Household Chemicals

Lesson plan and teacher's notes · Grade 2 Science · 1 period of 40 minutes

School	(write school name)	**Teacher**	(write name)
Date	(date)	**Class**	Grade 2
Subject	Science	**Enrolment**	Boys ___ Girls ___ Total ___
Time	40 minutes	**Topic**	Household Chemicals

Learners with visual impairment learn about household chemicals such as soap and bleach using empty containers and safety charts. They learn that chemicals can harm people and pollute water, air and soil, and practise safe handling through role play and sorting. One period of 40 minutes.

Specific outcomes

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

1. Name common household chemicals
2. Say how chemicals can harm people and the environment
3. Sort and demonstrate safe and unsafe handling

Prior knowledge

- Learners know soap and salt at home
- Learners know that some things are dangerous

Teaching and learning materials

- Empty containers of soap, bleach and detergents
- Braille or audio safety charts
- Cards of safe and unsafe practices
- Chalk and board

References

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

Lesson development

Stage and time	Teacher activities	Learner activities
Present **10 min**	Show empty containers such as soap and bleach. Ask: What do we use these for. Explain simply the dangers: chemicals can harm humans, with effects such as breathing problems and skin damage, and can cause death. Explain that chemicals can pollute water, air and soil.	Handle the empty containers, answer and listen.
Practice **10 min**	Pair the learners. They role-play safe and unsafe use with real empty containers. Then they sort safe and unsafe practices for handling chemicals.	Role-play and sort safe and unsafe practices.
Produce **10 min**	Each learner explains one danger of chemicals and demonstrates safe handling of household chemicals.	Explain one danger and show safe handling.
Closure **10 min**	Revisit the main ideas through guided discussion and hands-on recall. Learners name household chemicals such as soap, bleach and detergents using real objects. Stress that some chemicals are helpful when used correctly and some can be harmful if touched, smelled or swallowed without guidance. Always ask an adult before using any household chemical.	Name chemicals and repeat the safety messages.

Teacher's content notes

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

Chemicals at home

Household chemicals include soap, salt, sugar, toothpaste, paraffin, detergents, bleach and cooking oil. They are used for cleaning, cooking and personal hygiene.

Effects

Chemicals can cause difficulties in breathing, peeling of the skin and death, and can pollute water, air and soil.

Safety rules

Do not taste unknown substances. Keep chemicals away from the mouth and eyes. Seek adult help when using strong chemicals.

Questions to ask during the lesson

Question	Expected answer

The teacher holds an empty soap container and an empty bleach container and asks the class about them. (a) What do we use soap for. (b) Are they household chemicals. (c) Who should we ask before using them.	(a) Cleaning. (b) Yes. (c) An adult.
A learner role-plays pouring a chemical on the ground near a stream while the teacher watches. (a) What can the chemical pollute. (b) Is this safe. (c) What should be done.	(a) Water and soil. (b) No. (c) Use chemicals carefully and ask an adult.
The teacher asks learners about the effects of strong chemicals on people. (a) Name one effect on breathing or skin. (b) Can chemicals cause death. (c) What is the key safety message.	(a) Breathing problems or skin damage. (b) Yes. (c) Ask an adult first.

Worked examples for the board

Sorting practices

Step 1: Take a card. Step 2: Ask if it keeps us safe. Step 3: Put it in safe or unsafe. Step 4: Say why.

Safe role play

Step 1: Hold an empty bottle. Step 2: Say what it is for. Step 3: Say I will ask an adult before using it.

Board plan

Write the title Household Chemicals. Write two columns: useful and harmful. Write the safety rule: ask an adult first.

Idea	Examples
Household chemicals	Soap, bleach, detergents, salt, sugar
Harm to people	Breathing problems, skin damage, death
Harm to environment	Polluted water, air and soil

The finished board

Mistakes to expect

Learners often think	Put it right
All household chemicals are safe to taste or smell.	Use only empty containers. Say that some chemicals are harmful if touched, smelled or swallowed without guidance.
A chemical only harms the person who uses it.	Explain that chemicals can also pollute water, air and soil.

Differentiation

Learners who struggle

Use only two empty containers, soap and bleach, and ask one question about each.

Learners who finish early

Ask learners to make up a safety rule for the home and explain why it matters.

Hearing or visual impairment

For learners with a visual impairment, use only empty containers and Braille or audio safety charts. Teach by touch and description and never ask them to smell or taste unknown substances.

No projector, no printing

Use empty bottles and tins from home. Make safety cards by hand with raised dots.

If time is short

Keep the empty containers, the dangers and the safety rule. Move the role play to the next lesson.

Evaluation

Question or task	A correct answer shows
The teacher shows Njavwa an empty bleach bottle and asks her about it in front of the class. (a) Name one danger of bleach. (b) What can chemicals pollute. (c) Who must she ask before using it.	(a) Skin damage, breathing problems or death. (b) Water, air or soil. (c) An adult.
During role play Mulenga is told that a bottle has no label and is asked what to do. The class watches. (a) Should he taste it. (b) Why. (c) What should he do.	(a) No. (b) It may be harmful. (c) Ask an adult.

Homework

At home Bupe finds a bottle of paraffin near the cooking fire and her little brother wants to touch it. She remembers the lesson. (a) What should she do. (b) How can chemicals harm people. (c) Who should she ask for help.

Extra practice with answers

Question	Answer
1. Mulenga sees a bottle of bleach on a low shelf at home while his baby sister crawls near it. His teacher asks what he should do. (a) Is bleach safe for a baby. (b) What can it do to skin. (c) Who should he tell.	(a) No. (b) Damage it. (c) An adult.
2. A teacher asks learners what soap and toothpaste are used for. A learner answers the class. (a) What is soap used for. (b) What is toothpaste used for. (c) Are they household chemicals.	(a) Cleaning. (b) Keeping the body clean. (c) Yes.
3. The teacher asks a group to sort practices into safe and unsafe. One card says tasting unknown substances. (a) Is it safe. (b) Why not. (c) Give one safe practice.	(a) No. (b) It may be harmful. (c) Ask an adult before using chemicals.

4. A class talks about chemicals poured into a river near a village. A learner is asked what happens. (a) What gets polluted. (b) What else can chemicals pollute. (c) Is this good for the environment.

(a) Water. (b) Air and soil. (c) No.

Answers to the learners' check-yourself questions

1. Name two household chemicals.
   Any two of soap, salt, sugar, toothpaste, paraffin, bleach and detergents.
2. Name one way a chemical can harm a person.
   Breathing problems, skin damage or death.
3. What can chemicals pollute.
   Water, air and soil.
4. Who must we ask before using a household chemical.
   An adult.
5. Mwamba finds an old bottle at home with something in it and wants to taste it to see what it is. His sister stops him. (a) Should he taste it. (b) Why not. (c) What should he do.
   (a) No. (b) It may be harmful. (c) Ask an adult for help.
6. Chanda is told to wash plates at home with a strong cleaner. Her mother is not around. She wants to use it. (a) Is the cleaner safe to use without help. (b) What can it do to her skin. (c) What should she do first.
   (a) No, not without guidance. (b) It can damage the skin. (c) Ask an adult.

Teacher's reflection

What went well:

What I will change next time:

Learners who need follow-up: