Weather and climate change

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**	Weather and climate change

Learners observe and name hot, cold, windy and wet weather, study how weather changes before rain, put weather events in order, and discuss effects of climate change such as heat waves, floods and drought and how to reduce them. Two periods.

Specific outcomes

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

1. Name hot, cold, windy and wet weather
2. Describe the weather and how it makes them feel
3. Order a weather change from sun to clouds to rain
4. Name effects of climate change: heat waves, floods and drought
5. Say ways of reducing these effects such as planting trees and saving water

Prior knowledge

- Learners know sunny and rainy days
- Learners can draw a simple picture
- Learners know the days of the week

Teaching and learning materials

- Chalk and board
- Picture cards and video clips of different weather
- Work cards with weather and what leads to it
- Paper and crayons for drawing and posters
- Picture cards of good and bad practices for the environment

References

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

Lesson development

Stage and time	Teacher activities	Learner activities
P1 Hook and observe the weather 10 min	Say: Look outside. How is the weather today. Say: you were playing outside and it was sunny but soon it rained. What weather changes happened. Take learners outside and ask: What is the weather like. How does it make you feel. Why. Introduce the words hot, cold, windy, wet.	Observe, describe and say how it feels.
P1 Weather pictures 12 min	Show a video or picture cards of weather. Ask: What types of weather do you see. How do you know. Do all places have the same weather. Which have you experienced.	Answer and give reasons.
P1 Draw the weather 12 min	Give each group a picture card with one weather pattern. Learners describe it, explain what happens in that weather and draw it. Display drawings on the wall as a collage. Ask which weather is good for planting crops and which for playing outside. Tell them to focus on ideas, not neat drawings.	Describe, draw and display.
P1 Conclusion 6 min	Give worksheets to copy and complete by describing each weather pattern. Summarise.	Complete the worksheet.
P2 Weather changes 14 min	Ask: How can you tell it is about to rain. Tell the story of children on the field when a strong wind starts and clouds form quickly. Ask what happens next. Give groups work cards to match weather with the events that lead to it. Ask: What happens when wind blows strongly. What do dark clouds mean. What weather comes after clouds.	Match cards and explain.
P2 What comes first 10 min	Show a video of sunny weather changing to rainy. Groups order cards sun, clouds, rain. Ask which comes first, next and last. Do not rush corrections; let learners discover the order. Each learner draws the changes in order.	Order the cards and draw the sequence.
P2 Effects of climate change 12 min	Tell the story of village A with no rain for a long time and village B with heavy rain for days. Ask learners to predict what happened and to share real experiences of floods, drought or heat. Name heat waves, floods and drought.	Predict, share and name the effects.

P2 Posters and conclusion 4 min	Groups make a poster on how to reduce one effect and display it. Mention planting trees, farming with care and saving water. Sort cards into good and bad practices. Summarise and give homework.	Make posters and sort cards.

Teacher's content notes

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

Weather patterns

Learners recognise hot, cold, wet and windy weather by going outside, using pictures and videos, and drawing. Not all places have the same weather pattern.

Weather changes

Weather changes in terms of temperature, rain, wind and cloud formation. Wind and clouds come before rain. Focus on changes learners can relate to at this level.

Effects of climate change

Heat waves, floods and drought are effects of climate change. Learners share real experiences and say how to reduce the effects.

Reducing the effects

Clear misconceptions and draw attention to planting trees, sustainable farming and water conservation. Learners sort pictures into good and bad practices.

Questions to ask during the lesson

Question	Expected answer
The class goes outside and feels a strong wind. The sky has many dark clouds. (a) What weather is the class feeling. (b) What do dark clouds mean. (c) What may come next.	(a) Windy weather. (b) Rain may come. (c) Rain.
A girl draws a sun, then clouds, then rain on her page. Her teacher asks her to explain. (a) Which weather is first. (b) Which is last. (c) What is in the middle.	(a) Sun. (b) Rain. (c) Clouds.
The class makes a poster about floods in a village near the river. The teacher asks learners about it. (a) What is a flood. (b) Why is it harmful. (c) Name one way to reduce effects of climate change.	(a) Too much water covering the land. (b) It can damage homes and fields. (c) Plant trees or save water.

Worked examples for the board

Ordering a weather change

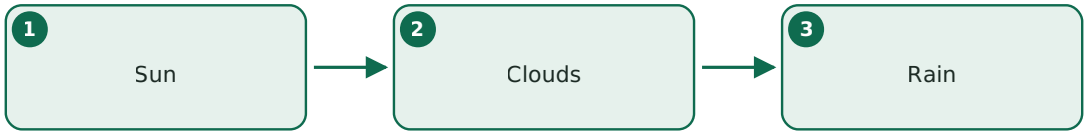
Step 1: Show three cards: sun, clouds, rain. Step 2: Ask which comes first. Step 3: Put sun first, clouds next and rain last. Step 4: Say why: clouds form and then rain falls.

Making a poster

Step 1: Choose one effect, for example drought. Step 2: Draw a dry field. Step 3: Add one way to help, such as planting trees. Step 4: Display the poster and explain it.

Board plan

Write the title. Write the four weather words hot, cold, windy, wet. Draw the chain sun, clouds, rain with arrows. Write drought, flood and heat wave on the side with one way to reduce the effects.



The finished board: one change in weather

Mistakes to expect

Learners often think	Put it right
Rain comes before the clouds.	Use the picture cards. Ask what comes first, next and last. Show the video again so learners discover that clouds come before rain.
All places have the same weather at the same time.	Use the story of village A and village B to show that places can have different weather.
We cannot do anything about climate change.	Draw attention to planting trees, farming with care and saving water, and let learners make posters.

Differentiation

Learners who struggle

Use four cards only: hot, cold, windy, wet. Let learners point to the weather outside before they say the word. Give the sentence: Today the weather is ...

Learners who finish early

Ask learners to keep a weather chart for a week and say which day was hottest and which day was wettest. Ask them to suggest one more way to reduce the effects of a flood or a drought.

Hearing or visual impairment

For learners with a visual impairment, let them feel the wind and the sun on their skin, hear the rain and describe each weather aloud. For learners with a hearing impairment, face them, use picture cards and drawings and write the weather words on the board.

No projector, no printing

Use the real weather outside instead of videos. Use drawings on the board in place of picture cards. Make posters from used paper or draw on the ground with a stick.

If time is short

Keep the weather observation, the sun, clouds, rain ordering and the posters. Move the worksheet and the effects stories to the next lesson.

Evaluation

Question or task	A correct answer shows
Bupe is playing on the field. It was sunny, then clouds came and a strong wind started to blow. The teacher asks the class what will happen. (a) What weather comes next. (b) What comes first, sun or rain. (c) Name one kind of weather other than rain.	(a) Rain. (b) Sun. (c) Hot, cold or windy.
One village has had no rain for a long time and another village has had heavy rain for days. The teacher asks the class about the villages. (a) What is the first village having. (b) What is the second village at risk of having. (c) Say one way to reduce these effects.	(a) Drought. (b) Floods. (c) Planting trees, farming with care or saving water.

Homework

At home look at the weather. (a) Say what it is. (b) Draw it. (c) Tell your family one way to care for the environment.

Extra practice with answers

Question	Answer
1. A boy goes out in the morning and feels the air is cold and the sky is clear. His mother asks him about the weather. (a) Is it hot or cold. (b) What does cold weather feel like. (c) Name another kind of weather.	(a) Cold. (b) Cool air on the skin. (c) Hot, windy or wet.
2. Teacher shows pictures of heavy rain and a flooded road, and a dry cracked field. The class talks about them. (a) Which picture shows a flood. (b) Which shows a drought. (c) Which has too little rain.	(a) The heavy rain and flooded road. (b) The dry cracked field. (c) The dry field.
3. A group cuts down many trees near the river to sell wood. The teacher shows the class pictures of good and bad practices. (a) Is cutting many trees good or bad. (b) Name one good practice. (c) Why is it good.	(a) Bad. (b) Planting trees. (c) It helps care for the environment.
4. Two children talk about the weather. One says it is windy and the other says it is hot. They look outside at the clouds. (a) Which one feels air moving. (b) Which feels the sun strongly. (c) Which weather may come after dark clouds.	(a) The one who says windy. (b) The one who says hot. (c) Rain.

Answers to the learners' check-yourself questions

1. Name two kinds of weather.
   Any two of: hot, cold, windy, wet.

2. What weather often comes after dark clouds.
   Rain.
3. What is a long time with no rain called.
   A drought.
4. Name one way to help reduce the effects of climate change.
   Plant trees, farm with care or save water.
5. Mulenga is playing football when a strong wind starts to blow and the sky becomes dark with clouds. His teacher calls him in. (a) What weather is coming. (b) What was the weather before. (c) Which came first, the clouds or the rain.
   (a) Rain. (b) Sunny. (c) The clouds.
6. In one village there was heavy rain for many days and the water covered the fields. In another village there was no rain for a long time. (a) What is the first village having. (b) What is the second village having. (c) Name one thing people can do to care for the land.
   (a) Floods. (b) A drought. (c) Plant trees.

Teacher's reflection

What went well:

What I will change next time:

Learners who need follow-up: