Shapes

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

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

An introduction to shapes for learners with visual impairment. Learners explore shapes with their hands through tactile drawing boards, clay and blocks, and learn the words 2D shape, 3D shape and attribute. One period of 40 minutes. The sub-topic Plane and Solid Shapes follows.

Specific outcomes

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

1. Say what a shape is
2. Say the meaning of 2D shape, 3D shape and attribute
3. Find shapes around them by touch

Prior knowledge

- Learners know common objects such as plates and doors by touch

Teaching and learning materials

- Tactile drawing boards
- Clay or playdough
- Blocks
- A plate, a door and a roof sheet or model
- Chalk and board

References

Ministry of Education (CDC) Grade 2 Mathematics syllabus and module; 25Schools learners' note: Shapes.

Lesson development

Stage and time	Teacher activities	Learner activities
Present **10 min**	Open with the hook: shapes are everywhere around us. The plate we eat from is a circle, the door we walk through is a rectangle, and the roof above us might be a triangle. Say that today we explore shapes with our hands and become shape detectives.	Listen and touch a plate and a door.
Practice **10 min**	Give clay, blocks and tactile boards. Learners feel and name shapes. Explain 2D shape: flat, with only length and width. Explain 3D shape: with length, width and height or depth. Explain attribute: shape, size, colour.	Feel the shapes and say what they notice.
Produce **10 min**	Each learner makes a shape in clay and says whether it is flat or has height, and names one attribute.	Make a shape and describe it.
Closure **10 min**	Ask learners to name one shape they can find at home. Recall the three words: 2D shape, 3D shape and attribute.	Recall the key words.

Teacher's content notes

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

What is a shape

A shape is a self-contained area with a defined boundary, like a square, circle or triangle. It is a geometric figure with length, width and boundaries that enclose it.

Key words

2D shape: flat, with only length and width. 3D shape: has length, width and height or depth. Attribute: characteristics or properties like shape, size and colour.

Why shapes matter

Shapes are essential in art, design and play. Learning shapes gives the child tools to understand the world, communicate effectively and become more independent.

Questions to ask during the lesson

Question	Expected answer
The teacher holds up a plate and asks learners to feel its edge as she asks about the shape of things we eat from. (a) What shape is the plate. (b) What shape is the classroom door. (c) What shape might a roof be.	(a) A circle. (b) A rectangle. (c) A triangle.

The teacher gives a learner a flat card and a block from the desk and asks which one has length, width and height. (a) Which one has height. (b) What kind of shape is it. (c) What is the flat one called.	(a) The block. (b) A 3D shape. (c) A 2D shape.
The teacher asks learners to compare a big red circle and a small blue circle on the table. (a) What is the same. (b) What is different. (c) What do we call these differences.	(a) Both are circles. (b) Size and colour. (c) Attributes.

Worked examples for the board

Naming a shape by touch

Step 1: Hold the object. Step 2: Trace its edge with a finger. Step 3: Say its shape, for example circle.

2D or 3D

Step 1: Feel the object. Step 2: Check if it is flat or has height. Step 3: Say 2D if flat, and 3D if it has height.

Board plan

Write the title Shapes. Write the three words 2D shape, 3D shape and attribute with a short meaning each.

Thing	Shape
Plate	Circle
Door	Rectangle
Roof	Triangle

The finished board

Mistakes to expect

Learners often think	Put it right
A shape is only a drawing on paper.	Let learners feel clay and blocks to show that shapes are in things around us.
Flat and solid shapes are the same.	Let learners compare a flat tactile shape with a block and say which has height.

Differentiation

Learners who struggle

Use one shape at a time, such as a circle plate, and say its name while learners trace it with a finger.

Learners who finish early

Ask learners to find two attributes of a shape: its size and its shape.

Hearing or visual impairment

Give learners real objects to hold, describe each shape aloud, and guide their hands along the edges.

No projector, no printing

Use plates, tins, boxes and clay or mud made into shapes.

If time is short

Keep the hook and the three key words. Make clay shapes at the next lesson.

Evaluation

Question or task	A correct answer shows
The teacher gives Bupe a plate and a flat piece of card shaped like a rectangle and asks her to explain. (a) Which one is a circle. (b) Which is a rectangle. (c) Name one attribute of each.	(a) The plate. (b) The card. (c) Shape, size or colour.
The teacher gives Mwamba a block and a flat card and asks him to describe them. (a) Which has height. (b) What is that kind of shape called. (c) What is the flat one called.	(a) The block. (b) A 3D shape. (c) A 2D shape.

Homework

Njavwa looks around her kitchen at home and finds a plate, a box of matches and a tin. Her mother asks her to tell her about the shapes. (a) What shape is the plate. (b) What is an attribute. (c) Name one more thing she can find with a shape.

Extra practice with answers

Question	Answer
1. Mulenga holds a tin and a flat piece of card in class and the teacher asks him to say which is flat and which has height. (a) Which is flat. (b) Which has height. (c) Name one attribute.	(a) The card. (b) The tin. (c) Shape, size or colour.
2. Chanda is asked to find a rectangle in the classroom. She feels along the wall, the desk and the door. (a) Name a rectangle she may find. (b) Name its attributes. (c) What is a shape.	(a) The door. (b) Shape, size and colour. (c) An area with a boundary.
3. Bupe moulds a circle from clay and makes it round and thick like a ball. Her friend asks if it is still flat. (a) Is it 2D or 3D. (b) Why. (c) What would make it 2D.	(a) 3D. (b) It has height. (c) Make it flat.
4. Mwamba lists the shapes he found at home to his teacher. He found a plate, a door and a roof. (a) Which is a circle. (b) Which is a rectangle. (c) Which might be a triangle.	(a) The plate. (b) The door. (c) The roof.

Answers to the learners' check-yourself questions

1. What is a 2D shape.
   A flat shape with only length and width.
2. What does a 3D shape have.
   Length, width and height or depth.
3. Name one attribute of a thing.
   Shape, size or colour.
4. What shape is a plate.
   A circle.
5. Mulenga walks into his classroom and touches the door, the plate on his desk and the roof sheet he sees through the window. His teacher asks him to name each shape. (a) What shape is the door. (b) What shape is the plate. (c) What shape might the roof be.
   (a) A rectangle. (b) A circle. (c) A triangle.
6. Chanda is given clay at school and told to make a shape that is flat with only length and width, then a shape with height too. (a) What do we call the flat shape. (b) What do we call the shape with height. (c) Name one attribute she can describe.
   (a) A 2D shape. (b) A 3D shape. (c) Shape, size or colour.

Teacher's reflection

What went well:

What I will change next time:

Learners who need follow-up: