

Lesson 62 • 3D shapes: stack, roll and slide

Learning objectives

Children will:

- understand that 3D objects can stack, roll or slide.
- identify which motion each 3D shape can make.
- recognise that flat faces and curved surfaces make different motions possible.

Australian Curriculum Content Descriptions

Measurement and Geometry

Shape

ACMMG022 Recognise and classify familiar two-dimensional shapes and three-dimensional objects using obvious features; focus on geometric features and describing shapes and objects using everyday words such as 'corners', 'edges' and 'faces'.

Location and transformation

ACMMG023 Understand the meaning and importance of words such as 'under' when giving and following directions; interpret and follow directions.

Key vocabulary

stack, flat, face, sphere, curvy, round, surface, cube, cylinder, cone, point, roll, slide, flat, solid, 2D, 3D, pyramid, square, triangle, circle, rectangle, far away, near, behind, in front, on, next to, sides, corners, smaller, larger, left, above, right, under

Extra assistance

The movement of 3D shapes can be lots of fun to explore with manipulation of blocks and everyday objects. Start by posing the question of whether a shape can roll, slide or stack. Students should predict an answer, then test it out using standard shape blocks and also everyday objects in that shape. Give them a slope to roll things down and a smooth flat surface for sliding and stacking.

Classroom activities

Make it!

Give each student some playdough or plasticine or clay, some matchsticks or Paddle pop sticks, and some paper. They use the modelling materials to make two spheres, cones, cylinders and cubes. Have them attempt to stack their shapes. See if their shapes will roll down a slope. Ask them to try to slide their shapes across their desk. Discuss results, particularly choices of materials and how they affect the movements.

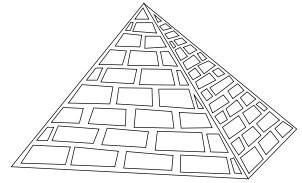
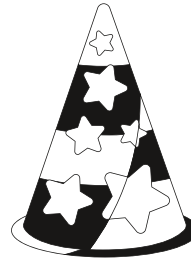
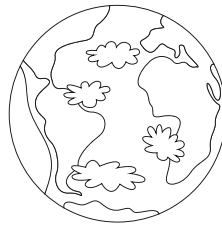
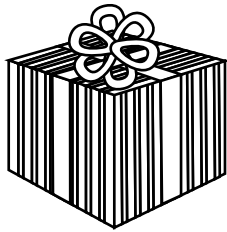
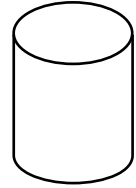
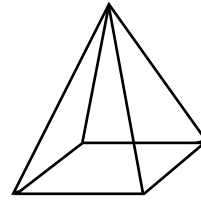
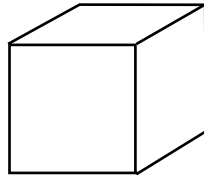
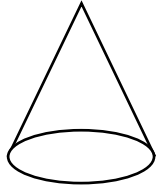
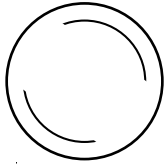
Which Hat?

Place three hats on the floor with the labels *stack*, *slide* and *roll*. Have a set of pictures of 3D shapes or a set of objects in standard 3D shapes. Each student chooses one and works out which hat it must go in. Discuss their choices.

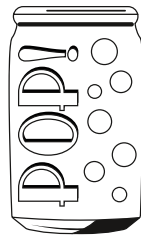
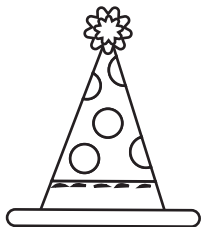
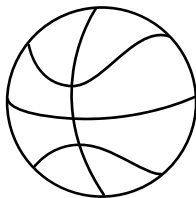
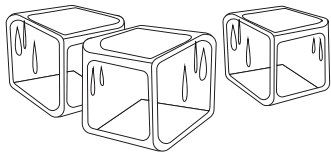
Mathseeds Lesson sequence	TEACH Content and skills	PRACTICE Children will:	APPLY
<i>Animated Lesson:</i> Stack, roll or slide?	Introduce the idea that 3D shapes can stack, roll and slide. Song: <i>Let's Build a Tower</i>	observe 3D shapes attempting to stack, roll and slide.	Worksheet 1 Stack
<i>Match:</i> Four in a Row, Sides and Corners	Recognise whether a shape is flat or solid. Count the number of sides and corners on a 2D shape. Identify the number of flat faces on a 3D object.	match the labels <i>2D</i> and <i>3D</i> to the correct shapes. Answer the question <i>How many sides/corners?</i> Match numbers to a 3D object with that many flat faces.	Worksheet 2 Roll
<i>Vocabulary:</i> 3D Words, Shape Sort, Smaller or Larger Number	Know the names for 2D and 3D shapes. Recognise which number is smaller or larger.	match shape names to their objects. Label two numbers <i>smaller</i> and <i>larger</i> .	Worksheet 3 Slide
<i>Find:</i> Position, Colour a Pattern, Above and Below	Comprehend position vocabulary. Identify colours in a pattern.	differentiate between items based on position. Complete the colour pattern. Select the item in the position described.	Worksheet 4 Check
<i>Read:</i> Book	Read aloud book.	listen, follow the reading and read along.	Mathseeds book 62: Stack and Roll

Name _____

1 Match the 3D objects to the pictures.

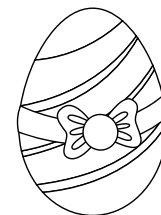


2 Draw lines to match.



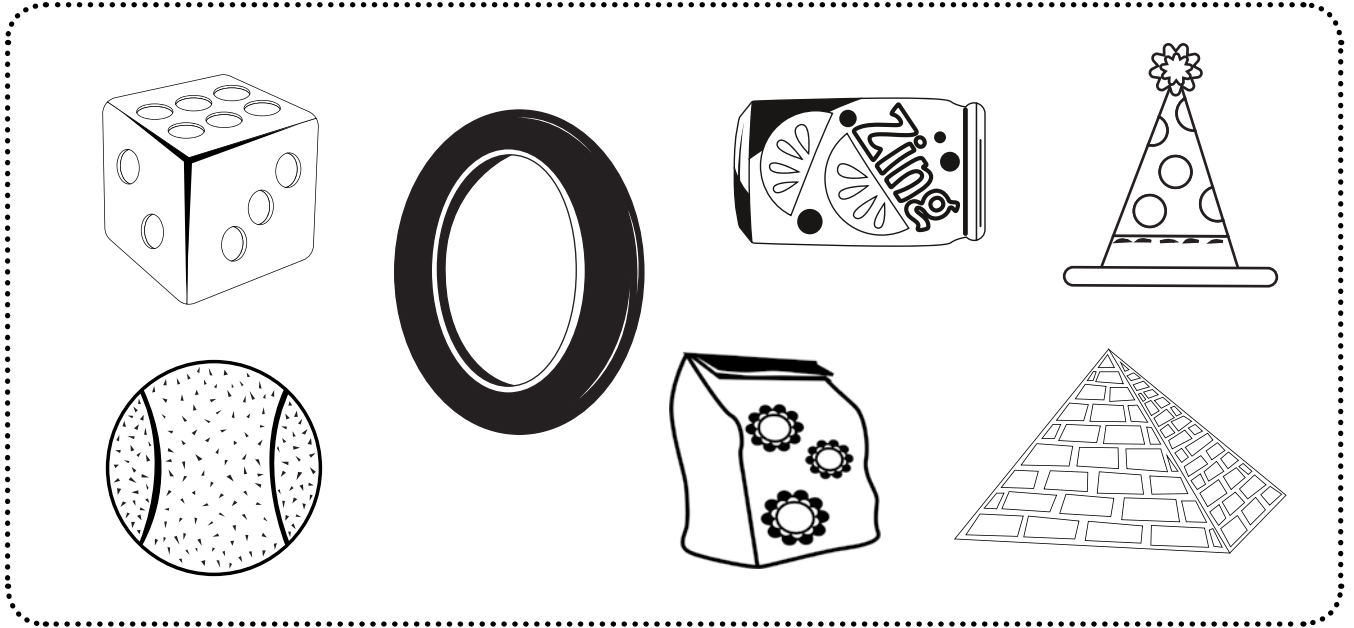
can stack

cannot stack



Name _____

1 Circle the objects that roll when pushed.



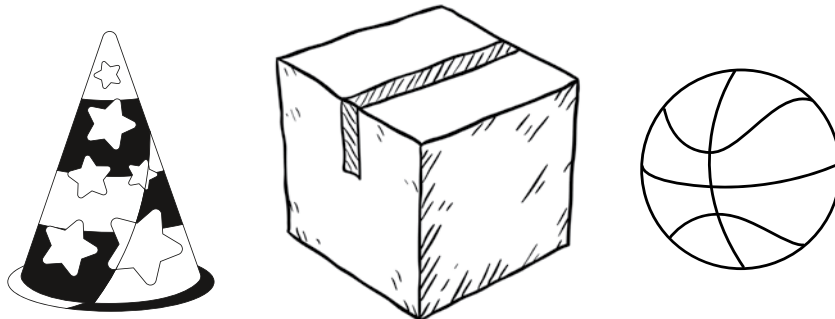
2 Finish each sentence.

can cannot roll stack

Objects with flat faces can _____.

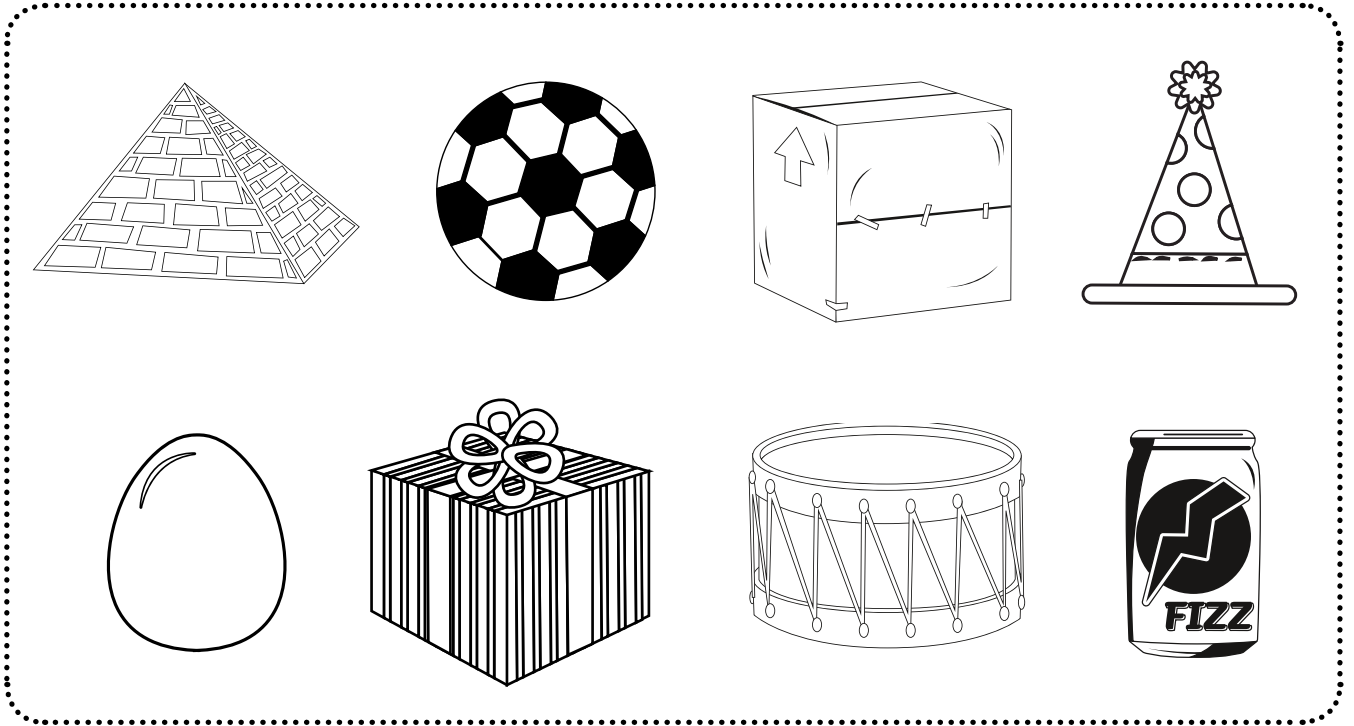
Objects with curved surfaces can _____.

Objects with a point on top _____ stack.

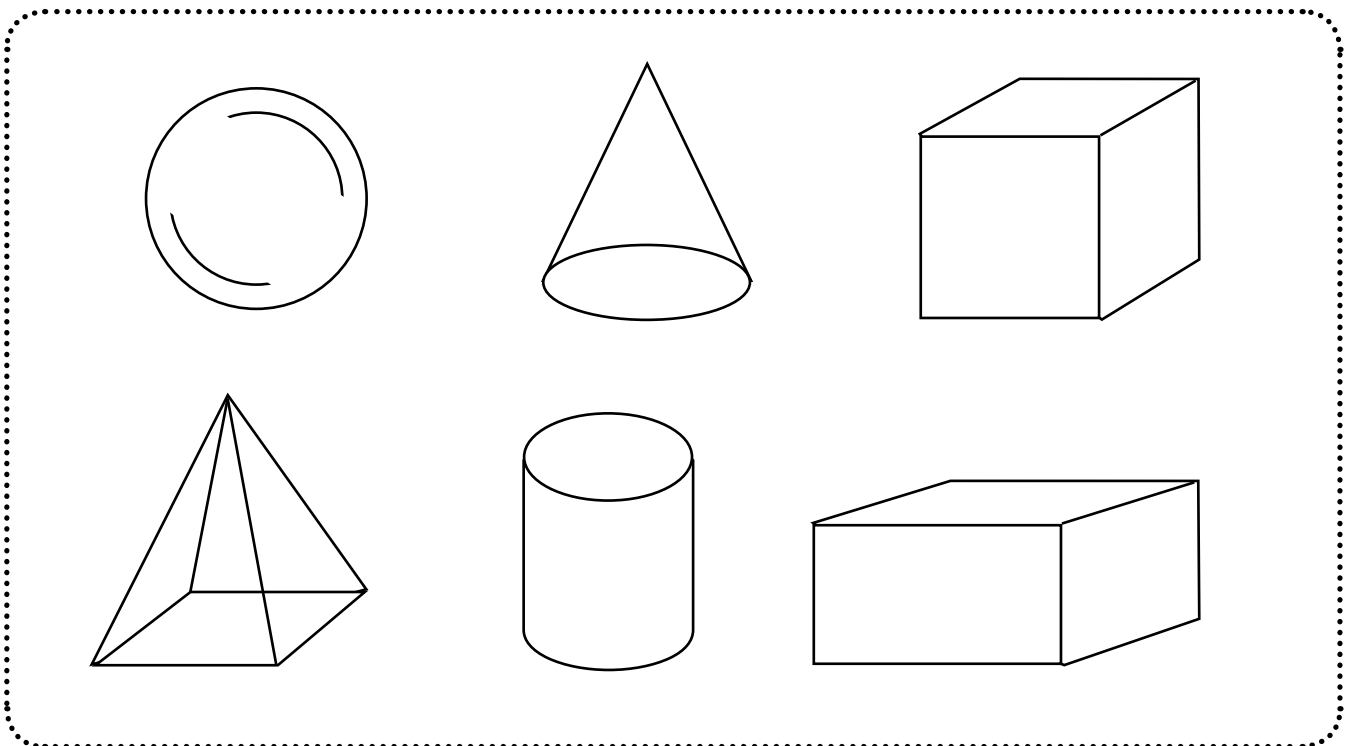


Name _____

1 Circle objects that slide when pushed.

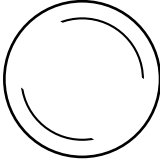
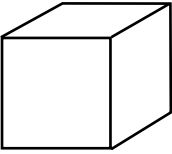
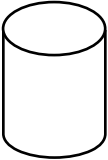
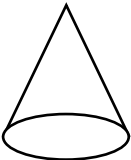


2 Colour blue if it rolls, red if it slides, yellow if it rolls and slides.



Name _____

1 Complete the table. ✓ for yes ✗ for no.

	can roll	can slide	can stack
			
			
			
			

2 Colour the 3D objects.

