F-L's

They last long, they last long
They are energy savers, they are energy savers,
Change and save, change and save.



Frère Jacques

Modesto Traditional Record

1

Piano

Are you sleep - ing, Are you sleep - ing,

Bro - ther John, Bro - ther John,

4

Morn - ing bells are ring - ing, Morn - ing bells are ring - ing,

Ding Dong Ding, Ding Dong Ding.



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Activity 6 Home Language - Story telling (Term 2)

Twice weekly focused listening and speaking activities.

Weeks 1 - 5:

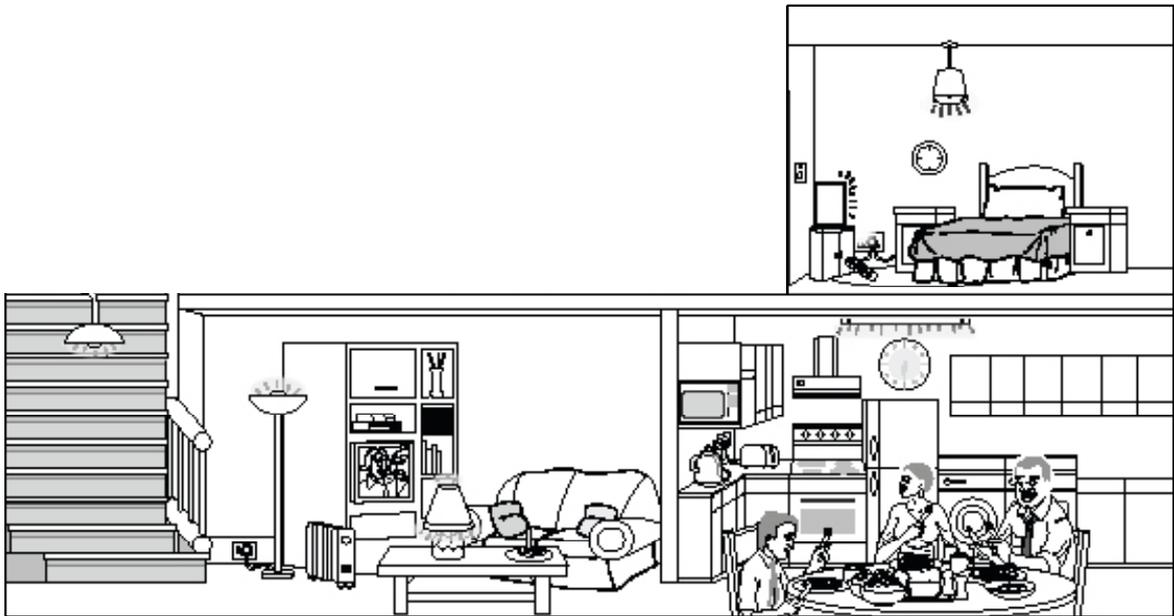
- Listen to stories with interest, drawing a picture to show understanding.
- Answer closed and open-ended questions.

Weeks 6 - 10:

- Listen to stories and identify the main idea.
- Sequence pictures of a story.
- Participate in classroom discussions.



- Use the picture of the family “Use energy wisely” to help the learners visualise the story.



- You can use prompting questions to keep the learners' attention.
- When reading the story repeat the lines that show moods (as a prompting question) for the learners to also 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 the 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].

Good Habits

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, “Sssshhhhh. We should not eat and watch television at the same time. It is not a good habit. Enjoy the food and lets’ not watch the TV while eating. Besides it is unkind to ignore each other at the table.”

“Max,” said dad, “I noticed that you had left all the lights on upstairs. Son, I kindly ask that you switch the lights off upstairs.” “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. 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.”

Questions on the story:



Since these are Grade 1 learners the questions should be asked orally. Go 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].
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 time, do not waste food, do not waste money, 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 the answers of the learners].



You can add other related questions to the story.

WHAT IS POWER ALERT?

Power alert is real time messaging asking consumers to switch off to save energy.

It is the green, orange, red and black alerts on SABC, e.tv and DSTV. They communicate how much electricity is available and, if necessary, ask you to switch off unnecessary lights and appliances if the demand for electricity becomes too high - especially between 5pm and 9pm on weekday evenings. If you switch off immediately when you see a Power Alert on the television you and your family make a real difference, because you help to save electricity in South Africa



POWER ALERT COMPRISES 4 STAGES:

01

A **GREEN** alert tells you there is enough electricity but asks you to switch off all lights you do not need.



02

An **ORANGE** alert tells you the electricity supply is under pressure and asks you to switch off all lights you do not need plus your geyser and swimming pool pump.



03

A **RED** alert tells you the electricity supply is under much pressure and asks you to switch off all lights you do not need plus your geyser, swimming pool pumps and all other unnecessary appliances.



04

A **BLACK** alert tells you the electricity supply is under most pressure and asks you to switch off everything except your television and one light in the television room.



Go to www.poweralert.co.za for real-time information on the electricity supply.