Grade 4 Science and Technology

Term 2 - 42 complete lesson plans

Ready to teach, in the KICD lesson-plan format | 35-minute lessons | PDF and editable Word

ABOUT THIS PACK

42 complete, ready-to-teach Grade 4 Science and Technology lesson plans for Term 2, covering properties of matter, management of solid waste and water conservation.

TOPICS IN THIS PACK

Topic	Name	Lessons
2.1	Properties of matter	14
2.2	Management of solid waste	16
2.3	Water conservation	12

INSIDE EVERY LESSON PLAN

- The specific learning outcomes, key inquiry question, core competencies, values and PCIs, and the resources needed.
- A timed lesson flow: what the teacher does and what the learners do, from introduction to summary.
- The key content (a worked example, notes or a practical with its expected results), then four practice questions with the answers for the teacher.
- The common mistake to watch for, and ideas for learners who need support and for those ready for more.
- A four-level CBC assessment rubric (EE, ME, AE, BE), homework, and a blank reflection space to fill in after teaching.

A TASTE OF LESSON 1

What is matter

By the end of the lesson, the learner should be able to explain what matter is

> **Matter**
> Matter is anything that takes up space and has weight (mass) - this includes almost everything around us: the air we breathe, the water we drink, the desks we sit at, and our own bodies.
> Matter exists in three main states: solid, liquid, and gas.

You also receive this pack as an editable Word file, so you can change any lesson to suit your class before you print it. Lessons follow the order of the KICD curriculum design.

CONTENTS

No.	Lesson	Topic	Page
1	What is matter	2.1 Properties of matter	4
2	Properties of solids	2.1 Properties of matter	7
3	Properties of liquids	2.1 Properties of matter	10
4	Properties of gases	2.1 Properties of matter	13
5	Comparing the three states of matter	2.1 Properties of matter	16
6	Water as an example of all three states	2.1 Properties of matter	19
7	Categorising substances into the three states	2.1 Properties of matter	22
8	Solids in day-to-day life	2.1 Properties of matter	25
9	Liquids in day-to-day life	2.1 Properties of matter	28
10	Gases in day-to-day life	2.1 Properties of matter	31
11	Changes of state: melting and freezing	2.1 Properties of matter	34
12	Changes of state: evaporation and condensation	2.1 Properties of matter	37
13	Staying safe around hot liquids and gases	2.1 Properties of matter	40
14	Summarising the three states of matter	2.1 Properties of matter	43
15	What is solid waste	2.2 Management of solid waste	46
16	What does "decomposable" mean	2.2 Management of solid waste	49
17	What does "non-decomposable" mean	2.2 Management of solid waste	52
18	Classifying waste as decomposable or non-decomposable	2.2 Management of solid waste	55
19	Dangers of solid waste to the environment	2.2 Management of solid waste	58
20	How waste harms animals specifically	2.2 Management of solid waste	61
21	The three Rs: Reduce	2.2 Management of solid waste	64
22	The three Rs: Reuse	2.2 Management of solid waste	67
23	The three Rs: Recycle	2.2 Management of solid waste	70
24	Composting decomposable waste	2.2 Management of solid waste	73
25	Safe disposal of non-decomposable waste	2.2 Management of solid waste	76
26	Special care for hazardous waste	2.2 Management of solid waste	79
27	Practical: a waste management action plan	2.2 Management of solid waste	82
28	A class recycling or reuse activity	2.2 Management of solid waste	85
29	Why proper waste management matters to our community	2.2 Management of solid waste	88
30	Summarising solid waste management	2.2 Management of solid waste	91
31	What is water conservation	2.3 Water conservation	94
32	Where our water comes from	2.3 Water conservation	97

33	How water is wasted at home and school	2.3 Water conservation	100
34	Method: turning off taps when not in use	2.3 Water conservation	103
35	Method: fixing leaks promptly	2.3 Water conservation	106
36	Method: using the right amount of water for a task	2.3 Water conservation	109
37	Method: collecting and reusing water	2.3 Water conservation	112
38	Practical: a school water-use check	2.3 Water conservation	115
39	Why conserving water at home matters	2.3 Water conservation	118
40	Why conserving water at school matters	2.3 Water conservation	121
41	Developing genuine interest in water conservation	2.3 Water conservation	124
42	Summarising water conservation	2.3 Water conservation	127

What is matter

Strand 2.0 Matter > Sub-strand 2.1 Properties of matter | Lesson 1 of 14 | 35 minutes

SCHOOL	TEACHER	DATE
CLASS / STREAM	TIME	ROLL (B / G)

SPECIFIC LEARNING OUTCOME(S)

By the end of the lesson, the learner should be able to explain what matter is

KEY INQUIRY QUESTION(S)

- What are the properties of matter?

CORE COMPETENCIES, VALUES AND PCIS IN THIS LESSON

COMPETENCY	**Communication and collaboration**	Learners explain their thinking to a partner and report their findings to the group.
COMPETENCY	**Digital literacy**	Learners use a phone, tablet or the class computer to explore or check the idea.
VALUE	**Unity**	Learners share materials fairly and work as one team.
PCI	**Health issues - preventive health**	Examples link to healthy habits at home and at school.

LEARNING RESOURCES

A solid object (a stone or block), a liquid (water in a cup), and a way to show gas (a balloon, or steam) | Manila paper and marker pens

ORGANISATION OF LEARNING

Whole class for the introduction and the summary; pairs or groups of four to five for guided practice; individual work for the independent tasks.

KEY WORDS

matter | solid | liquid | gas | property | state

THE LESSON AT A GLANCE

Introduction	Teacher models	Guided practice	On their own	Wrap-up
5 min	8 min	9 min	8 min	5 min

Inside this plan: the step-by-step lesson flow with what the teacher and learners do, the key content, practice questions with answers, a common mistake to watch for, an assessment rubric on the four CBC levels, support and extension ideas, homework and a reflection page.

LESSON FLOW

Stage	Minutes	The teacher	The learners
Introduction	5	Greet the class and ask: "Look around the classroom. Can you name five different things you see?" Take two or three answers, link them to earlier work, then state today's outcome.	Answer the starter question, recall what they already know and read the outcome aloud.
Step 1: Teacher models	8	Work through the worked example on the next page, thinking aloud. Use a solid object (a stone or block), a liquid (water in a cup), and a way to show gas (a balloon, or steam), manila paper and marker pens. Ask learners to predict each step before you show it.	Watch, predict the next step, ask questions and note the key steps in their exercise books.
Step 2: Guided practice	9	Give questions 1 and 2. Move round the groups, ask "How do you know?" and correct errors kindly on the spot.	Work in pairs or small groups, explain each step to a partner and check one another's answers.
Step 3: Independent practice	8	Set questions 3 and 4 for individual work. Mark as you walk round and note who needs help in the next lesson.	Work on their own, then swap books with a partner to check.
Summary and conclusion	5	Ask two or three learners to state the key idea in their own words. Give this exit question and check the answers: "Is air considered matter? Explain."	Say the key idea in their own words and answer the exit question in the exercise book.

WORKED EXAMPLE

Matter

Matter is anything that takes up space and has weight (mass) - this includes almost everything around us: the air we breathe, the water we drink, the desks we sit at, and our own bodies.

Matter exists in three main states: solid, liquid, and gas.

PRACTICE QUESTIONS - WITH ANSWERS FOR THE TEACHER

No.	Question	Answer
1	What is matter?	**Anything that takes up space and has weight (mass)**
2	Name three examples of matter around you right now.	**Answers vary; check they are genuine, real examples.**
3	What are the three main states of matter?	**Solid, liquid, gas**
4	Is air considered matter? Explain.	**Yes - air takes up space and has weight, even though we cannot see it.**

WATCH OUT FOR

Learners think air is "nothing" and not matter, since it is invisible. Use a simple demonstration (a balloon inflating) to show air is real matter.

ASSESSMENT RUBRIC - THE FOUR CBC LEVELS

Level	What the learner can do
Exceeds expectations (EE)	Can explain what matter is confidently and accurately, explain the method used, and apply the idea to new or unfamiliar problems.
Meets expectations (ME)	Can explain what matter is accurately in familiar situations; notices and corrects slips without help.
Approaches expectations (AE)	Can partly explain what matter is, or does so with prompts from the teacher or a partner; makes some errors.
Below expectations (BE)	Cannot yet explain what matter is without direct help; needs the idea taught again with concrete objects.

SUPPORT AND EXTENSION

Learners who need support	Inflate a balloon to show that air takes up space, even though it cannot be seen.
Learners ready for more	Why might it be surprising to learn that air is matter, just like a solid rock? (Answer: Air is invisible and does not feel heavy like a rock, so it is easy to assume it is not really "something" - but it does take up space and has weight)
Inclusion	Seat learners with low vision near the board and read aloud whatever you write; use large, clear, tactile materials; allow extra time; pair with a patient partner; use gestures or Kenyan Sign Language for the key words.

HOMEWORK AND FOLLOW-UP

Redo questions 3 and 4 neatly in the exercise book. Then tell someone at home what you learned about "what is matter" and bring one question of your own to ask next lesson.

TEACHER SELF-CHECK

- Did every learner get a turn to handle materials or explain their thinking?
- Did most learners meet the outcome? Write down the names of those who did not.
- Was the pace right — did any step take too long or too short a time?
- Which competency and value did I see learners showing?
- What will I change the next time I teach this lesson?

REFLECTION ON THE LESSON / SELF-REMARKS

Write this after teaching - what worked, what to change, which learners need follow-up.

Properties of solids

Strand 2.0 Matter > Sub-strand 2.1 Properties of matter | Lesson 2 of 14 | 35 minutes

SCHOOL	TEACHER	DATE
CLASS / STREAM	TIME	ROLL (B / G)

SPECIFIC LEARNING OUTCOME(S)

By the end of the lesson, the learner should be able to describe the properties of solids

KEY INQUIRY QUESTION(S)

- What are the properties of matter?

CORE COMPETENCIES, VALUES AND PCIS IN THIS LESSON

COMPETENCY	**Communication and collaboration**	Learners explain their thinking to a partner and report their findings to the group.
COMPETENCY	**Digital literacy**	Learners use a phone, tablet or the class computer to explore or check the idea.
VALUE	**Unity**	Learners share materials fairly and work as one team.
PCI	**Health issues - preventive health**	Examples link to healthy habits at home and at school.

LEARNING RESOURCES

A solid object (a stone or block), a liquid (water in a cup), and a way to show gas (a balloon, or steam) | Manila paper and marker pens

ORGANISATION OF LEARNING

Whole class for the introduction and the summary; pairs or groups of four to five for guided practice; individual work for the independent tasks.

KEY WORDS

matter | solid | liquid | gas | property | state

THE LESSON AT A GLANCE

Introduction	Teacher models	Guided practice	On their own	Wrap-up
5 min	8 min	9 min	8 min	5 min

Inside this plan: the step-by-step lesson flow with what the teacher and learners do, the key content, practice questions with answers, a common mistake to watch for, an assessment rubric on the four CBC levels, support and extension ideas, homework and a reflection page.

LESSON FLOW

Stage	Minutes	The teacher	The learners
Introduction	5	Greet the class and ask: "If you put a stone in a cup, does it change shape to fit the cup?" Take two or three answers, link them to earlier work, then state today's outcome.	Answer the starter question, recall what they already know and read the outcome aloud.
Step 1: Teacher models	8	Work through the worked example on the next page, thinking aloud. Use a solid object (a stone or block), a liquid (water in a cup), and a way to show gas (a balloon, or steam), manila paper and marker pens. Ask learners to predict each step before you show it.	Watch, predict the next step, ask questions and note the key steps in their exercise books.
Step 2: Guided practice	9	Give questions 1 and 2. Move round the groups, ask "How do you know?" and correct errors kindly on the spot.	Work in pairs or small groups, explain each step to a partner and check one another's answers.
Step 3: Independent practice	8	Set questions 3 and 4 for individual work. Mark as you walk round and note who needs help in the next lesson.	Work on their own, then swap books with a partner to check.
Summary and conclusion	5	Ask two or three learners to state the key idea in their own words. Give this exit question and check the answers: "If you moved a book from a shelf to a desk, would its shape change?"	Say the key idea in their own words and answer the exit question in the exercise book.

WORKED EXAMPLE

Solids
Solids have a fixed (definite) shape and a fixed volume - they do not change shape to fit a container, and they generally cannot be easily compressed (squeezed into a smaller space).
Examples of solids include stones, wood, books, and ice.

PRACTICE QUESTIONS - WITH ANSWERS FOR THE TEACHER

No.	Question	Answer
1	Does a solid have a fixed shape, or does it change to fit its container?	**A fixed shape**
2	Can a solid usually be easily compressed?	**No, generally not**
3	Give two examples of solids.	**Any two of: stones, wood, books, ice**
4	If you moved a book from a shelf to a desk, would its shape change?	**No - a solid keeps its shape regardless of where it is placed.**

WATCH OUT FOR

Learners think all solids are hard. Note that some solids (like a soft sponge) can be squeezed a little, but still hold their overall shape and do not flow like a liquid.