

Cambridge Primary Mathematics 0096 · Stage 2

CM2-B10

Shaping Up Summer (Math in Nature)

Gg Geometrical reasoning, shapes and measurements · A 30-minute lesson with a 15-minute short version.

Learning intention

For learners

We are learning to find 2D and 3D shapes in familiar objects.

Success criteria

- I can show 2d and 3d shapes in nature with objects.
- I can draw or diagram the same maths.
- I can record my answer and explain how the story supports it.
- I can use TWM.06 while I work.

Learning objectives

2Gg.08

Find 2D and 3D shapes in familiar objects.

TWM.06

Classifying: sort objects into groups by their maths properties.

30-minute lesson

Governed source lesson: Which Flat Shape Does This Solid Show You · Concept · Telling a solid shape from the flat shape it looks like

1

Find the maths in the story

4 min**2Gg.08**

Read-along: Listen with highlighting and pause at the passage used by “Which Flat Shape Does This Solid Show You”.

Teacher: Set the ball on white paper so the light throws its shadow across the sheet, and draw round the edge of that shadow. Lift the ball away and look at what you drew. Lay the circle tile on the drawing and say whether it sits inside the line, outside it, or on it all the way round.

Learners: Notice the story evidence and say the maths question in their own words.

2

Model it with objects

5 min**2Gg.08**

Read-along: Replay the source passage while building the quantities, shapes or measures it supplies.

Teacher: Stand the tube on one end in the light and draw round its shadow. Now lay the same tube down on its side and draw round that shadow next to the first one. Try the circle tile on both drawings and the rectangle tile on both. Say which tile fits which drawing, and say what you did to the tube in between the two.

Learners: Build a concrete model and check that each part matches the read-along.

3

Try the concrete task

6 min

2Gg.08

Read-along: Keep the relevant story page visible as the class tests the model.

Teacher: Put the ball back in the light, turn it as far as you like, and draw round its shadow a second time. Turn it again and draw a third. Put those three drawings beside the tube's two and say which solid changed what it showed you and which one did not. Say it about the drawings on the desk, not about what you expected.

Learners: Change or compare the objects, then explain what stayed the same and what changed.

4

Draw the maths

5 min

2Gg.08

Read-along: Return to the same story evidence before learners make a pictorial record.

Teacher: Model a clear drawing, diagram or mark for the concrete work without adding a quantity the story does not supply.

Learners: Draw the model and label the important parts with maths language.

5

Record and solve

6 min

2Gg.08

Read-along: Use the read-along once more as the evidence check for the abstract record.

Teacher: Pick any one solid off the tray and hold it up. Tell your partner the name of the solid first and the name of the flat shape its shadow made second, in that order. Put a finger on the drawing as you say the second name. Your partner picks a different solid and does the same, and you say whether their two names match the drawings on the sheet.

Learners: Record the result with suitable numbers, words or symbols and link it back to the picture.

6

Reflect and convince

4 min

TWM.06

Read-along: Show the source passage and invite a final evidence-based check.

Teacher: Name the Thinking and Working Mathematically focus: Classifying: sort objects into groups by their maths properties.

Learners: Use the concrete model, drawing and record together to justify the answer.

Read-along routes

Shared maths question

How does Shaping Up Summer (Math in Nature) help us explore 2d and 3d shapes in nature?

Evidence required

Show the story evidence, a concrete model, a pictorial record and a matching abstract record.

Solo

Read independently, pause at the named source passage and complete the shared maths model.

Supported

Read with the audio and use the teacher's pause points, objects and response frame.

Listening

Listen with the text highlighted, build the same model and give the explanation orally.

Assessment check

The learner meets 2Gg.08 by showing and explaining the objective through the story model. Evidence for TWM.06 is visible when the learner demonstrates this Thinking and Working Mathematically focus: Classifying: sort objects into groups by their maths properties.

15-minute short version

1

Story question

4 min**2Gg.08**

Read-along: Listen to the passage used by “Which Flat Shape Does This Solid Show You”.

Teacher: Set the ball on white paper so the light throws its shadow across the sheet, and draw round the edge of that shadow. Lift the ball away and look at what you drew. Lay the circle tile on the drawing and say whether it sits inside the line, outside it, or on it all the way round.

Learners: Name the maths question and the story evidence.

2

Build, draw and record

7 min**2Gg.08**

Read-along: Replay the evidence while learners move from objects to a drawing and a record.

Teacher: Stand the tube on one end in the light and draw round its shadow. Now lay the same tube down on its side and draw round that shadow next to the first one. Try the circle tile on both drawings and the rectangle tile on both. Say which tile fits which drawing, and say what you did to the tube in between the two.

Learners: Make one concrete model, draw it and add numbers, words or symbols.

3

Check and explain

4 min

TWM.06

Read-along: Return to the source page for the final check.

Teacher: Ask learners to demonstrate: Classifying: sort objects into groups by their maths properties.

Learners: Explain why the model answers the story question.

Learner activity

Concrete, pictorial, abstract: 2D and 3D shapes in nature

Use the read-along evidence for every part. Do not add a number or measure that the story does not give.

1. Build the story maths with objects.

2. Draw the same model and label its important parts.

3. Record the result with suitable numbers, words or symbols.

4. Explain how your evidence uses TWM.06.
