



#### Topic: Shape

#### Comparing and sorting objects

##### Lesson concepts

-  **Shapes** — Language (describing, naming, comparing)
-  **Shapes** — Sorting (appearance, function)

Today students will:

- compare and sort three-dimensional objects based on visual and functional features.

#### Resources

##### Find and prepare

Collection of objects to represent familiar three-dimensional objects, for example: cereal boxes, cones, cans, balls  
Sorting circles (large circles on the floor drawn with chalk or hula hoops)

#### Key terms

corner, edge, face

For definitions and explanations of terms, please see the [Glossary](#).

## Lesson

### Introduce the lesson

#### Note

The following language is important to highlight and develop throughout this lesson:

objects, shapes, same, different, similar, sort, match, models, sides, curved, straight, describe, stack, roll, box, ball, tube

### Describe common objects by features and function

Explain that students will use describing words for shapes when investigating what different objects can do.

Show students an image of 'Humpty Dumpty' and say the nursery rhyme with the students.



#### *Humpty Dumpty*

*Humpty Dumpty sat on the wall,  
Humpty Dumpty had a great fall!  
All the kings' horses and all the kings' men,  
Couldn't put Humpty together again.*

Re-enact the rhyme with students.

#### Focus questions

Q: *Why do you think Humpty fell off the wall?*

A: For example: He was round so he rolled off.

Q: *How would you describe his shape?*

A: For example: a long ball shape

Q: *Why would that object fall off the wall?*

A: For example: It doesn't have a flat face.

Q: *What other objects might fall off the wall?*

A: For example: oranges, balls

Q: *What object could he have been so he wouldn't fall?*

A: For example: a box shape

Q: *Why would rolling or not rolling be important if you put something on a wall?*

A: For example: It could roll off and break.

Ask students to:

- demonstrate the terms 'roll' and 'not roll'
- look around the room for objects that they predict will and will not fall off a wall (that is, objects that have curved surfaces and those that have a flat face).

## Compare common objects

### The fall test

Explain that students will explore objects that will and will not fall off a wall.

Show students how to test whether or not an object will roll off a wall by placing an object on the edge of a table or desk.

Ask students to:

- gather objects from around the room to test their ability to roll
- experiment by placing each object, one at a time, on the desk or table
- observe whether it rolls or doesn't roll off the desk or table.

### Note

Ensure that students use mathematical language as they experiment with the objects.

Discuss the findings.

### Focus questions

Q: *What happened when you used this object?*

A: For example: It stayed still/ it rolled off the desk.

Q: *Why did it fall/not fall?*

A: For example: It doesn't have any flat surfaces/it has flat surfaces.

Q: *How could you describe this shape?*

A: For example: a ball/a box shape

## Justify sorts using the language of shape

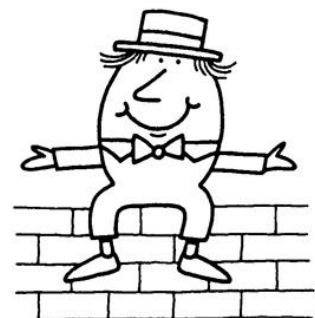
Ask students to sort the objects into sorting circles labelled 'rolls' and 'doesn't roll' on the floor.

Discuss the similarities between the shapes (flat and curved faces).

Match three-dimensional models with the collections.

Ask students to think about the wall that Humpty sat on.

I'm going to build a block wall and place the objects on the top. Then I will watch what they do.



### Focus questions

Q: *What objects would be best to build a wall? Explain.*

A: For example: Blocks because they have flat surfaces that will not roll.

Q: *Could you make a wall using ice-cream cones? Why?*

A: For example: No, they have a curved surface.

Q: *How would we find out?*

A: For example: We could try building it.

Q: *What would happen if you put this object (indicate a different three-dimensional object) on the bottom?*

A: For example: You can't build a wall because it has a curved surface.

Q: *Can you make a wall using a mixture of objects? How?*

A: Personal response required.

## Select objects based on shape features

### Stack up

Introduce the word 'stack' and explain what it means (that is, to pile items neatly).

Provide students with a range of different objects.

Ask students to:

- investigate the features of the objects
- discuss which objects can make a stable wall.

### Focus questions

Q: *How are these objects similar?*

A: For example: They all have flat surfaces.

Q: *How are they different?*

A: For example: Some are long and thin, others are short and wide.

Q: *What is similar about objects that are good for stacking?*

A: For example: They all have flat surfaces.

Q: *What is similar about shapes that are not good for stacking?*

A: For example: They all have curved surfaces.

Ask students to:

- select objects that they predict will be able to stack
- use language of shape and comparison (for example: flat, curved, roll, stack) as they select appropriate stackable objects
- build a wall from the chosen objects.

### Focus questions

Q: *Which objects were good for stacking?*

A: For example: box shapes

Q: *How are they similar?*

A: For example: They all have flat surfaces.

Q: *What else did you find out?*

A: For example: Cans can stack if you pile them up end to end.