Conserving Energy

Lesson plan and teacher's notes · Grade 2 Science · 2 periods of 40 minutes

School	(write school name)	**Teacher**	(write name)
Date	(date)	**Class**	Grade 2
Subject	Science	**Enrolment**	Boys ___ Girls ___ Total ___
Time	80 minutes	**Topic**	Conserving Energy

Learners with visual impairment feel switches and appliances, hear the sound change when things are turned off, role-play as Energy Savers and match tactile cards to a switch, a door and a window. Two periods of 40 minutes.

Specific outcomes

By the end of the lesson, learners should be able to:

1. Demonstrate turning off lights and appliances to conserve energy
2. Match energy-saving practices to objects
3. Explain ways of saving energy in their own words

Prior knowledge

- Learners know a light switch, a fan and a radio
- Learners know doors and windows by touch

Teaching and learning materials

- Light switch or model
- Door and window
- Fan and radio
- Tactile picture cards (raised images)
- Braille or large-print labels
- Audio descriptions

References

Ministry of Education (CDC) Grade 2 Science syllabus and module; 25Schools learners' note: Conserving Energy.

Lesson development

Stage and time	Teacher activities	Learner activities
Period 1 Present 10 min	Take learners into a room with the light on. Let them feel the switch and hear the sound when it is turned off. Explain that energy helps things work but must not be wasted. Use touch: switch, plug and appliance buttons. Use sound: the switch, and the silence after turning off a fan or radio.	Feel the switch and listen.
Period 1 Practice 20 min	Give scenarios: a fan is running, a radio is playing, a light is on. The learner turns each off. Ask: what happens when you turn it off, is the energy still being used. Learners describe the difference: sound stops, light disappears, air stops moving.	Turn off appliances and describe the change.
Period 1 Produce and closure 10 min	Learners role-play Energy Saver: walk into a room, check if the light is on and turn it off. They feel a fan or radio and decide whether to turn it off. They make a tactile energy-saving checklist with raised symbols of a bulb, a fan and a radio.	Role-play and explain.
Period 2 Present 10 min	Give tactile cards of a light bulb, a door and a window. Explain: turning off lights saves energy, closing doors keeps heat inside, using sunlight instead of electric light saves energy. Learners explore each card by touch with Braille labels.	Explore cards by touch.
Period 2 Practice 20 min	Give real objects (light switch, door handle, window frame) and picture cards. Learners match each card to the object. Ask: which card goes with the light switch, which allows closing the door, which card shows using sunlight. Learners explain as they match.	Match cards and explain.
Period 2 Produce and closure 10 min	Learners match cards alone and say, for example: this card goes with the light switch, I turn off the light to save energy. They arrange cards in a tactile energy-saving chart of daily actions. Learners explain the steps one takes to save energy.	Match alone and build the chart.

Teacher's content notes

Read these before the lesson. They are what you need to know, not what to copy onto the board.

Energy

Energy helps things work, but we must not waste it.

Turning off

Turning off a fan stops the air moving, turning off a radio stops the sound, turning off a light makes the light disappear.

Other ways

Turning off lights saves energy. Closing doors keeps heat inside the room. Using sunlight instead of electric light saves energy.

Questions to ask during the lesson

Question	Expected answer
The teacher takes the class into a room where the light is on and the radio is playing but no one is using them. (a) What should we do with the light. (b) What should we do with the radio. (c) Why.	(a) Turn it off. (b) Turn it off. (c) To save energy.
A learner feels the fan running in an empty classroom and then the teacher turns it off while the learner listens. (a) What happens to the air. (b) What happens to the sound. (c) Is energy still being used.	(a) It stops moving. (b) The sound stops. (c) No.
The teacher holds up a card of a window and asks what to do during the day when it is bright outside. (a) What does the window let in. (b) What can we turn off. (c) Why.	(a) Sunlight. (b) The electric light. (c) To save energy.

Worked examples for the board

Energy Saver check

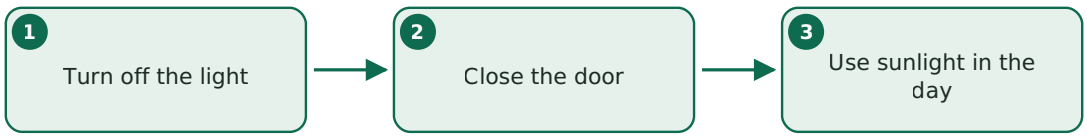
Step 1: Walk into the room. Step 2: Feel if the fan is running or listen for the radio. Step 3: Find the switch. Step 4: Turn it off.

Matching a card

Step 1: Feel the card. Step 2: Find the object, for example the door. Step 3: Say: this card goes with the door, I close it to keep heat inside.

Board plan

Write the title Conserving Energy. Write three actions: turn off lights, close doors, use sunlight in the day.



The finished board

Mistakes to expect

Learners often think	Put it right
An appliance that is not working still uses no energy because nobody is near.	Let learners feel and hear that the fan or radio is still running until it is turned off.
Energy is only for lights.	Let learners find the fan and radio and turn each off.

Differentiation

Learners who struggle

Start with one appliance, such as a radio, and turn it on and off several times so learners hear the change.

Learners who finish early

Ask learners to plan an energy-saving walk of the school and say what to turn off.

Hearing or visual impairment

Guide hands to each switch and describe each sound aloud. Use raised symbols with Braille labels and pair learners with a helper for the role-play.

No projector, no printing

Where there is no electricity, use a torch, a radio with batteries and drawings on cards of the switch, door and window.

If time is short

Keep turning off appliances in Period 1 and matching cards in Period 2. Do the energy-saving chart next lesson.

Evaluation

Question or task	A correct answer shows
The teacher asks Bupe after the lesson why we should turn off lights when leaving a room. (a) Give one reason. (b) What happens when the light is off. (c) Name another appliance to turn off.	(a) To save energy. (b) The light disappears. (c) A fan or radio.
The teacher gives Mwamba a card of a door and asks him to explain. (a) What does the card show. (b) What do we do with the door. (c) Why.	(a) A door. (b) Close it. (c) To keep heat inside the room.

Homework

Njavwa's family has a radio, a fan and a light in the sitting room. On a sunny day her father leaves for work and nobody is in the room, but all three are on. (a) What should Njavwa do first. (b) What can she use instead of the light. (c) Why is this good.

Extra practice with answers

Question	Answer
1. Mulenga walks into the school hall after a meeting and hears a radio still playing while no one is there. The teacher asks him what to do. (a) What should he do. (b) What stops. (c) Why.	(a) Turn it off. (b) The sound. (c) To save energy.
2. Chanda is given a card of a light bulb and a light switch in class and asked to explain the match to her teacher. (a) What does she turn off. (b) What disappears. (c) What does it save.	(a) The light. (b) The light disappears. (c) Energy.
3. It is a cold evening at home and Bupe's mother tells her to close the door of the sitting room. Bupe asks why. (a) What does closing the door do. (b) What is kept inside. (c) Does this save energy.	(a) Keeps heat inside. (b) Heat. (c) Yes.
4. The class sits in a bright room at midday and the electric light is on. The teacher asks learners what they should do. (a) What can they use instead. (b) What should they turn off. (c) Why.	(a) Sunlight. (b) The light. (c) To save energy.

Answers to the learners' check-yourself questions

1. What should we do with a light that nobody is using.
   Turn it off.
2. What happens when a radio is turned off.
   The sound stops.
3. Why do we close doors to keep heat inside.
   It saves energy.
4. What can we use in the day instead of electric light.
   Sunlight.
5. Mulenga goes to the classroom after break and finds a fan running while nobody is inside. He knows we should not waste energy. (a) What should he do. (b) What will happen to the air. (c) Why is this good.
   (a) Turn it off. (b) It stops moving. (c) It saves energy.
6. Chanda's mother leaves the house in the morning and the radio is still playing in an empty room while sunlight comes through the window. (a) What should Chanda do with the radio. (b) What can she use instead of a light. (c) Why.
   (a) Turn it off. (b) Sunlight. (c) To save energy.

Teacher's reflection

What went well:

What I will change next time:

Learners who need follow-up: