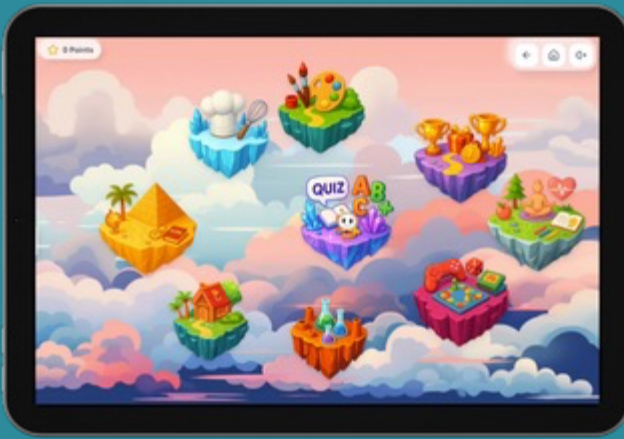


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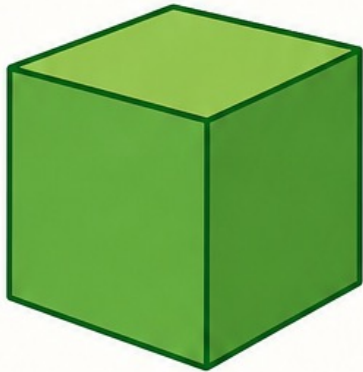
Features of 3D Objects - Year 1

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3D Object Features

cube



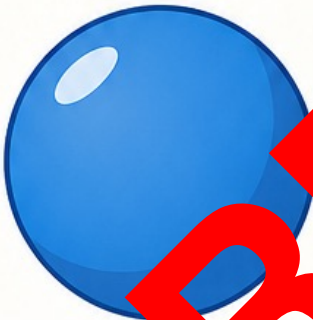
6 flat faces • 12 edges • 8 vertices

rectangular prism



6 flat faces • 12 edges • 8 vertices

sphere



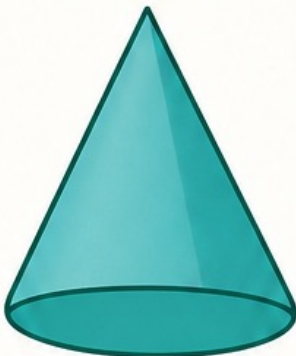
1 curved surface • 0 edges • 0 vertices

cylinder



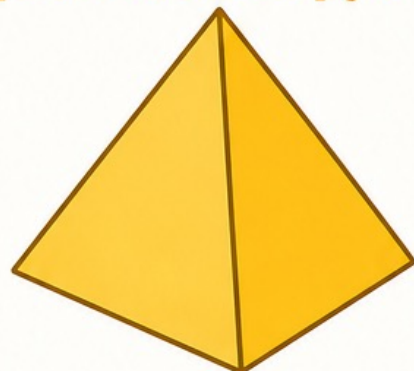
2 flat faces + 1 curved surface •
2 curved edges • 0 vertices

cone



1 flat face + 1 curved surface •
1 curved edge • 1 vertex

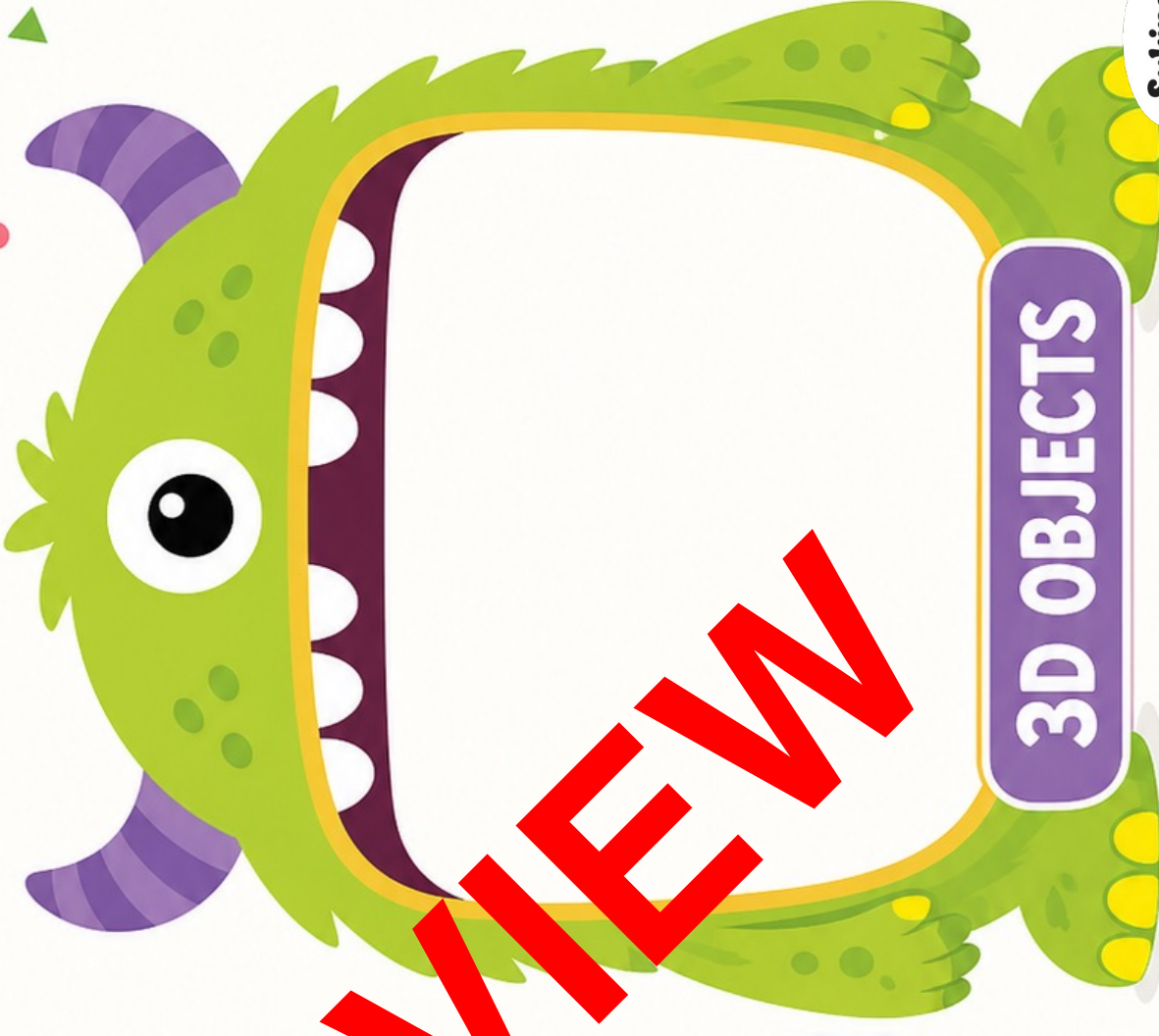
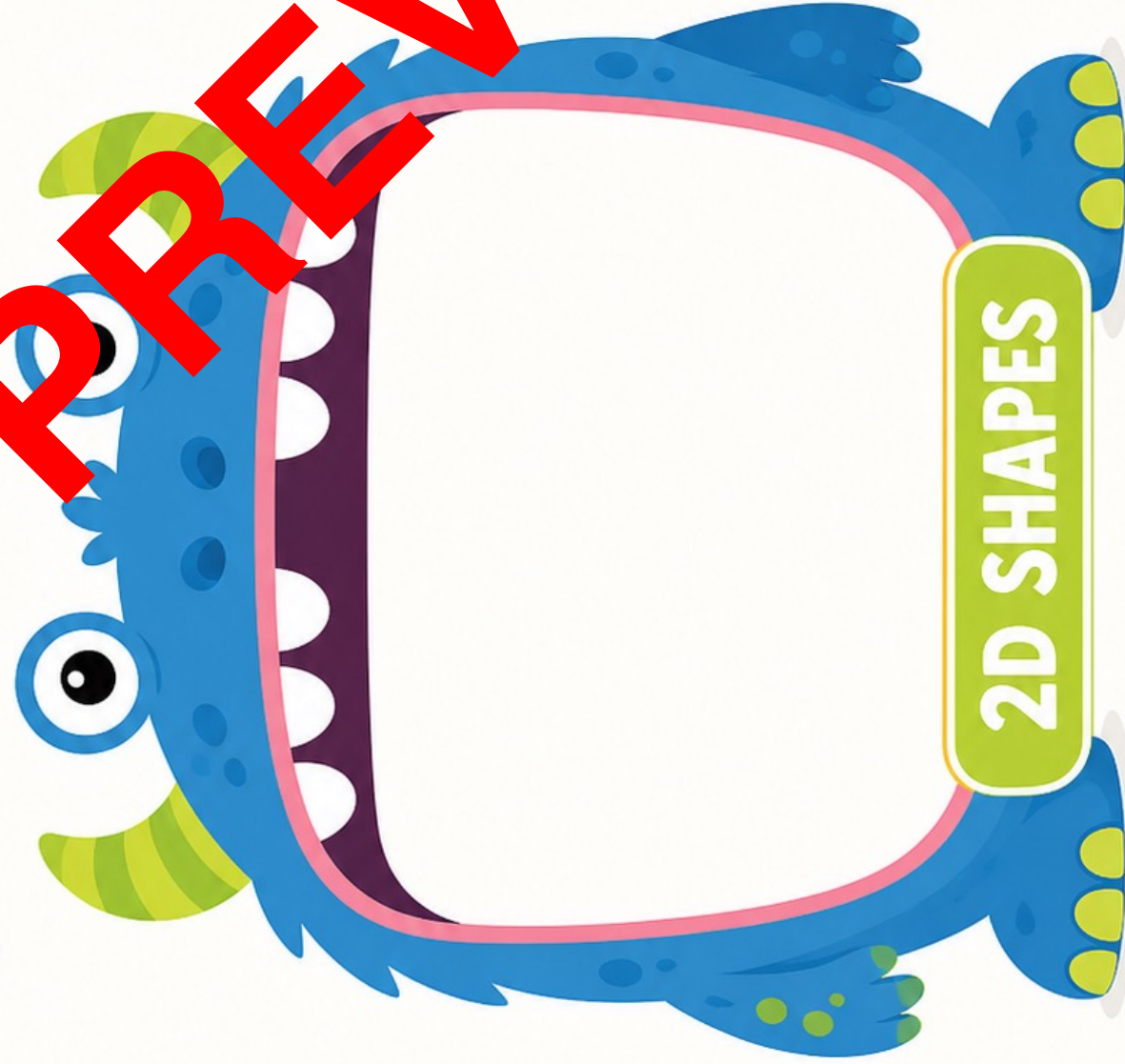
square-based pyramid



5 flat faces • 8 edges • 5 vertices

Monster Sort

Cut out the cards. Feed each card to the matching monster.



Monster Sort Cards

Cut on the dashed lines. Then feed each card to the matching monster.



Who Am I? Feature Challenge!

How to Play

1. Cut out the clue cards.

2. Place the cards face down.

3. Read one clue aloud.

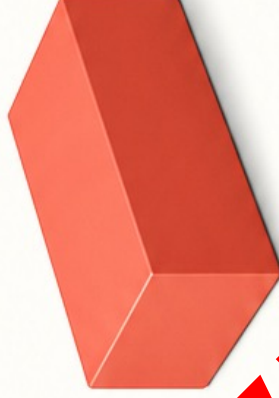
4. Cover the matching object.

5. First to cover three objects wins!

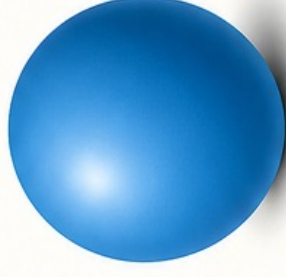
Game Board A



cube



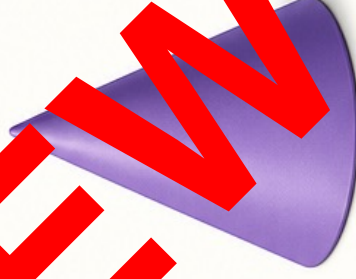
rectangular prism



sphere



cylinder



cone



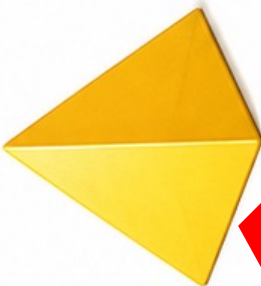
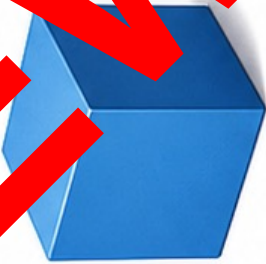
square-based pyramid

Who Am I? Feature Challenge

Game Board B

		
cone	sphere	cube
		
cylinder	triangular prism	rectangular prism

Game Board C

		
square-based pyramid	cylinder	sphere
		
cube	cone	triangular prism

Who Am I? Clue Cards

Cut on the dashed lines.

I have 12 edges and 8 vertices. All my faces are squares.



I have 6 equal square faces.



A die has my shape.



I have 6 rectangular faces.



I have 12 edges and 8 vertices. Some faces are different sizes.



A cereal box has my shape.



I have no edges and no vertices.



I have 1 flat circular face and 1 vertex.



I have 1 flat circular face and 1 vertex.

A party hat has my shape.



I have 4 triangular side faces.



I have 5 faces, 8 edges and 5 vertices.



I have 2 triangular faces.



I have 3 rectangular faces.



A tent can have my shape.

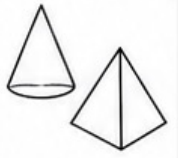
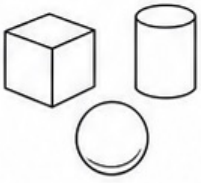


I am perfectly round.



I have a square base.





Meet the 3D Objects

Name: _____

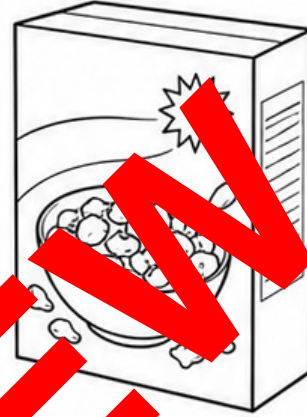
Date: _____

Write the 3D object name for each real-life object.

1



2

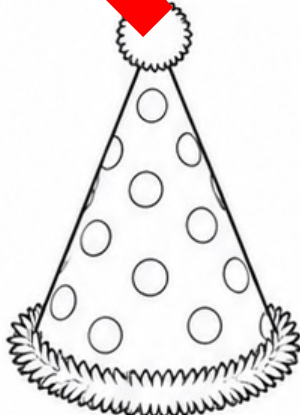


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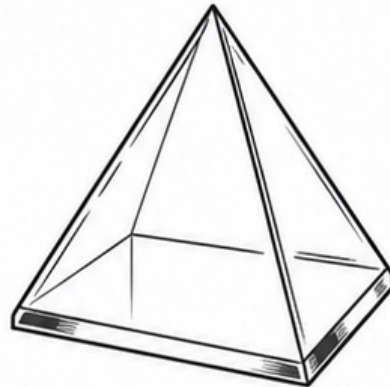




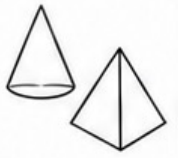
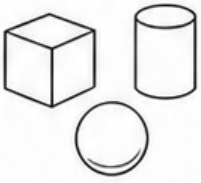
5



6



PREVIEW



Meet the 3D Objects

Name: _____

ANSWERS

Date: _____

Write the 3D object name for each real-life object.

1



cube

2



rectangular prism

3



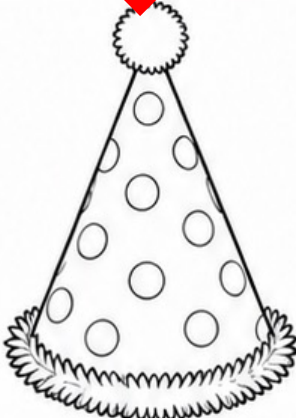
sphere

4



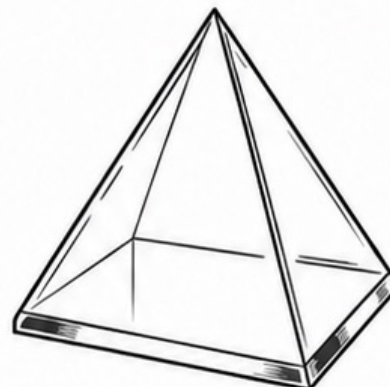
cylinder

5

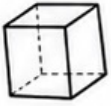


cone

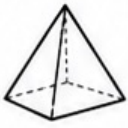
6



square-based pyramid



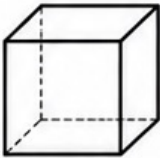
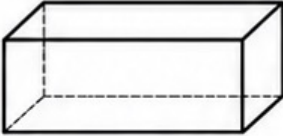
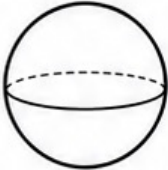
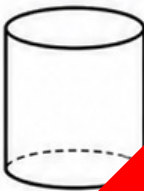
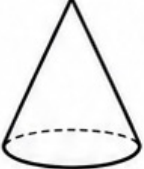
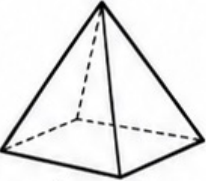
Faces, Edges and Vertices



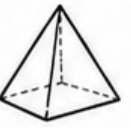
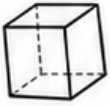
Name: _____

Date: _____

Complete the table. Count carefully.

Object	Faces / surfaces	Edges	Vertices
 cube			
 rectangular prism			
 sphere			
 cylinder			
 cone			
 square-based pyramid			



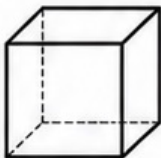
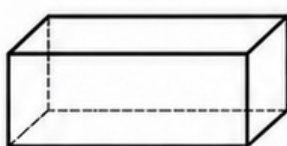
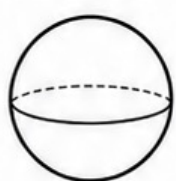
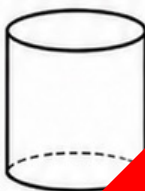
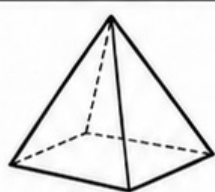


Faces, Edges and Vertices

Name: ANSWERS

Date: _____

Complete the table. Count carefully.

Object	Faces / surfaces	Edges	Vertices
 cube	6 flat	12	8
 rectangular prism	6 flat	12	8
 sphere	1 curved	0	0
 cylinder	2 flat + 1 curved	2	0
 cone	1 flat + 1 curved	1	1
 square-based pyramid	5 flat	8	5

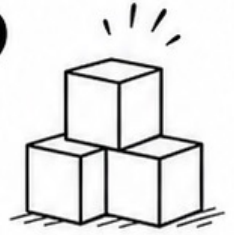


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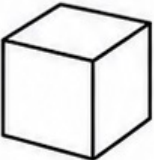
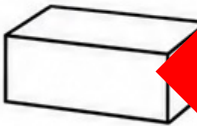
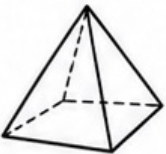
Date: _____



Roll, Stack or Slide?



Tick all the actions each object can do.

Object	Roll	Stack	Slide
 sphere	☐	☐	☐
 cylinder	☐	☐	☐
 cone	☐	☐	☐
 cube	☐	☐	☐
 rectangular prism	☐	☐	☐
 square-based pyramid	☐	☐	☐

Choose one object. Explain how you know what it can do.

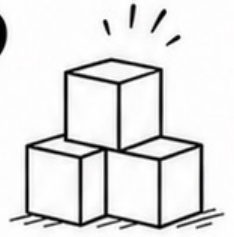


Name: **ANSWERS**

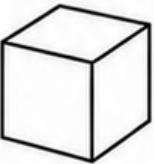
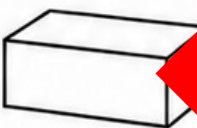
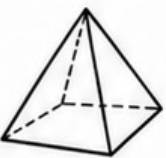
Date: _____



Roll, Stack or Slide?



Tick all the actions each object can do.

Object	Roll	Stack	Slide
 sphere	☒	☐	☐
 cylinder	☒	☒	☒
 cone	☒	☐	☒
 cube	☐	☒	☒
 rectangular prism	☐	☒	☒
 square-based pyramid	☐	☐	☒

Choose one object. Explain how you know what it can do.

A cylinder can roll on its curved surface and stack on its flat faces.

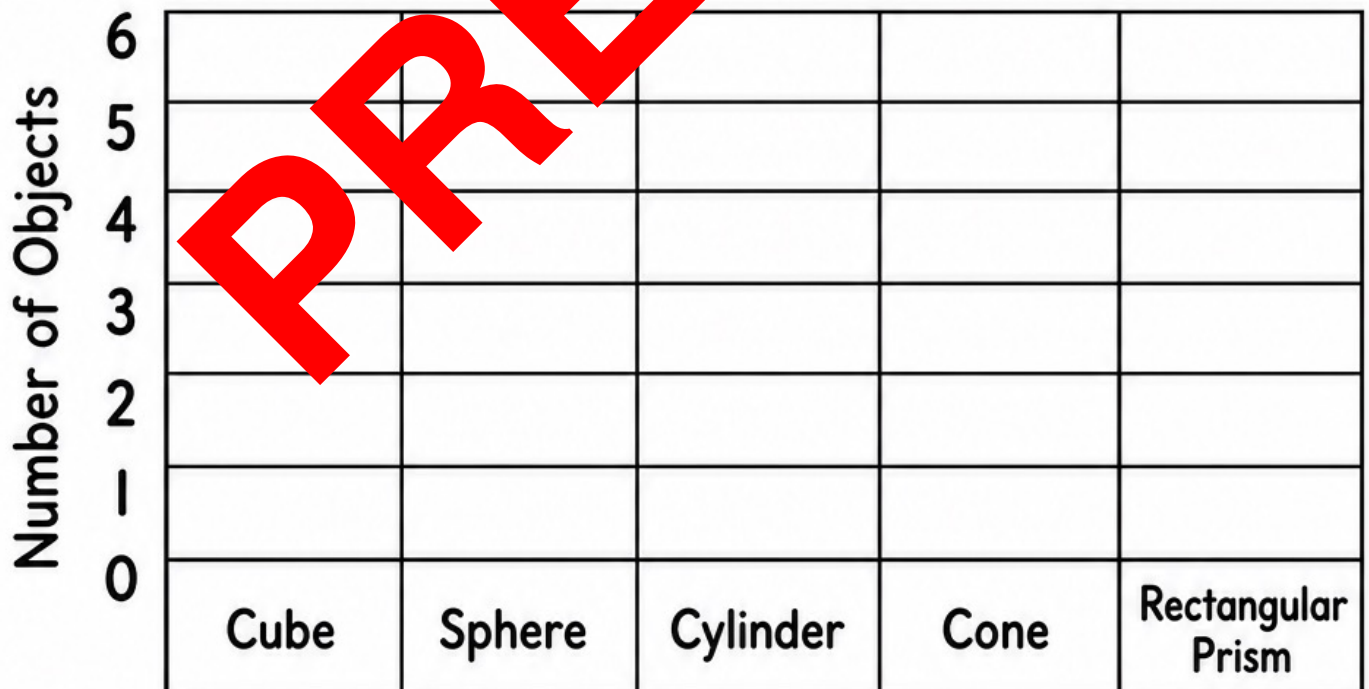
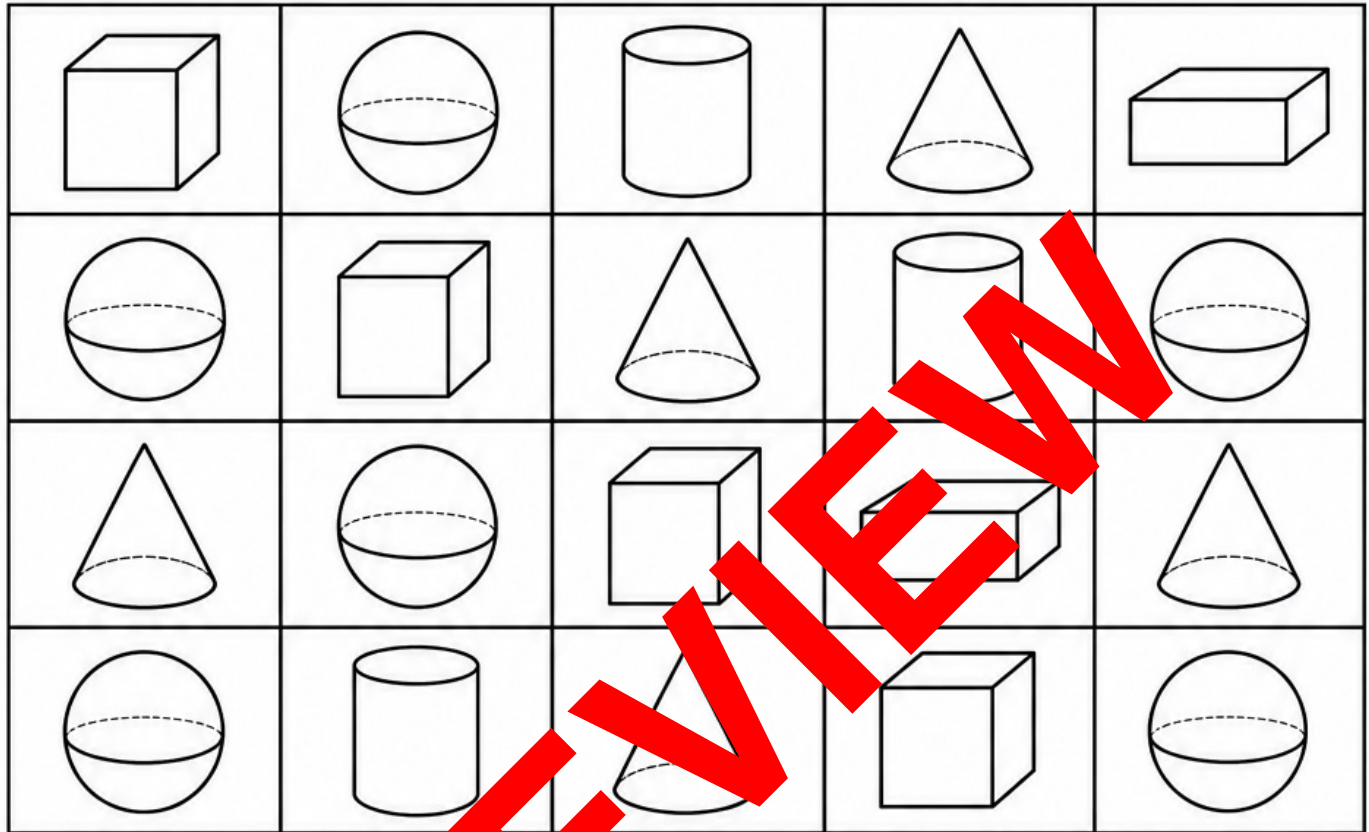


Count and Graph 3D Objects

Name: _____

Date: _____

Count the objects. Then complete the graph.



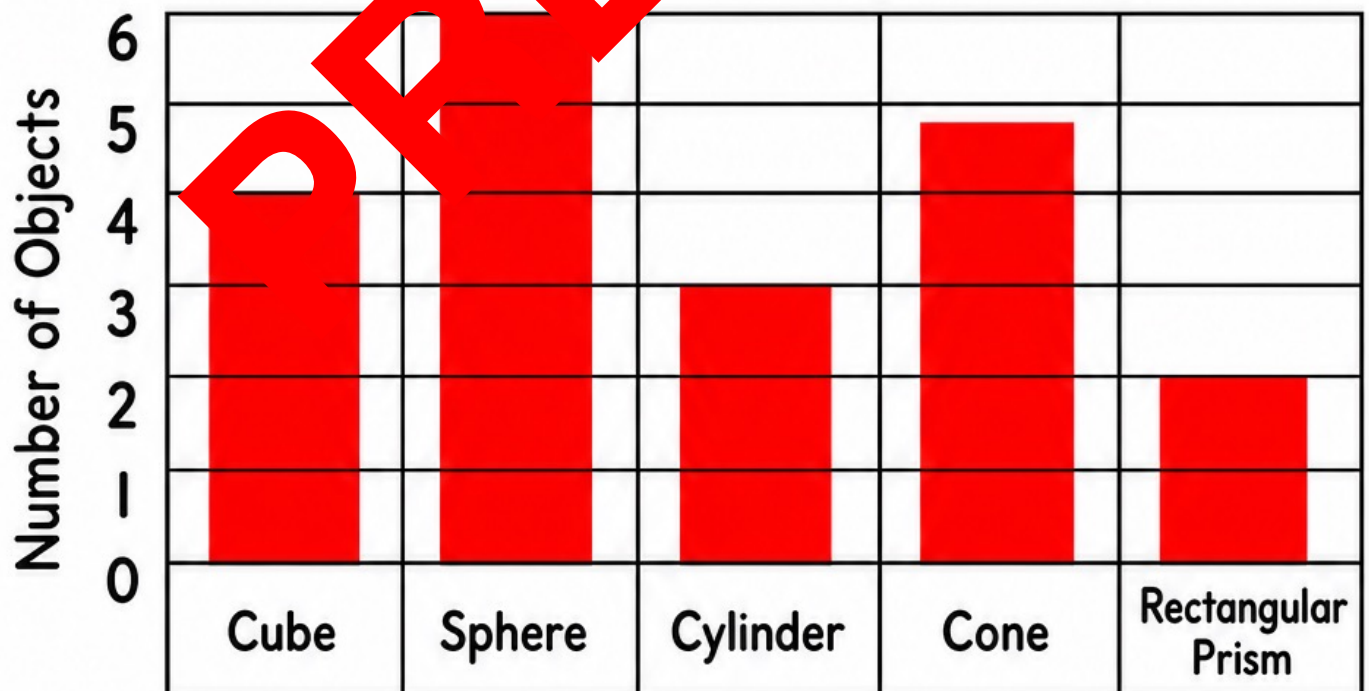
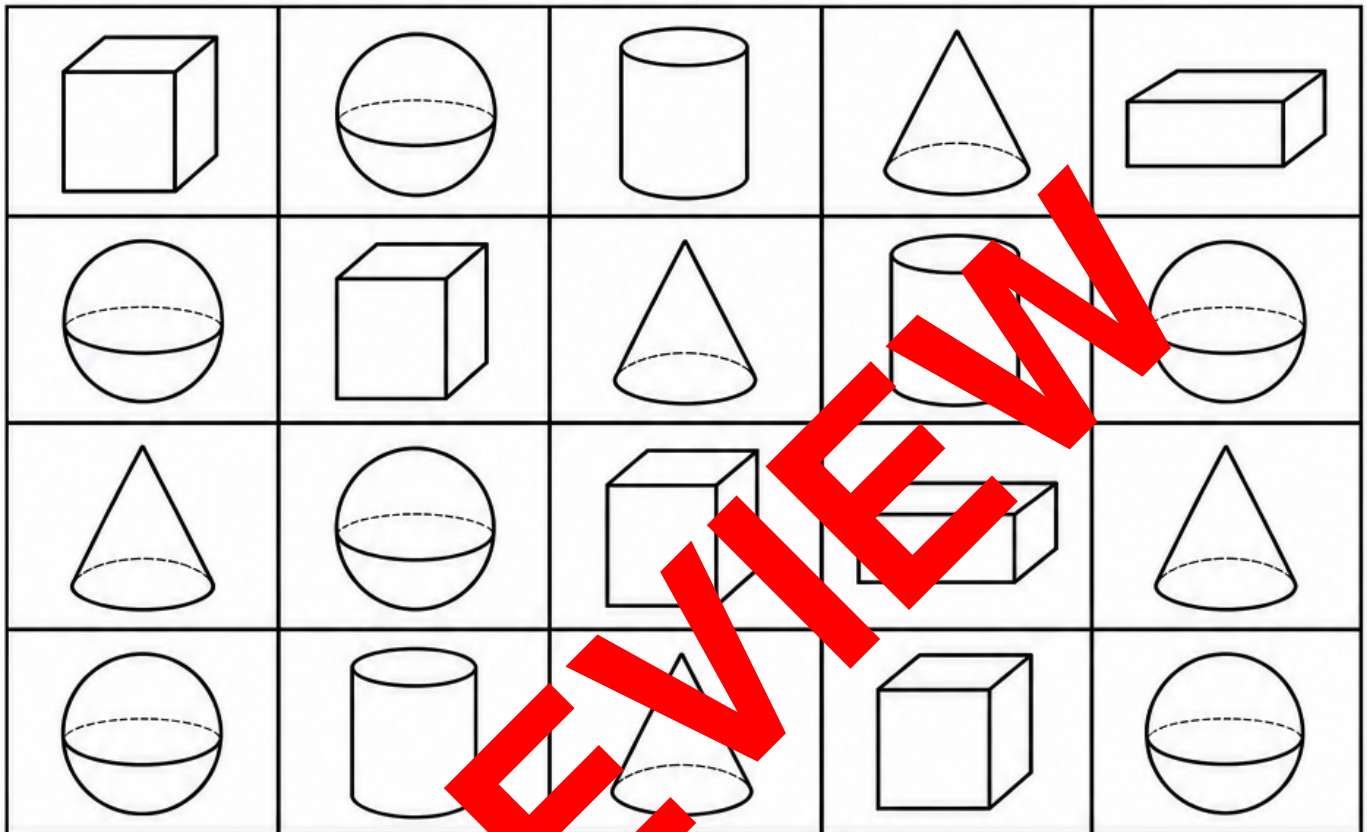
Which object appears most? _____

Count and Graph 3D Objects

Name: _____

Date: _____

Count the objects. Then complete the graph.

Which object appears most? Sphere

3D Object Detectives

Name: _____ Date: _____

Read each clue. Write the 3D object.

1. I have 6 equal square faces.

2. I have no edges and no vertices.

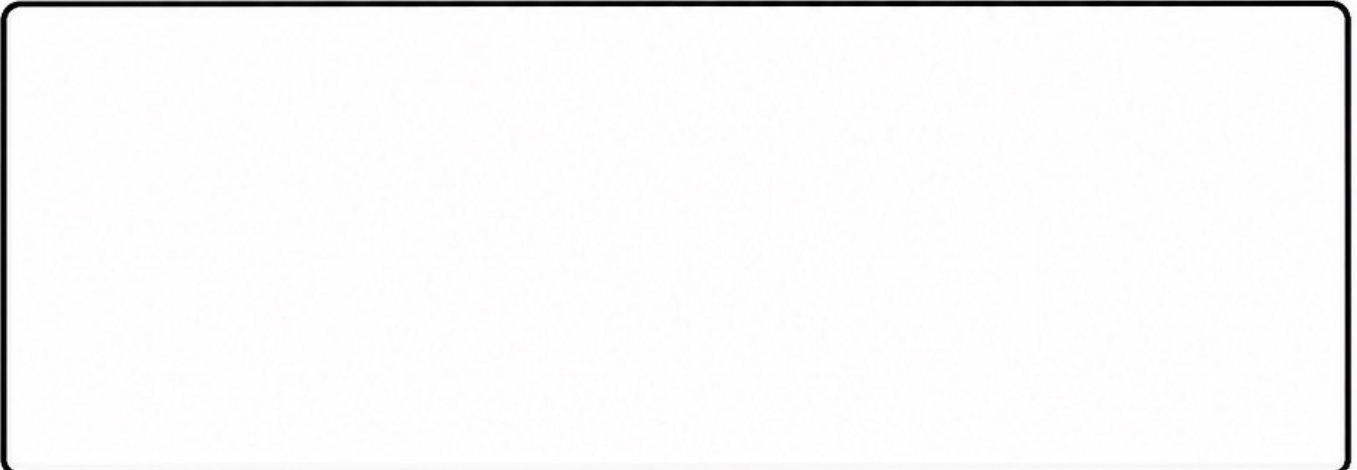
3. I have 2 flat circular faces.

4. I have 1 flat circular face and 1 vertex.

5. I have a square base and 4 triangular faces.

6. I have 2 triangular faces and 3 rectangular faces.

Draw one real-life example of a rectangular prism.



3D Object Detectives

Name: _____

Date: _____

Read each clue. Write the 3D object.

1. I have 6 equal square faces.

Cube

2. I have no edges and no vertices.

Sphere

3. I have 2 flat circular faces.

Cylinder

4. I have 1 flat circular face and 1 vertex.

Cone

5. I have a square base and 4 triangular faces.

Square-based pyramid

6. I have 2 triangular faces and 3 rectangular faces.

Triangular prism

Draw one real-life example of a rectangular prism.



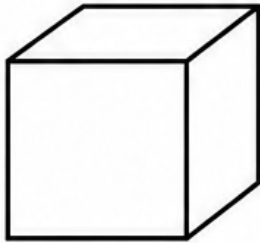
cereal box

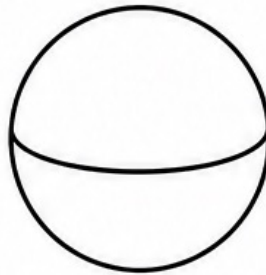
3D Object Museum Challenge

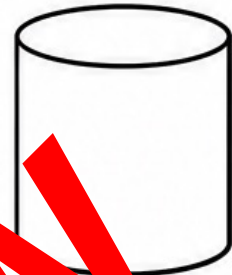
Name: _____ Date: _____

Show what you know about 3D objects.

1. Name these objects.







2. A cube has _____ edges and _____ vertices.

3. True or false? A sphere has vertices.

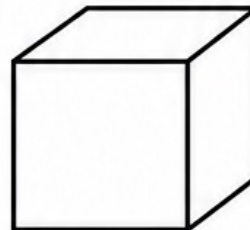
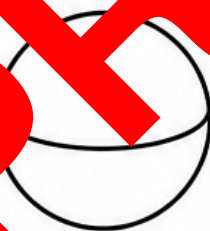


True



False

4. Circle the object that can roll.



5. Which object has 2 flat circular faces?

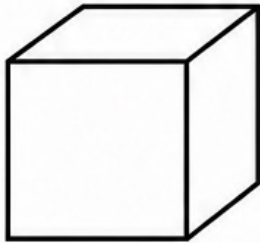
6. Explain one way a cone and a cylinder are different.

3D Object Museum Challenge

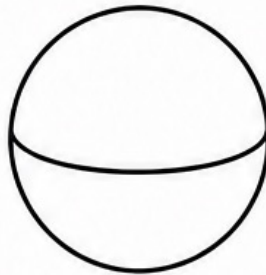
Name: _____ Date: _____ **ANSWERS**

Show what you know about 3D objects.

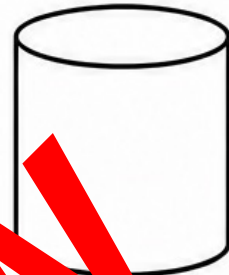
1. Name these objects.



Cube



Sphere



Cylinder

2. A cube has 12 edges and 8 vertices.

3. True or false? A sphere has vertices.

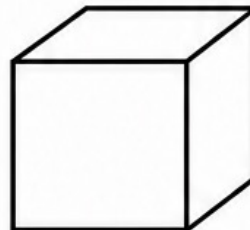


True



False

4. Circle the object that can roll.



5. Which object has 2 flat circular faces?

Cylinder

6. Explain one way a cone and a cylinder are different.

A cone has 1 flat circular face and 1 vertex.

A cylinder has 2 flat circular faces and
no vertices.

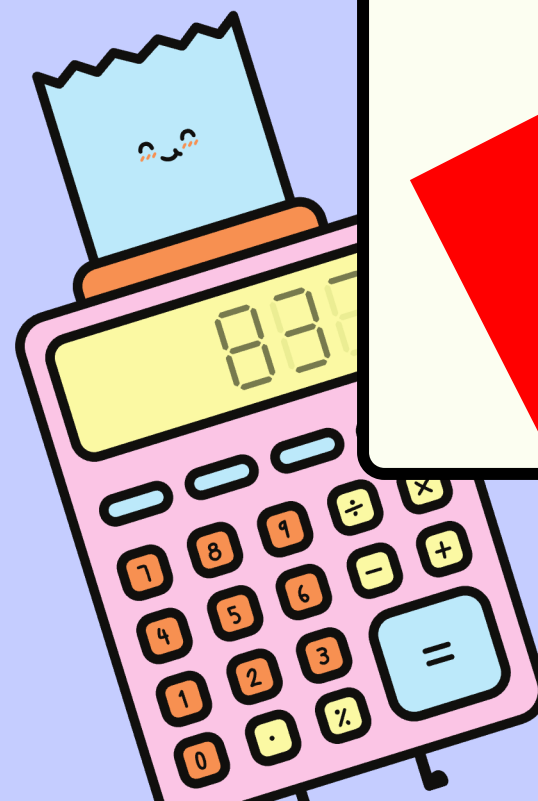
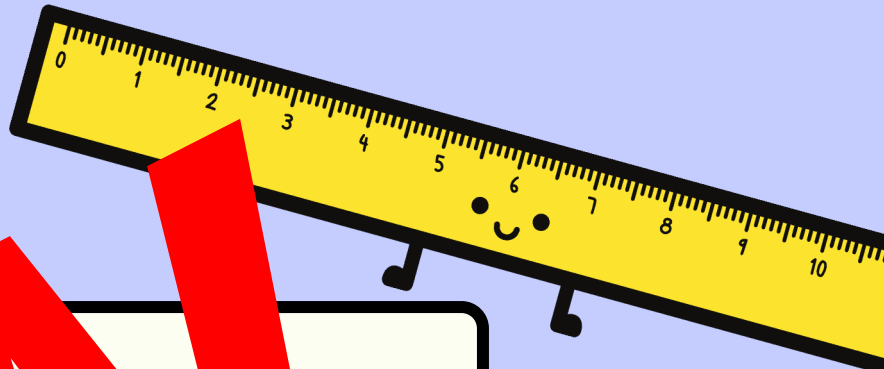
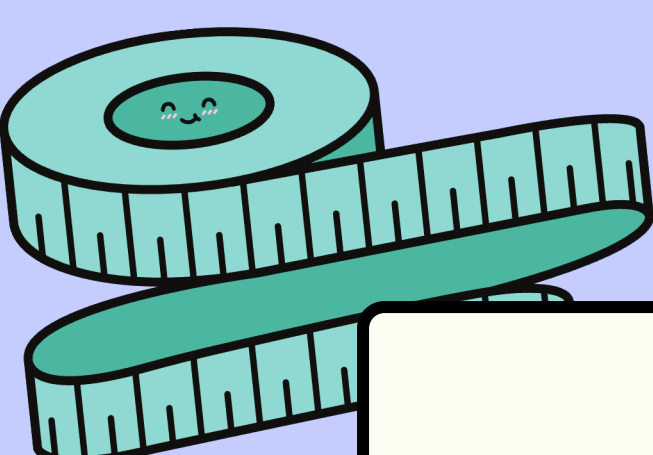
Features of 3D Objects Rubric

Student: _____ Date: _____

CRITERION	BEGINNING	DEVELOPING	ACHIEVING	CONFIDENT	EXCEEDING
Names 3D objects	Names 1 object with help.	Names some familiar objects.	Names familiar objects correctly.	Names and compares objects.	Names, compares and gives examples.
Identifies features	Finds 1 feature with help.	Finds some features.	Identifies faces, edges and vertices.	Explains feature counts accurately.	Uses features to justify comparisons.
Classifies objects	Sorts with full help.	Sorts some objects.	Sorts by observable features.	Sorts in more than one way.	Creates and explains a sorting rule.
Explains reasoning	Gives a word or picture.	Gives a simple reason with prompts.	Explains using feature cards.	Links more than one feature.	Explains clearly and considers exceptions.
Works independently	Needs step-by-step support.	Works with frequent prompts.	Completes and checks the task.	Works independently and checks.	Works independently and explains clearly.

Overall achievement: _____

Teacher comment: _____



PREVIEW

Features of
Objects

Learning Goal

We are learning to describe and compare our 3D objects.

Success criteria

- I can name faces, edges and vertices.
- I can describe faces, edges and vertices.
- I can sort objects and explain my rule.



2D Shapes and 3D Objects

A 2D shape is flat. It has length and width.

A 3D object is solid. It has length, width, and height.

We can hold and touch a 3D object to see its different surfaces.



Feature Words

FACE — a flat surface

CURVED SURFACE — a rounded surface

EDGE — where two surfaces meet

VERTEX — a corner where edges meet

One corner is a vertex. More than one are vertices.



Cube

A cube has:

- 6 equal square faces
- 12 edges
- 8 vertices

can stack on top of each other and some gift boxes are shaped like cubes.



Rectangular Prism

A rectangular prism has:

- 6 flat faces
- 12 edges
- 8 vertices

can stack on a slide. A cereal box is a familiar rectangular prism.



Sphere

A sphere has:

- 1 curved surface
- no flat faces
- 0 edges
- 0 vertices

It is round. A ball is shaped like a sphere.



Cylinder

A cylinder has:

- 2 flat circular faces
- 1 curved surface
- 2 curved edges
- 0 vertices

It can roll, stack and slide. A can is shaped like a cylinder.



Cone

A cone has:

- 1 flat circular face
- 1 curved surface
- 1 curved edge
- 1 vertex

can roll on a circular face and surface. A party hat is shaped like a cone.



Square-Based Pyramid

A square-based pyramid has:

- 1 square base and 4 triangular faces
- 5 flat faces altogether
- 8 edges
- 5 vertices

It can stand and can rest on its square base.



Triangular Prism

A triangular prism has:

- 2 triangular faces and 3 rectangular faces
- 5 flat faces altogether
- 9 edges
- 6 vertices

A can be shaped like a triangular prism.



3D Objects Around Us

Look at an object, then use its features to identify it.

ball → sphere

drink can → cylinder

party hat → cone

cereal box → rectangular prism

ice cream cone → cone



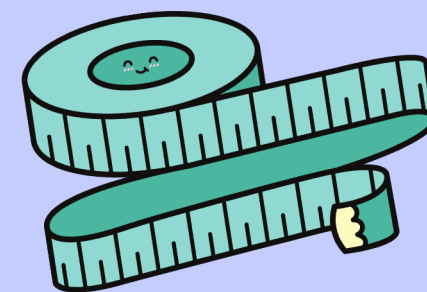
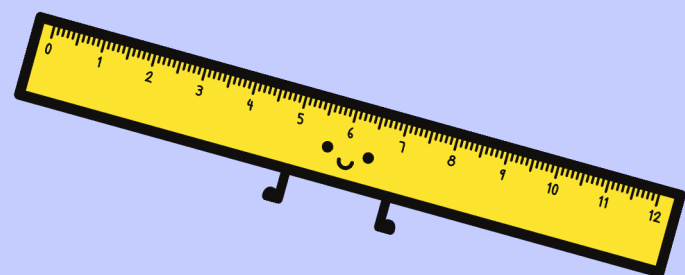
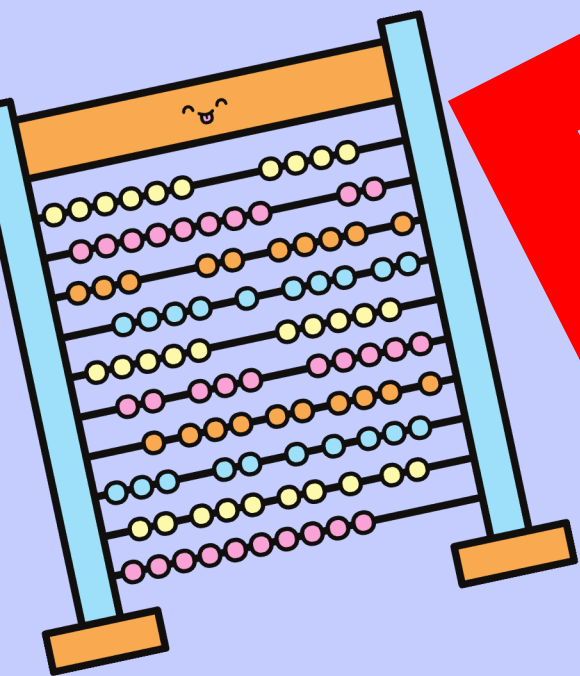
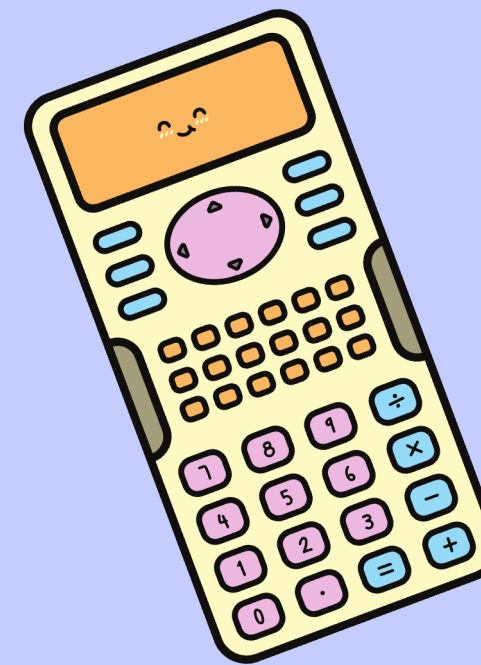
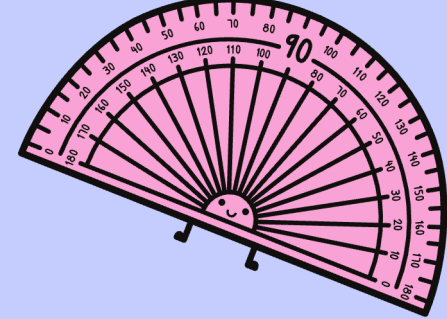
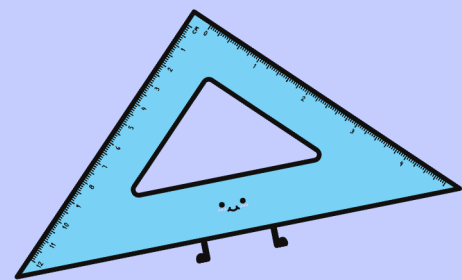
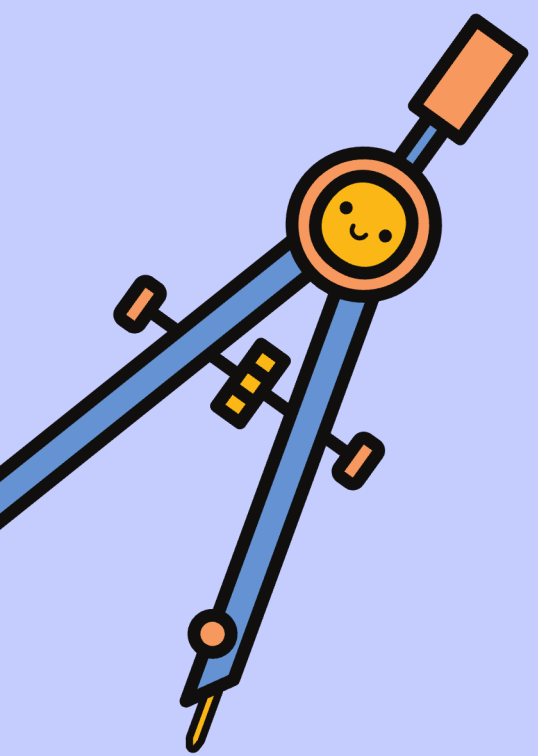
Sort, Explain and Test

Choose a sorting rule. You might sort by:

- flat or curved surfaces
- number of faces, edges, vertices
- whether an object can roll, stack or slide

Explain your sorting using feature words. Then test each object to check your thinking.





Question 1

Which is a 3D object?

- A. Circle
- B. Cube
- C. Triangle
- D. Square



Answer 1

B. Cube

A cube is a solid 3D object. A circle, triangle, and square are flat 2D shapes.



Question 2

True or false?

A sphere has one curved surface and no vertices.

PREVIEW



Answer 2

True.

A sphere has one continuous curved surface. It has no flat faces, edges or vertices.



Question 3

How many faces, edges and vertices does a cube have?

PREVIEW



Answer 3

A cube has:

- 6 square faces
- 12 edges
- 8 vertices



Question 4

Which real-life object is most like a rectangular prism?

A. Basketball

B. Cereal box

C. Party hat

Drink can



Answer 4

B. Cereal box

A cereal box has flat rectangular faces, edges and vertices like a rectangular prism.



Question 5

Which statement about a cylinder is correct?

- A. It has no flat faces.
- B. It has 2 flat circular faces and 1 curved surface.
- C. It has 1 vertex.
- D. It is not round.



Answer 5

B. It has 2 flat circular faces and 1 curved surface.

A cylinder can roll on its curved surface and stack on its flat faces.



Question 6

Explain one way a cone and a cylinder are different.

PREVIEW



Suggested Answer 6

A cone has 1 flat circular face and 1 vertex.

A cylinder has 2 flat circular faces and no vertices.

Other accurate features or comparisons are also correct.



Question 7

How many faces, edges and vertices does a square-based pyramid have?

PREVIEW



Answer 7

A square-based pyramid has:

- 5 flat faces
- 8 edges
- 5 vertices

faces are 1 square and 4 triangles.



Question 8

A triangular prism has two faces shaped like triangles. What shapes are its other three faces?

PREVIEW



Answer 8

Rectangles.

A triangular prism has 2 triangular faces and 3 rectangular faces.



Question 9

Which actions can a cube do?

A. Roll only

B. Stack and slide

C. Roll and stack

D. Roll, stack and slide



Answer 9

B. Stack and slide

A cube has flat faces, so it can stack and slide. It does not roll smoothly.



Question 10

Mia sorts a sphere and a cone together because both can roll. Is her rule useful? Explain.



Suggested Answer 10

Yes. Both objects have curved surfaces, so both can roll.

A sphere rolls freely. A wheel rolls in a curved path because it also has a flat face and a curved surface.



