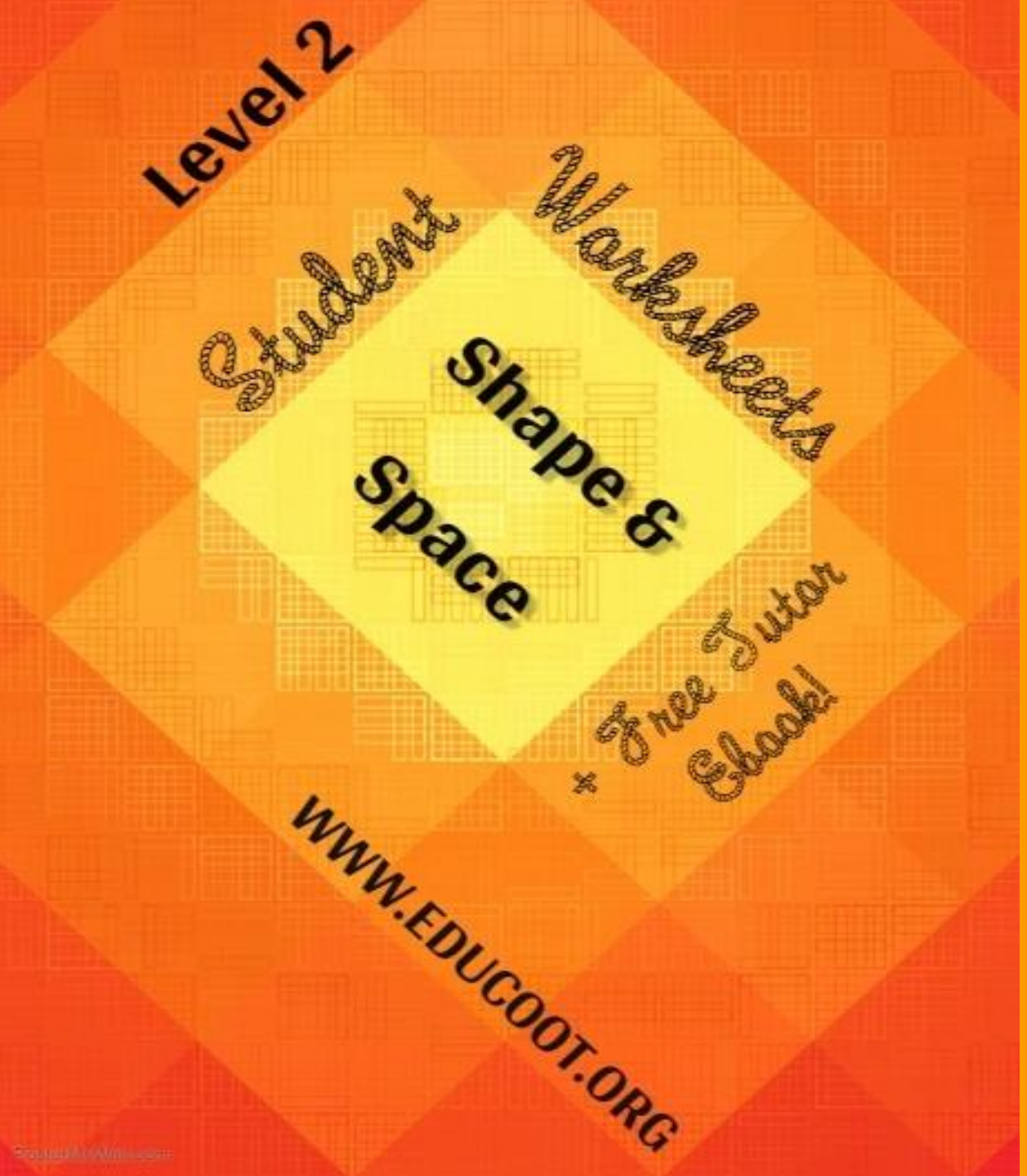


SHAPE & SPACE

Level 2

Learning outcomes

1. Name common shapes and forms in everyday life, e.g. circles, rectangles, cubes, cylinders and spheres.
2. Describe the properties of common 2D shapes and 3D forms, e.g. number of faces, edges, area, and volume.
3. Recognise the relationship between area and volume.
4. Sort 2D and 3D shapes and forms in relation to size.

Common shapes and forms in everyday life

EXTRA

2D shapes

- 2D shapes are **flat shapes**.
- Any shape that can be laid flat on a piece of paper is a 2D shape.
- They have two dimensions - **length and width**.
- They can also be called **plane shapes**.
- Examples: **squares, triangles, and circles**
- 2D stands for 2-dimensional

Objects

EXTRA

Objects can be described according to their **shape** and **form**.

Examples:

The table is **round**.

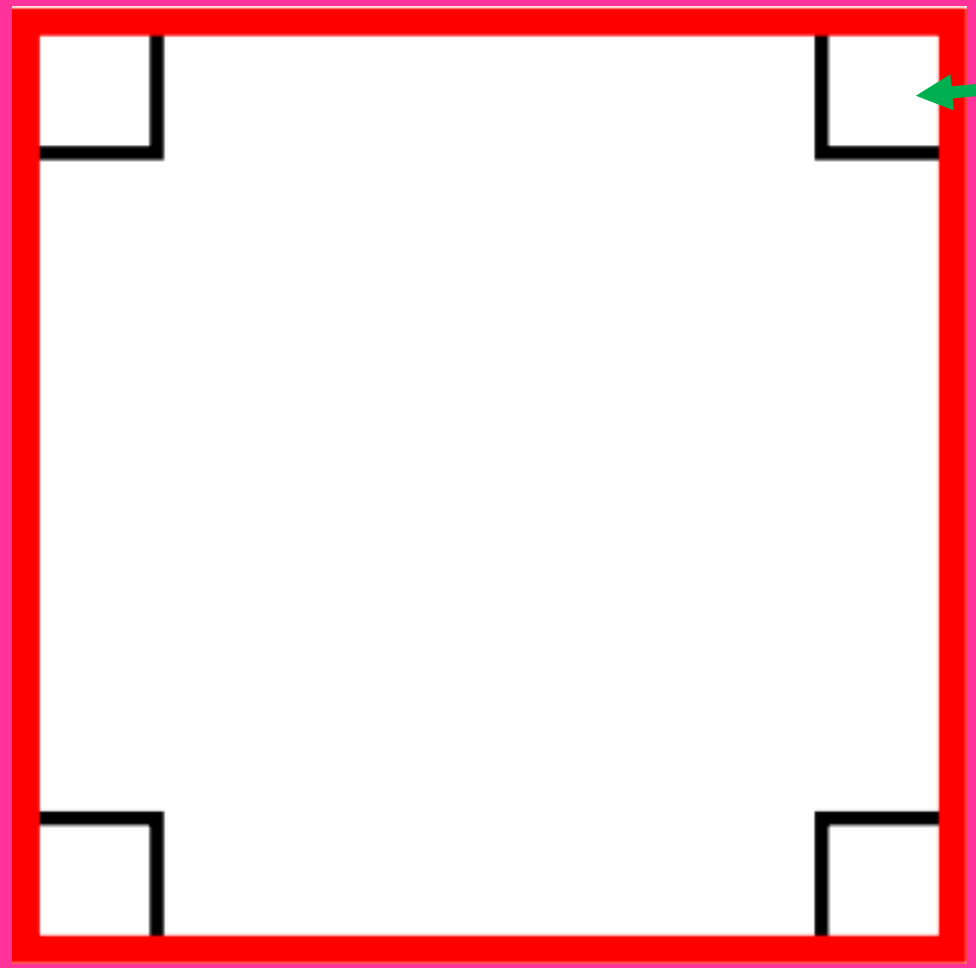
The sign is **square**.

Square

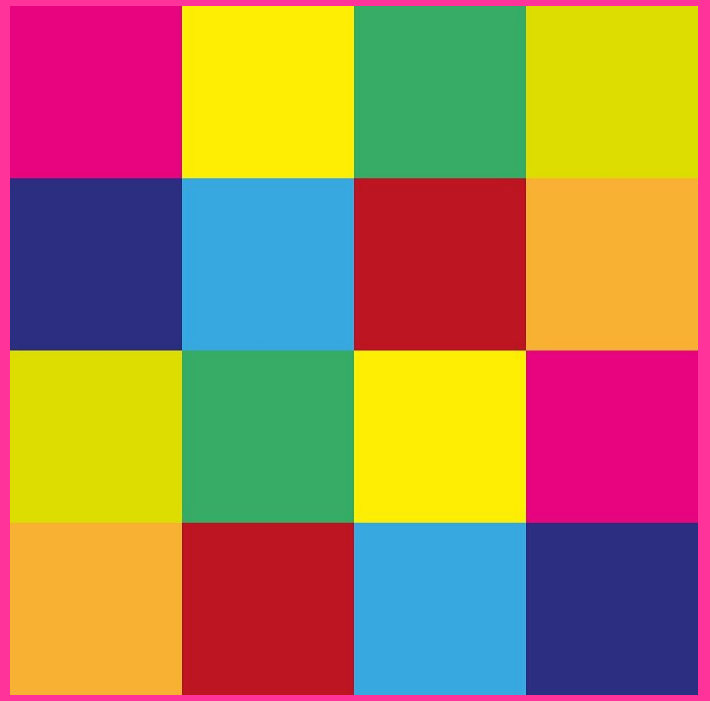
Properties of a square

- 2D shape
- 4 sides of the same length
- 4 corners

Square

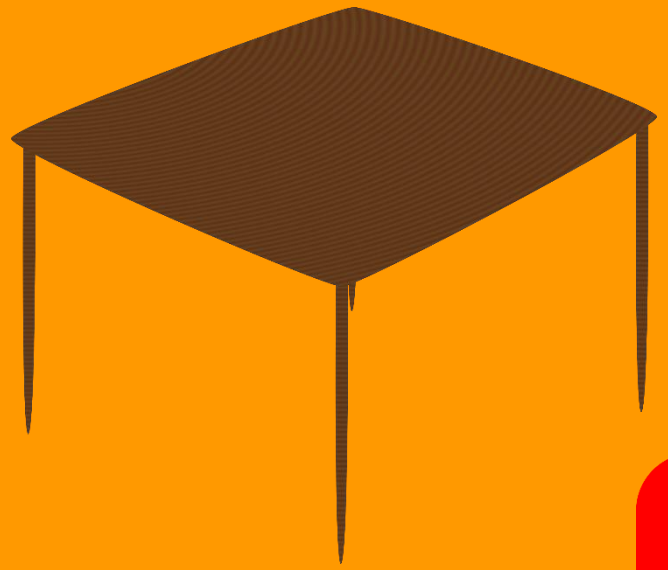


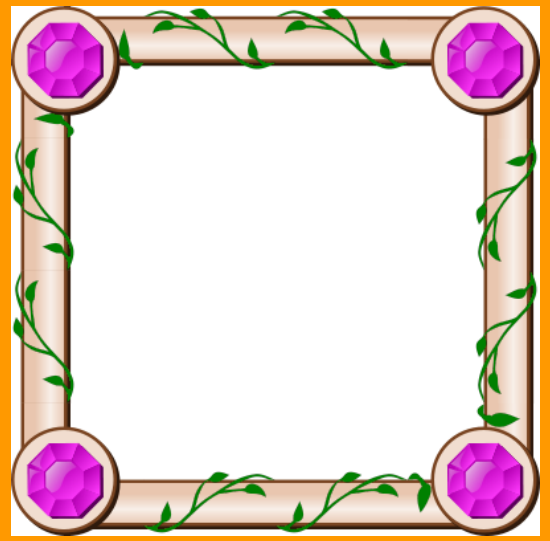
There are 4 right angles.



Find squares around you.

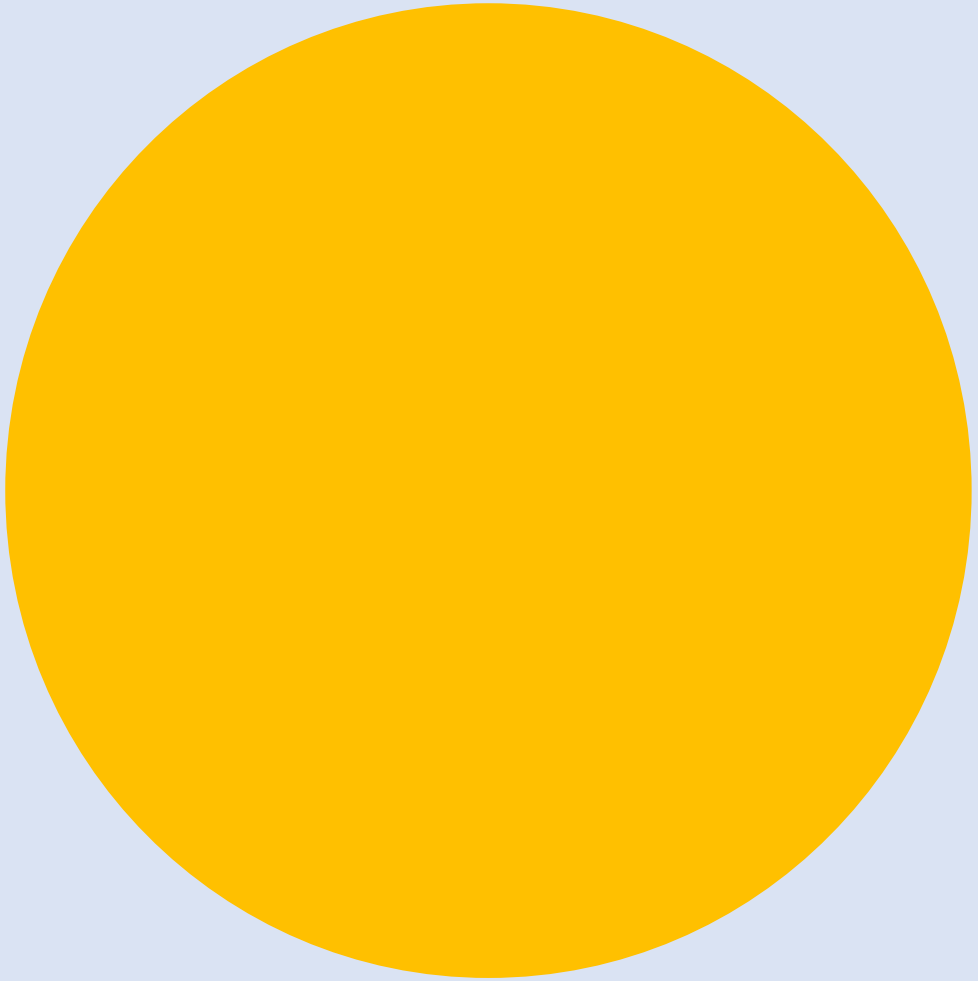
EXTRA





Squares in the environment

Circle



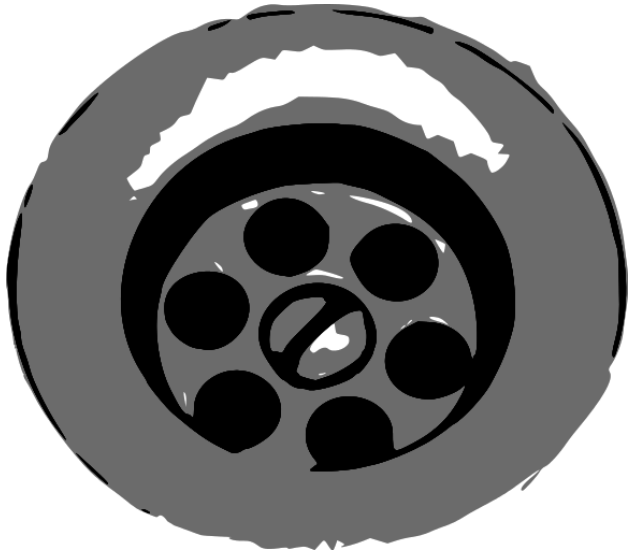
EXTRA

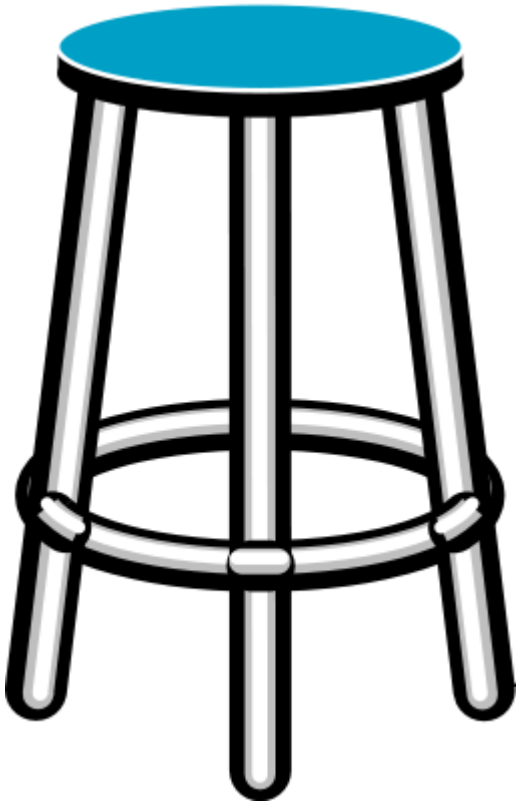
Properties of a circle

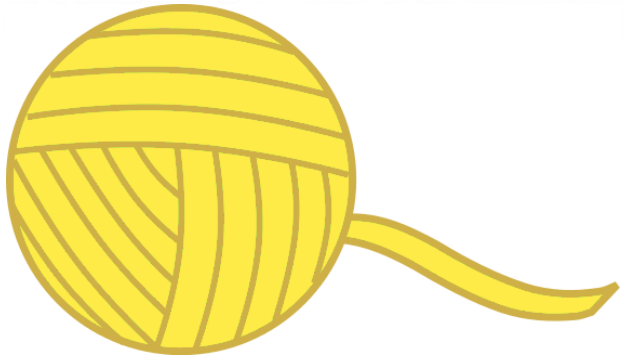
- A round flat 2D shape
- No straight sides, only one curved side
- No corners

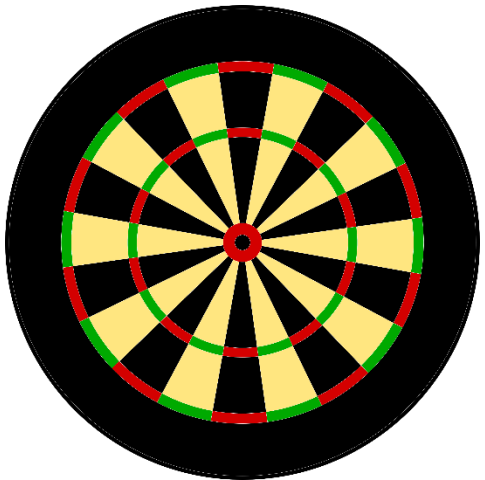
Find circles around you.

EXTRA









Round in nature

EXTRA

Circles at home

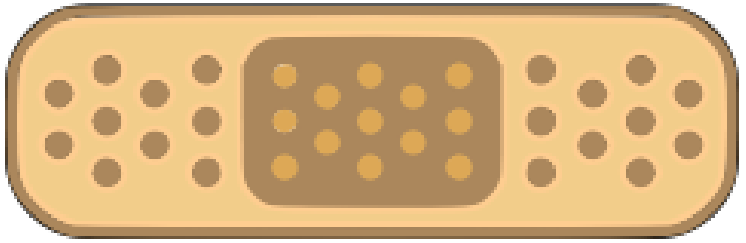
Rectangle

Properties of a rectangle

- A 2D shape
- 4 straight sides
- Two pairs of parallel sides that meet at right angles
- This means 2 sides are long and 2 are shorter

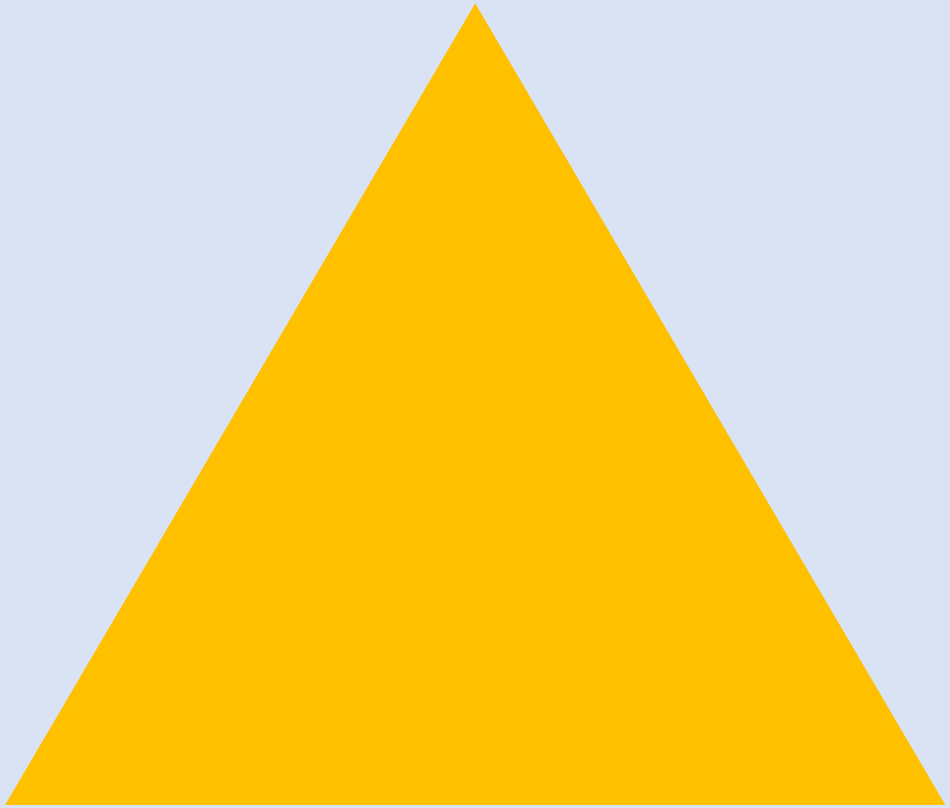
Find rectangles around you.

EXTRA



Rectangles in the environment

Triangle

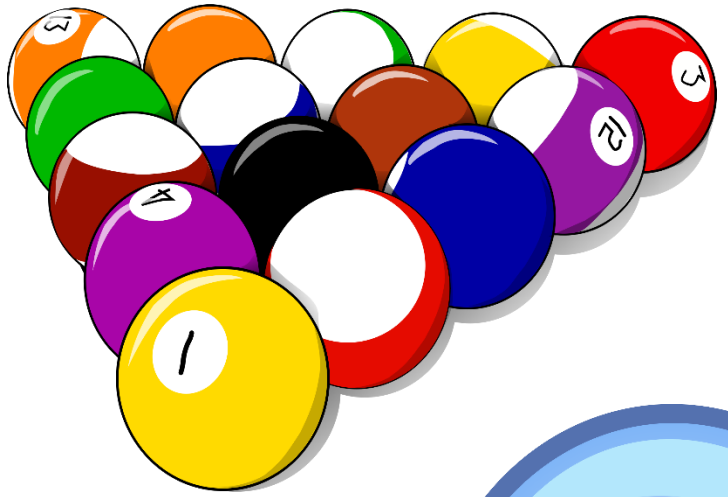


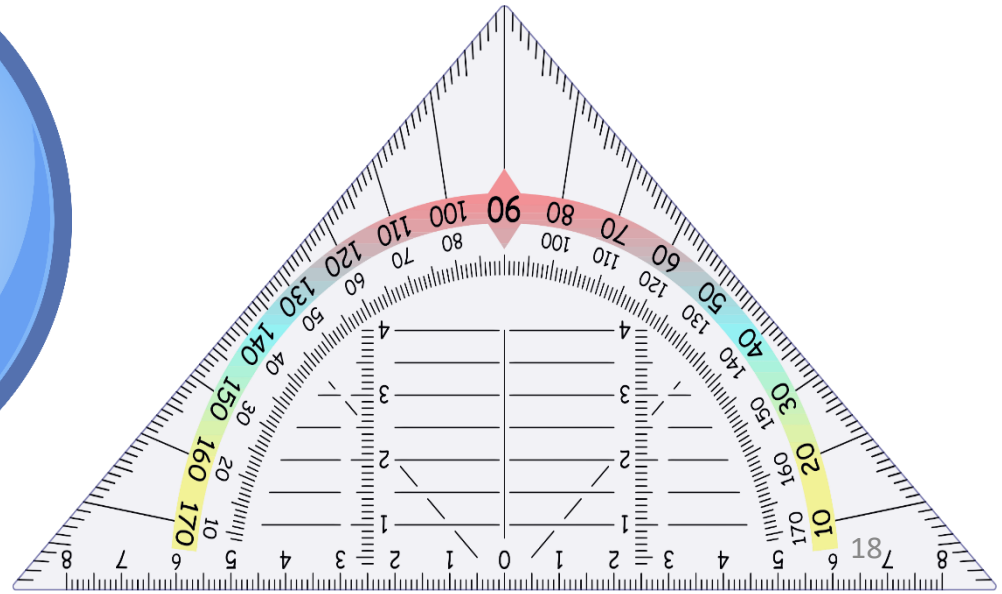
Properties of a triangle

- A 2D Shape
- 3 straight sides
- 3 corners
- Different types of triangles

Find triangles around you.

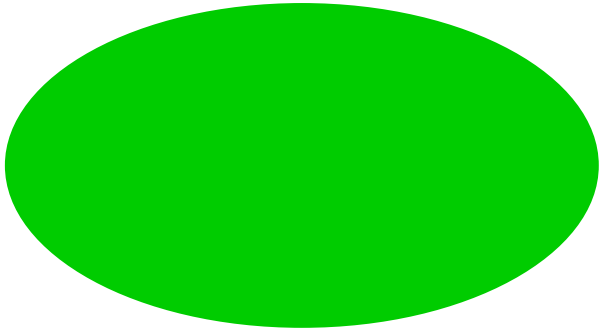
EXTRA





Other 2D shapes

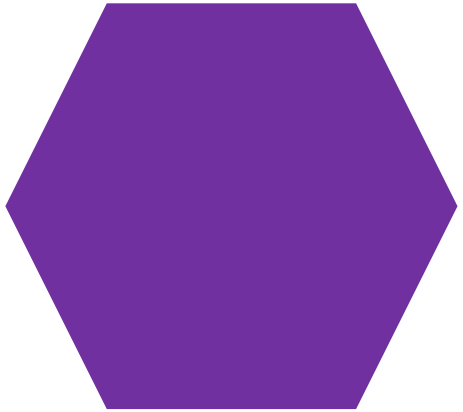
EXTRA



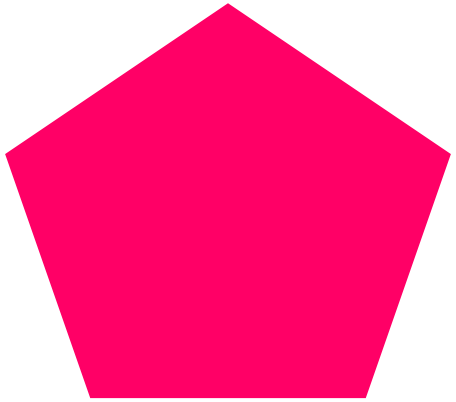
oval

trapezium

diamond



hexagon



pentagon

parallelogram

heart

Triangle in the environment

Identify the shape/s.

EXTRA

What shapes can you see?

EXTRA

What shapes can you see?

EXTRA

What shapes can you see?

What shapes can you see?

EXTRA

Look at this painting of Barcelona. What shapes can you see?

Find the shapes.

EXTRA

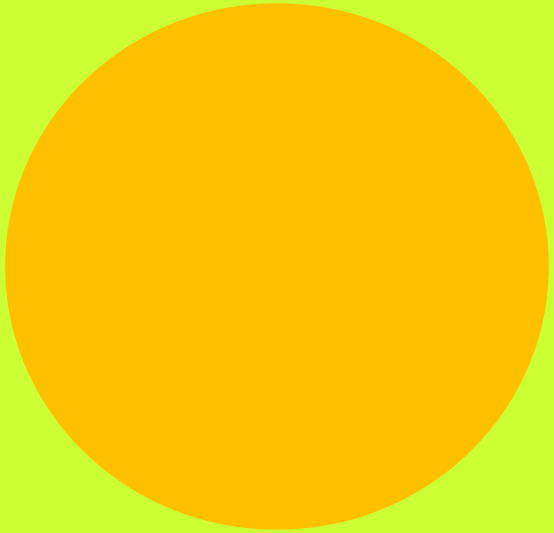
- circles
- rectangle
- hearts

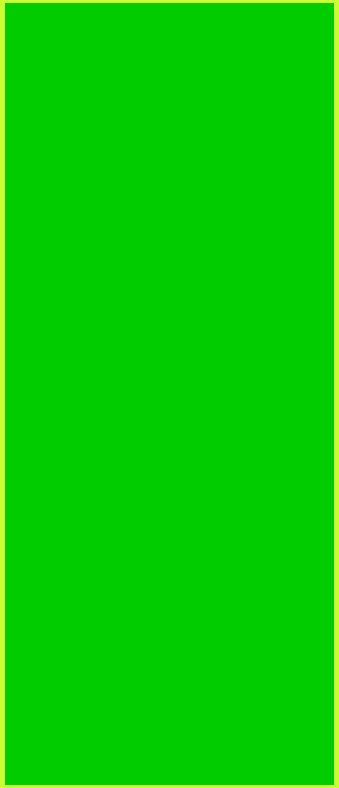
What shapes can you see?

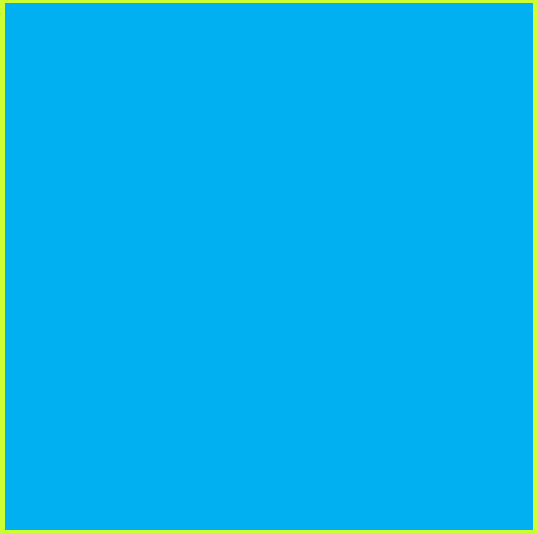
What shapes do you see?

Workbook
Page 6

Name these shapes.

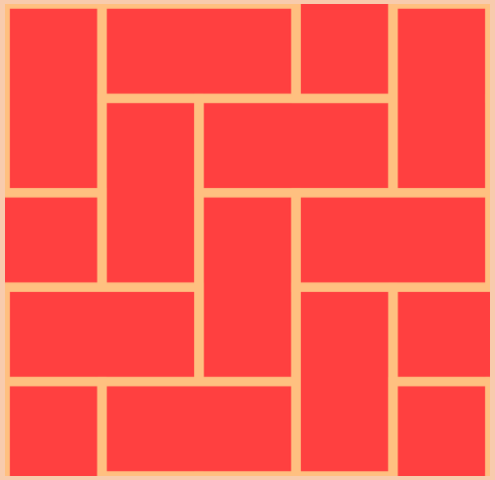






Workbook
Page 6

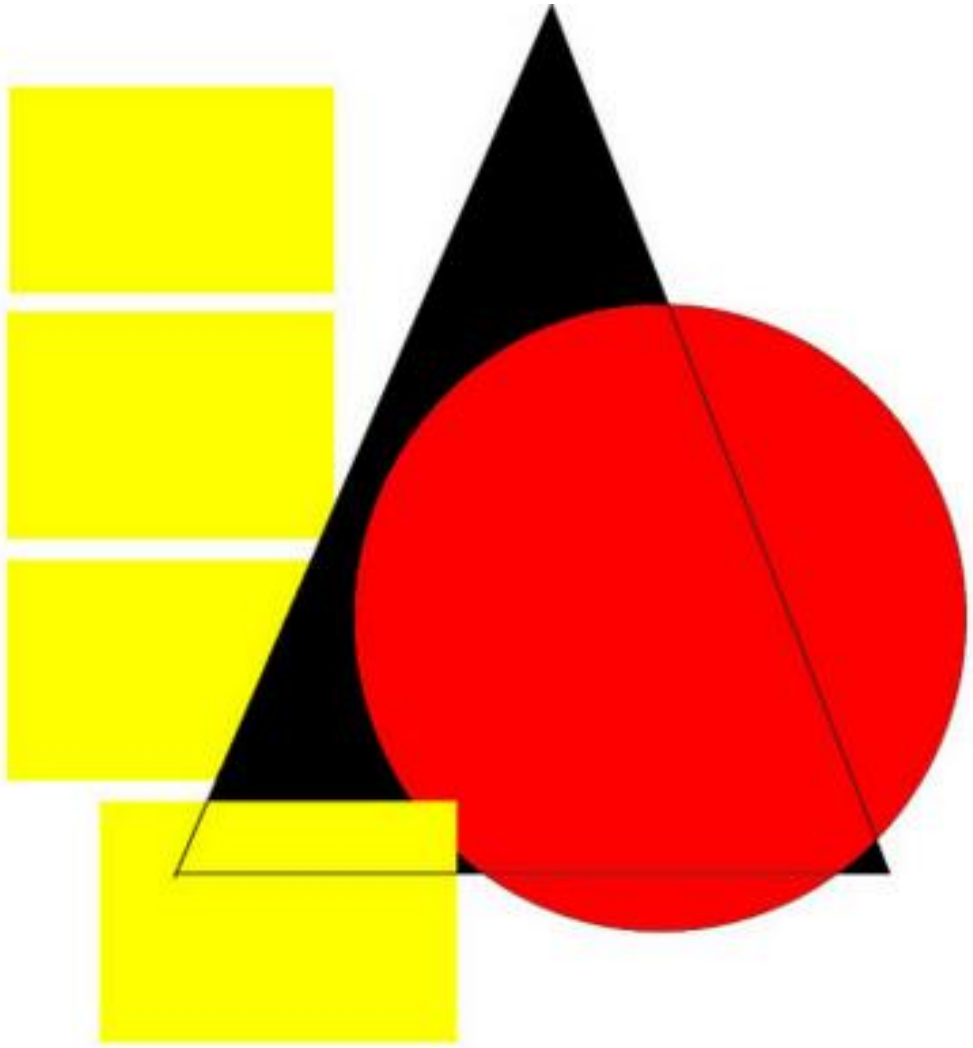
What shapes do you see in these everyday objects?



True or false?

EXTRA

a) The circle is black.
b) There are 4 rectangles.
c) The triangle is red.
d) There is one square.
e) The rectangles are yellow.
f) These are 2D shapes.



Give an example of where we can see each of these shapes in everyday life:

Workbook
Page 7

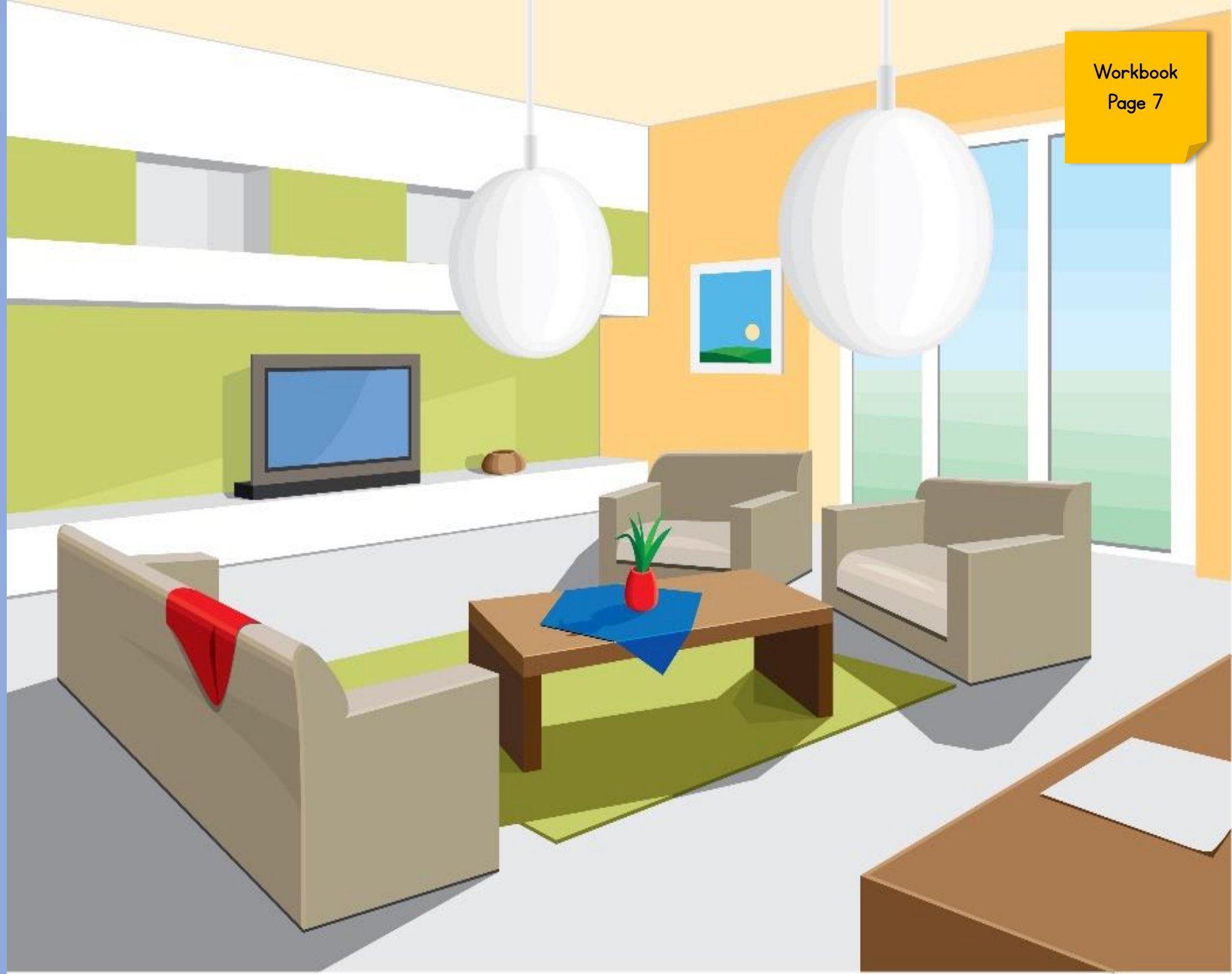
a) triangle

b) rectangle

c) square

d) circle

What shapes can you see?



Workbook
Page 7

Workbook
Page 7

What shapes are there in your breakfast?

Workbook
Page 11

Fill in the correct words.

rectangle, circle, triangle, square

A _____ has three straight sides.

A _____ has no corners.

A _____ has 2 sides longer than the other two.

A _____ has 4 equal sides.

Workbook
Page 11

Fill in the table.

	Circle	Square	Rectangle	Triangle
Number of sides				
Number of corners				
Length of sides				

Workbook
Page 11

True or false?

a) A rectangle has 4 sides.

b) A square has 4 sides.

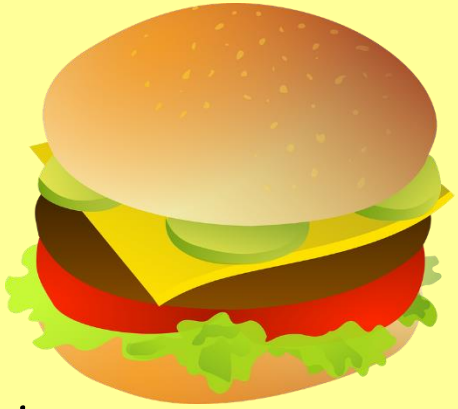
c) A rectangle has 2 corners.

d) A square has 4 sides with different lengths.

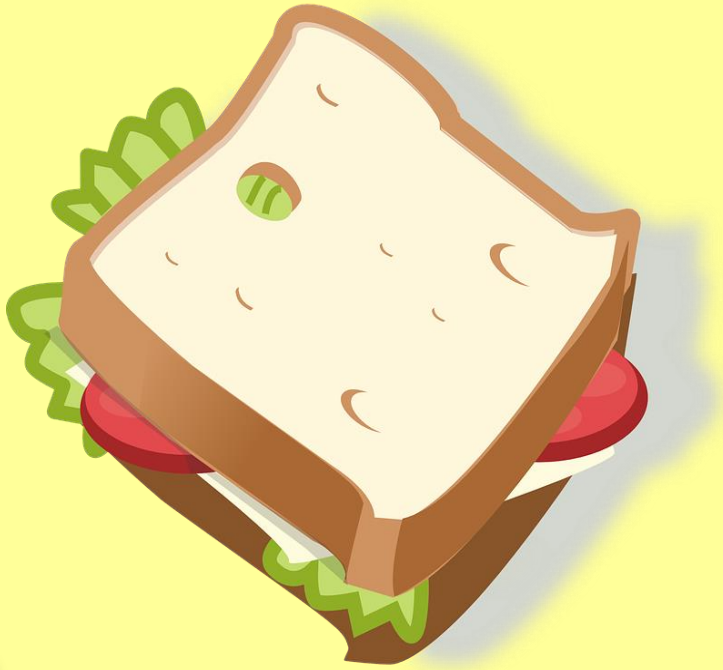
Match the descriptions and the images.

Workbook
Page 12

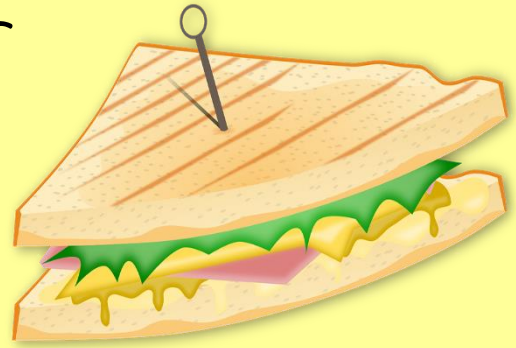
a) Has 3 sides



b) Has no straight sides



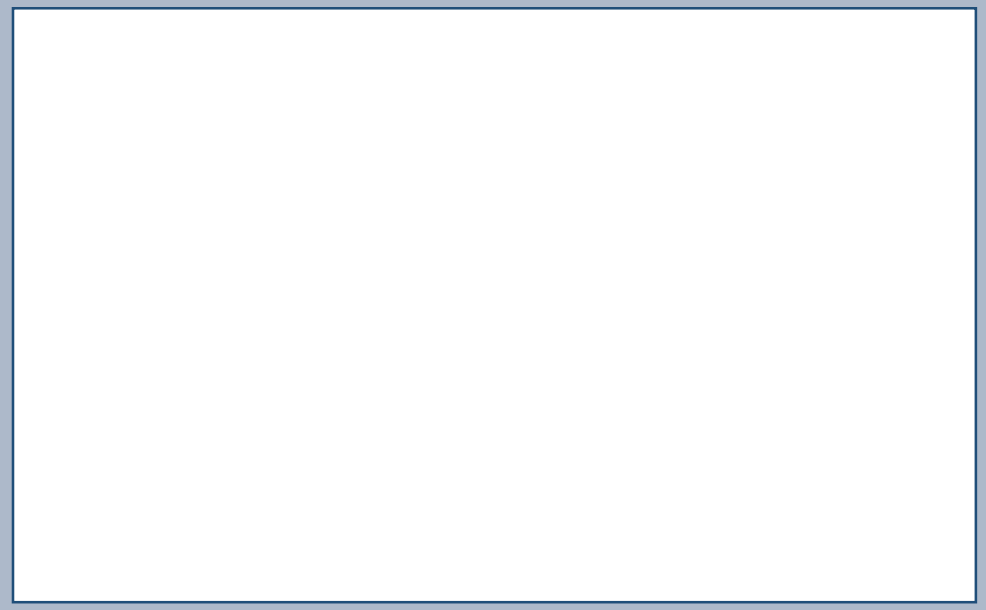
c) Has 4 straight sides, 2 are longer



Workbook
Page 12

What shape is this?

How do you know?



Workbook
Page 12

What shape is this?

How do you know?

Workbook
Page 12

What shape is this?

How do you know?

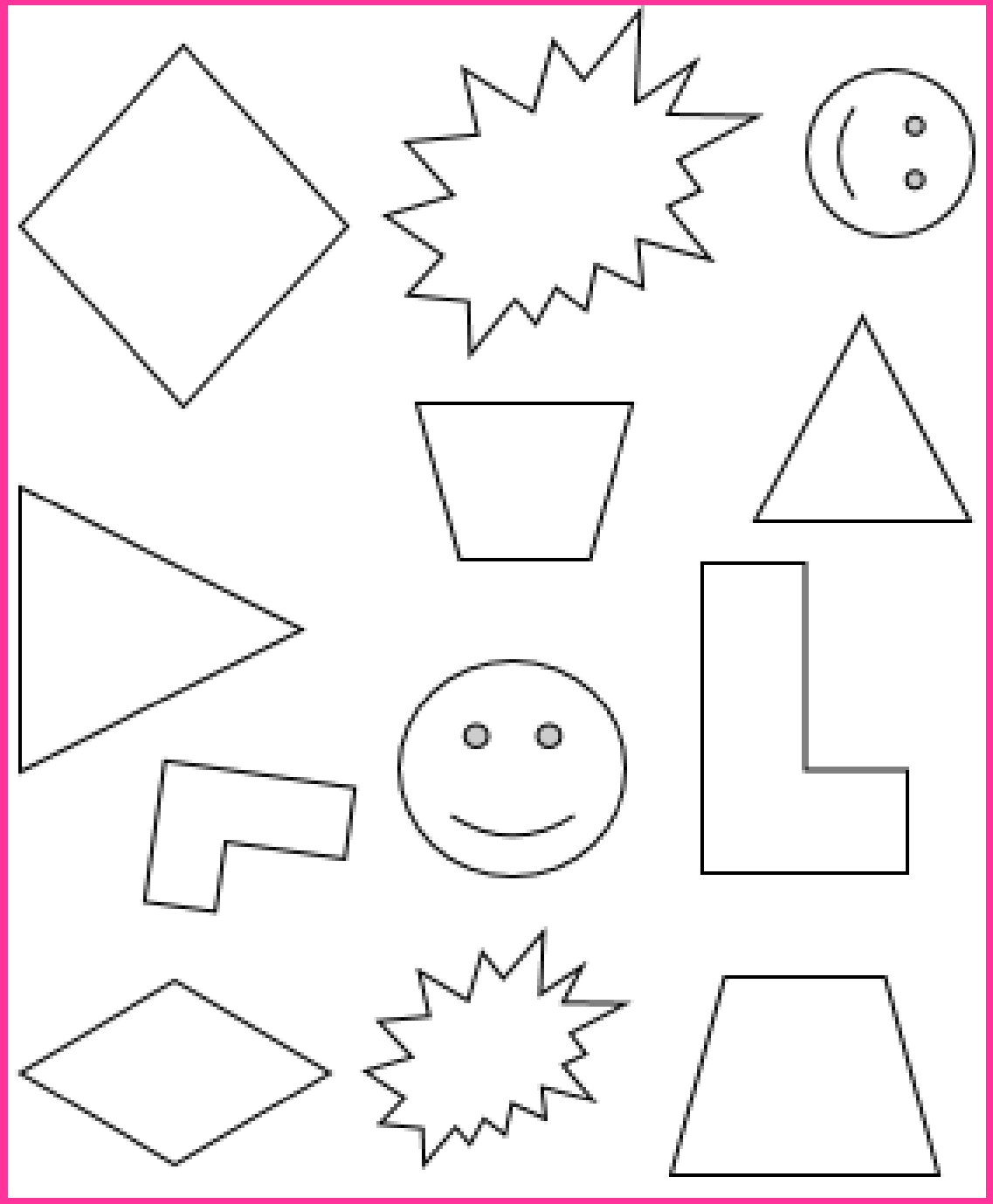
Workbook
Page 12

What shape is this?

How do you know?

Workbook
Page 13

Match similar shapes. Draw lines.



Workbook
Page 17

Name one 2D shape you can see in each of these:

Workbook
Page 18

Name one 2D shape you can see in each of these:

EXTRA

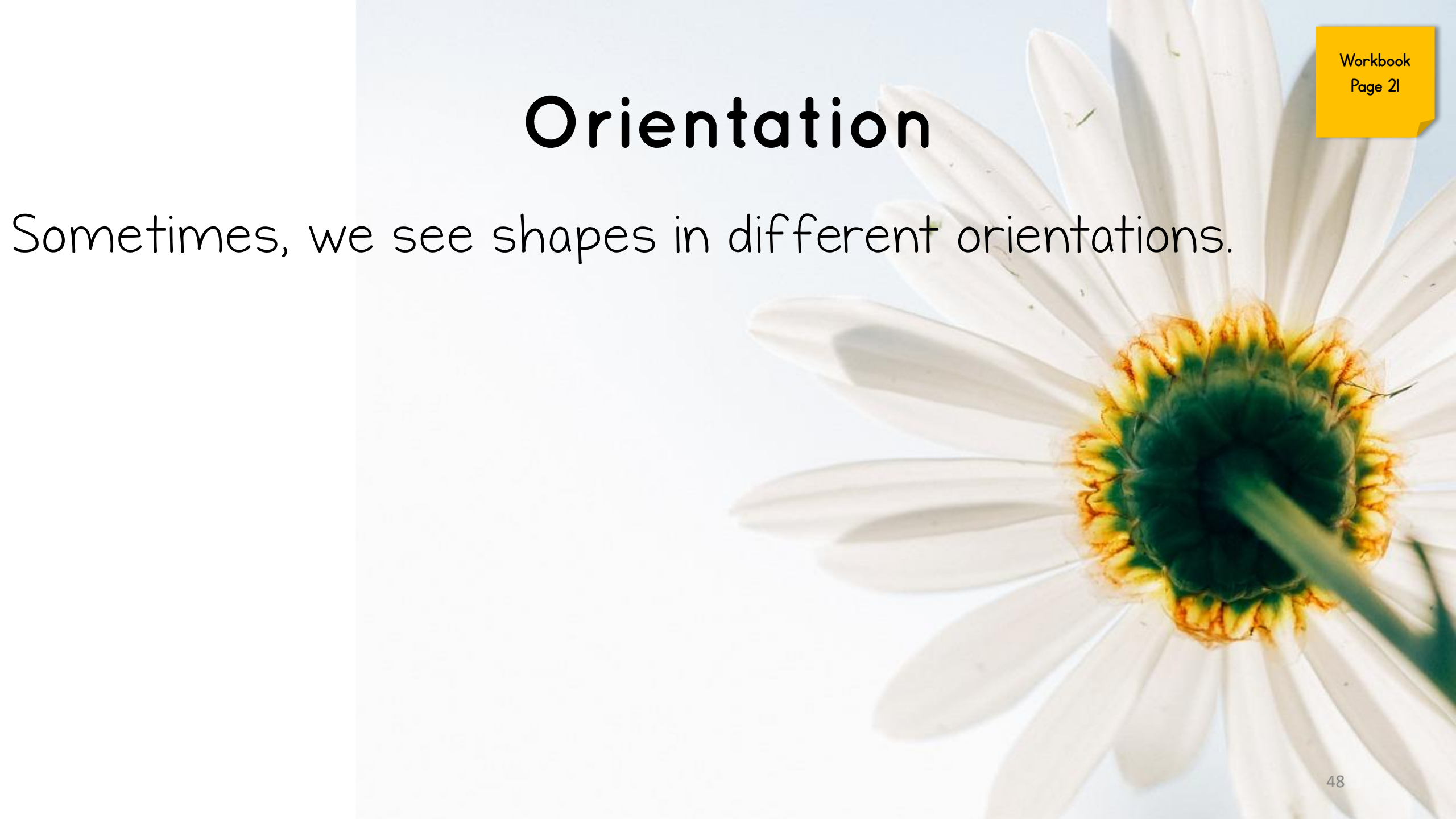
What shapes do we see in nature?

Find some shapes.

Workbook
Page 21

Orientation

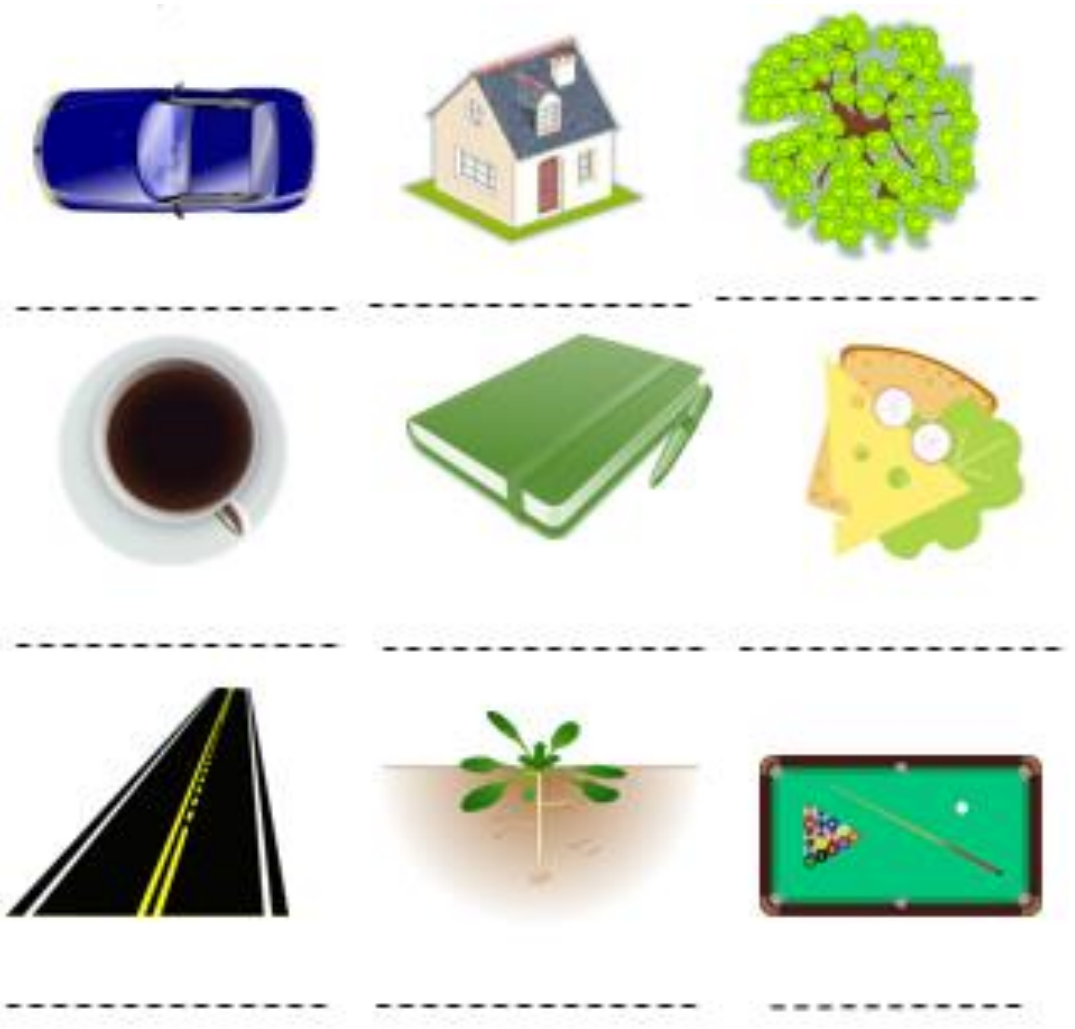
Sometimes, we see shapes in different orientations.



Workbook
Page 21

Write the shapes.

These are different orientations of shapes. What are the shapes?



Use Google Maps to find your house or education centre. Use the street view to see different perspectives.

Workbook Page 21

Talk about the shapes you see.

EXTRA

Does the road look like it is coming to a point?

EXTRA

Talk about this view of the trees.

EXTRA

What shapes do you see?

EXTRA

What shapes do you see?


EXTRA
What shapes do you see?

What shapes do you see?

EXTRA

Would shapes change if you changed your view?

Talk about this.


EXTRA
Talk about the perspective.

EXTRA

Talk about the perspective.


Talk about the perspective.
EXTRA

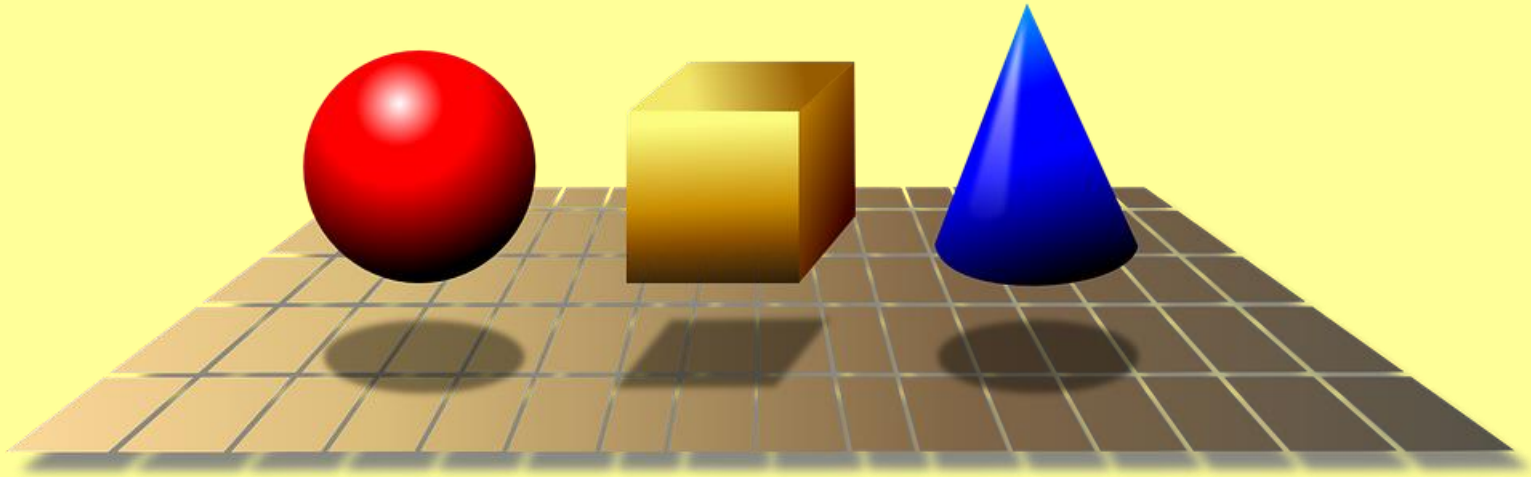
Talk about the perspective.


EXTRA
Talk about the perspective.

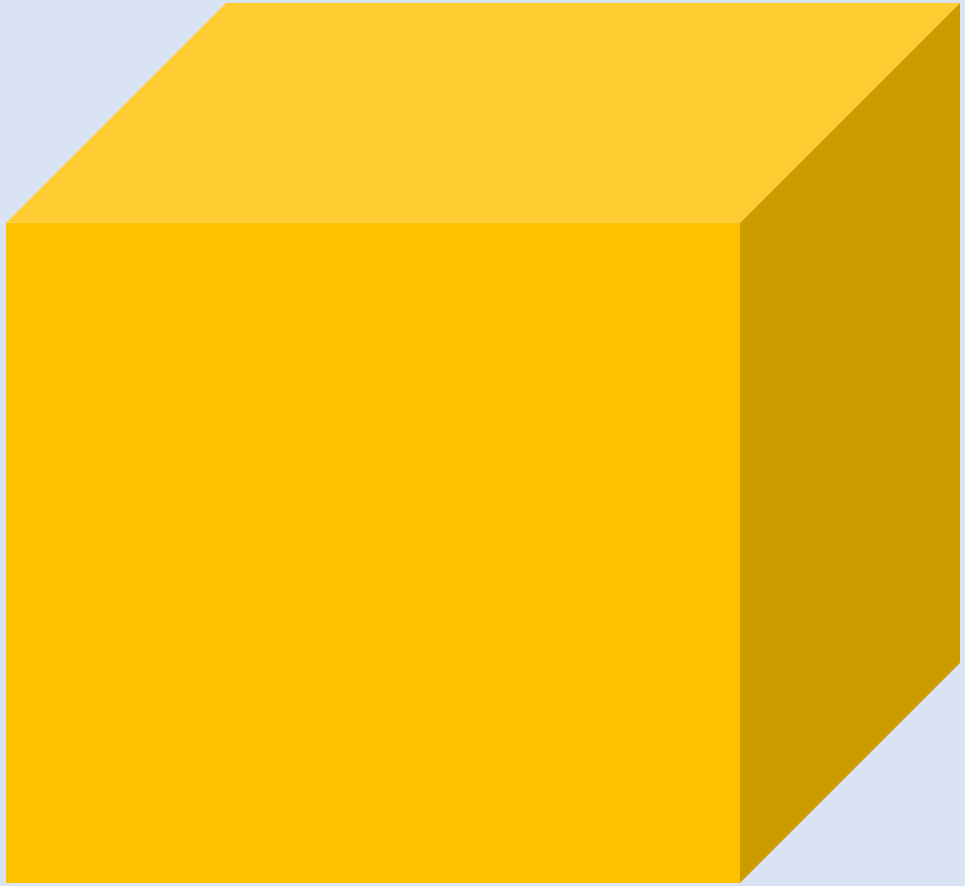
EXTRA

3D shapes

- These shapes are solid or hollow.
- They have three dimensions - length, width and height.
- 3D stands for 3-dimensional.



Cube

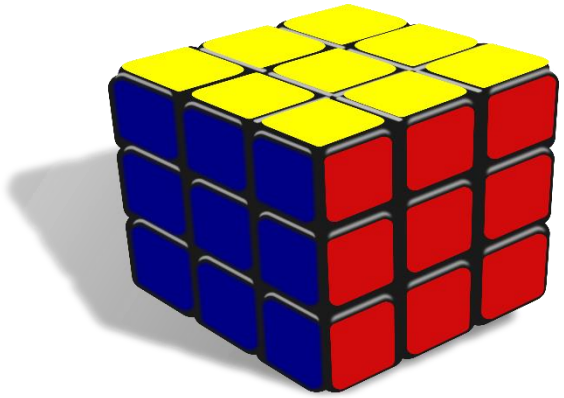


Properties of a cube

- A 3D shape
- 6 square faces all the same size
- 12 edges all the same length

Find cubes around you.

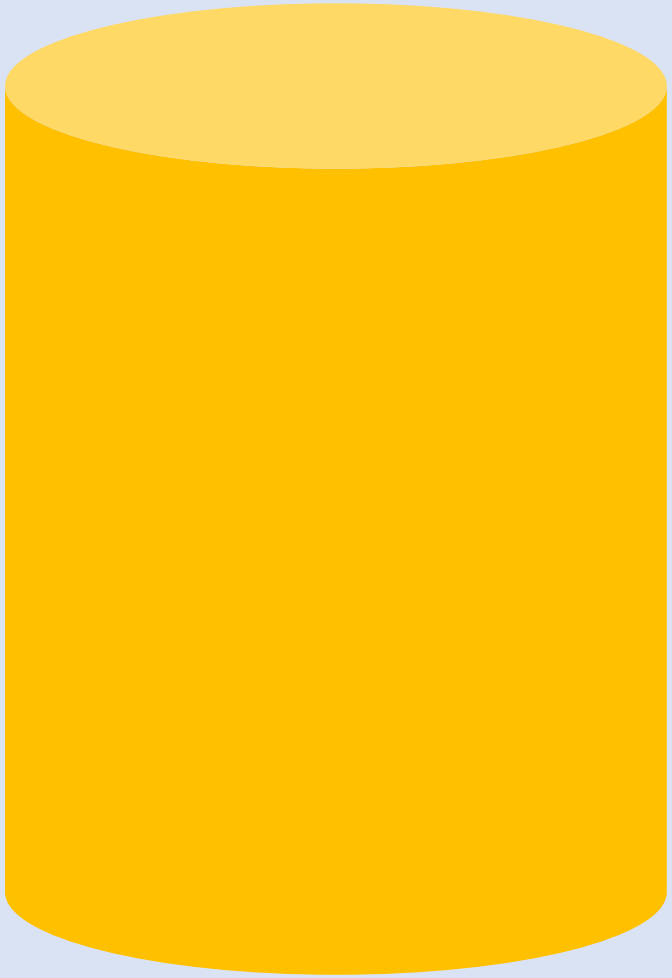
EXTRA



Cubes in the environment

Cylinder

EXTRA

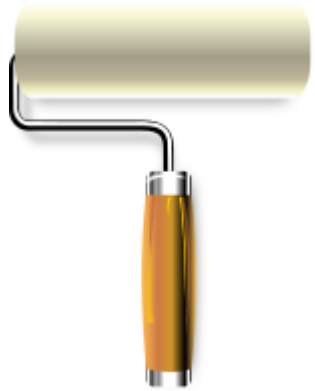


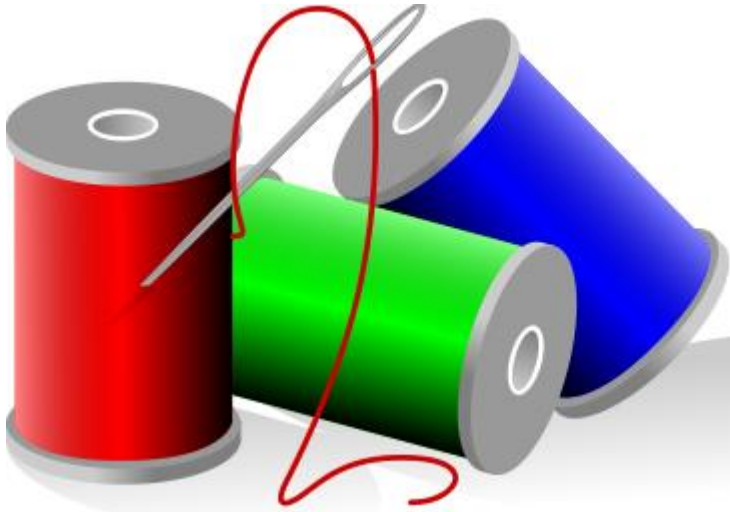
Properties of a cylinder

- A 3D shape
- Circular ends of equal size
- 2 edges
- 3 faces

Find cylinders around you.

EXTRA



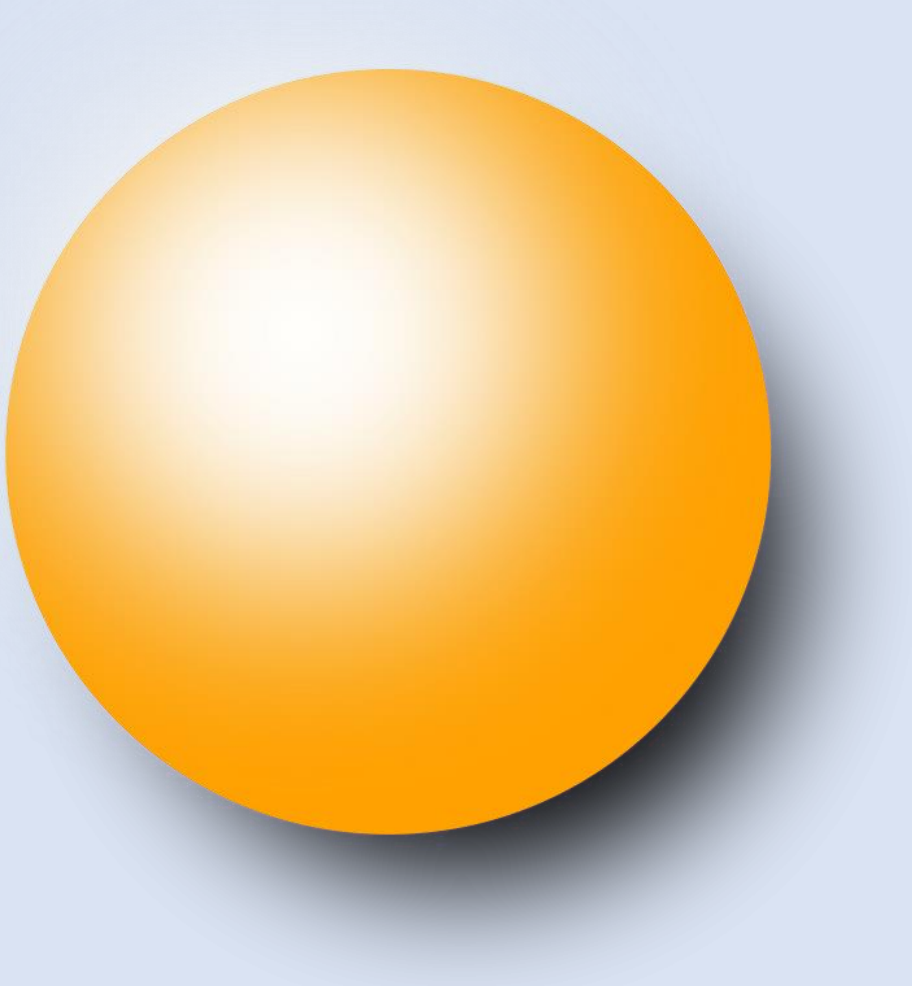


Cylinders in the home

EXTRA

Sphere

EXTRA

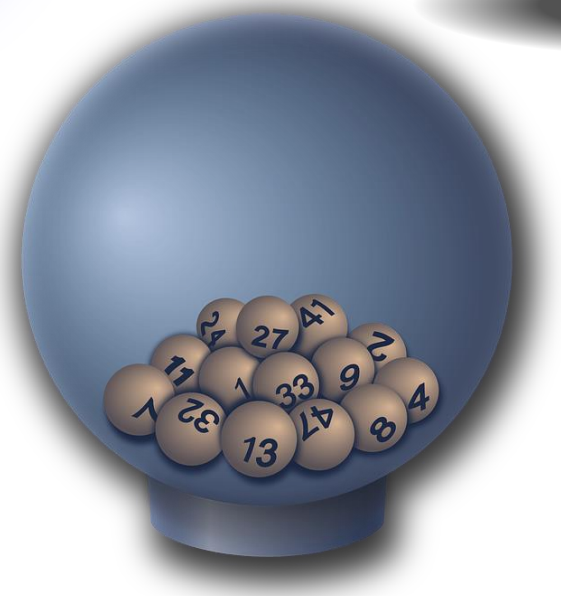


Properties of a sphere

- A perfectly round 3D shape, like a ball.
- It has only one curved face.

Find spheres around you.

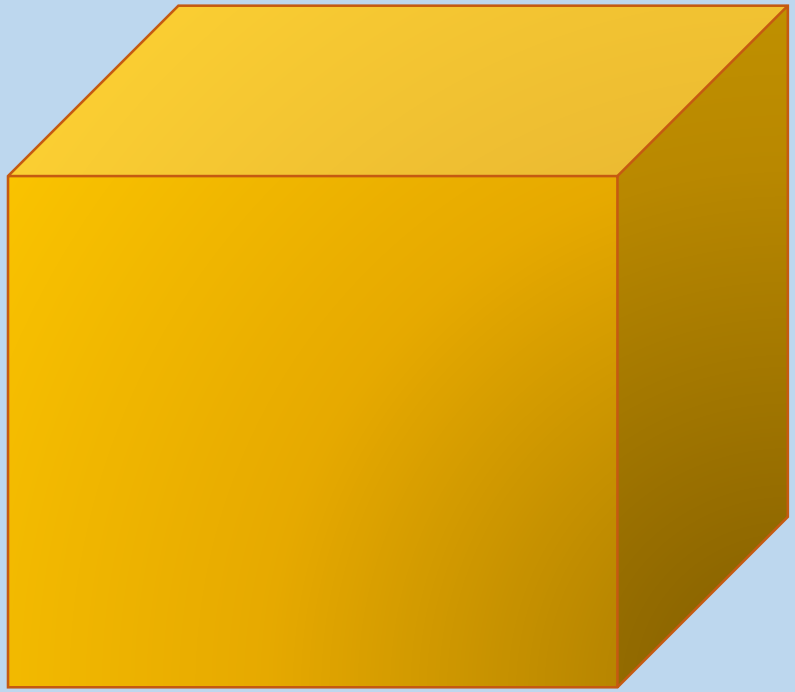
EXTRA



Sphere in nature

Workbook
Page 25

Name the shapes.



Workbook
Page 25

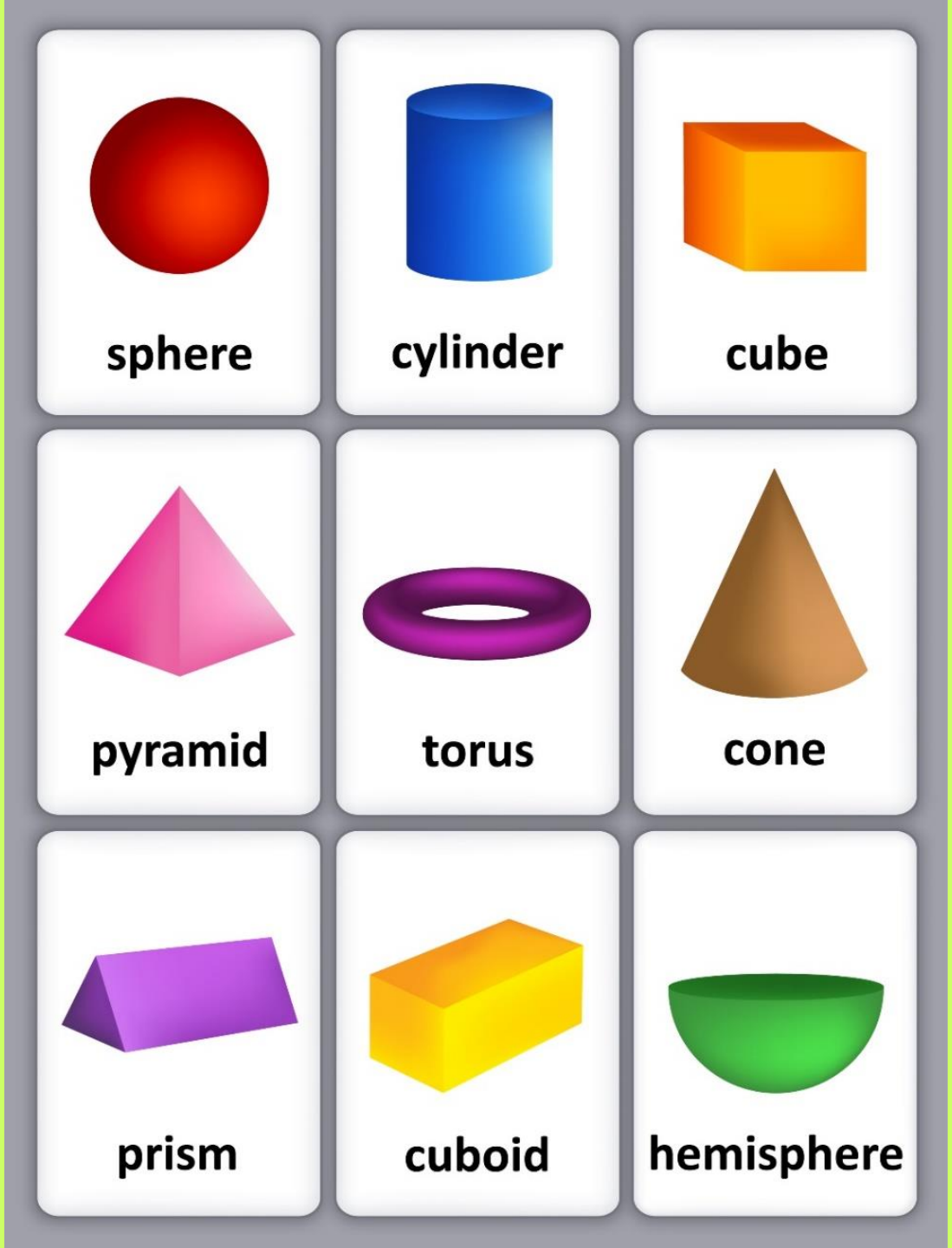
What shapes do you see in these everyday objects?

Give an example of where we can see each of these shapes in everyday life:

Workbook
Page 26

a) cube
b) cylinder
c) sphere

In your group, talk about where we might see these 3D shapes in everyday life.

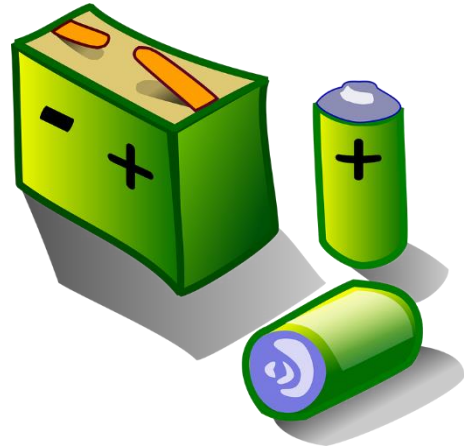


Workbook
Page 26

Workbook
Page 28

Complete the sentences.

sphere, cube, cylinder



A _____ has circular ends of equal size.

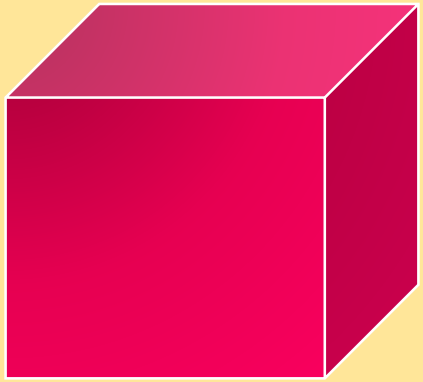
A _____ has 6 square faces.

A _____ has only one curved face.

Workbook
Page 28

Fill in the table.

	Cube	Cylinder	Sphere
Number of faces			
Number of edges			



Workbook
Page 28

True or false

a) A cylinder has 6 faces.

b) A cube is a 3D shape.

c) A sphere is a perfectly round 3D shape.

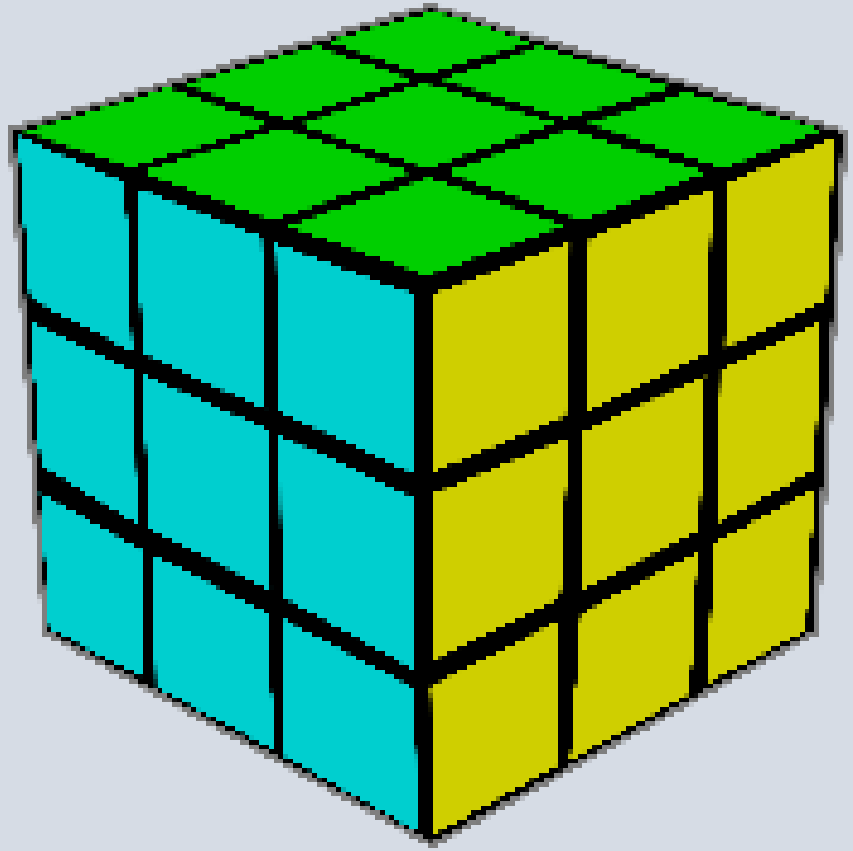
d) A cube has 6 edges.

e) Cylinders and squares are 3D shapes.

Workbook
Page 29

What shape is this?

How do you know?



Workbook
Page 29

What shape is this?

How do you know?

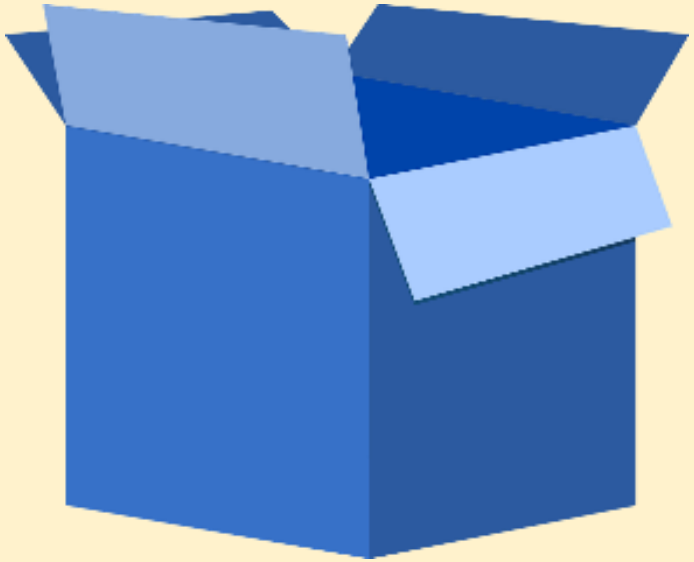
Workbook
Page 29

What shape is this?

How do you know?

Workbook
Page 29

Write the words: cylinder, cube, sphere

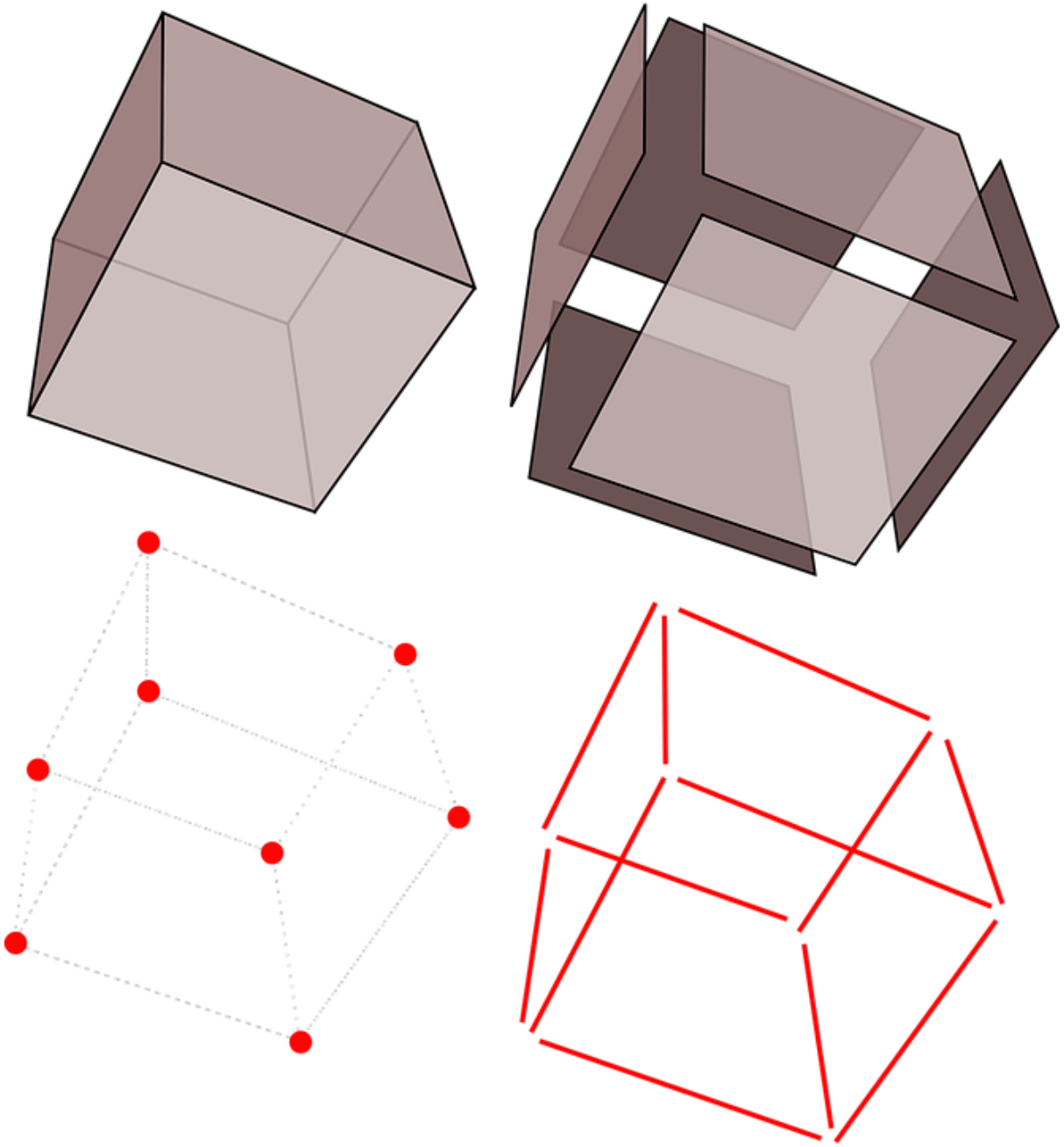


Workbook
Page 30

Name the 3D shapes you can see in each of these:

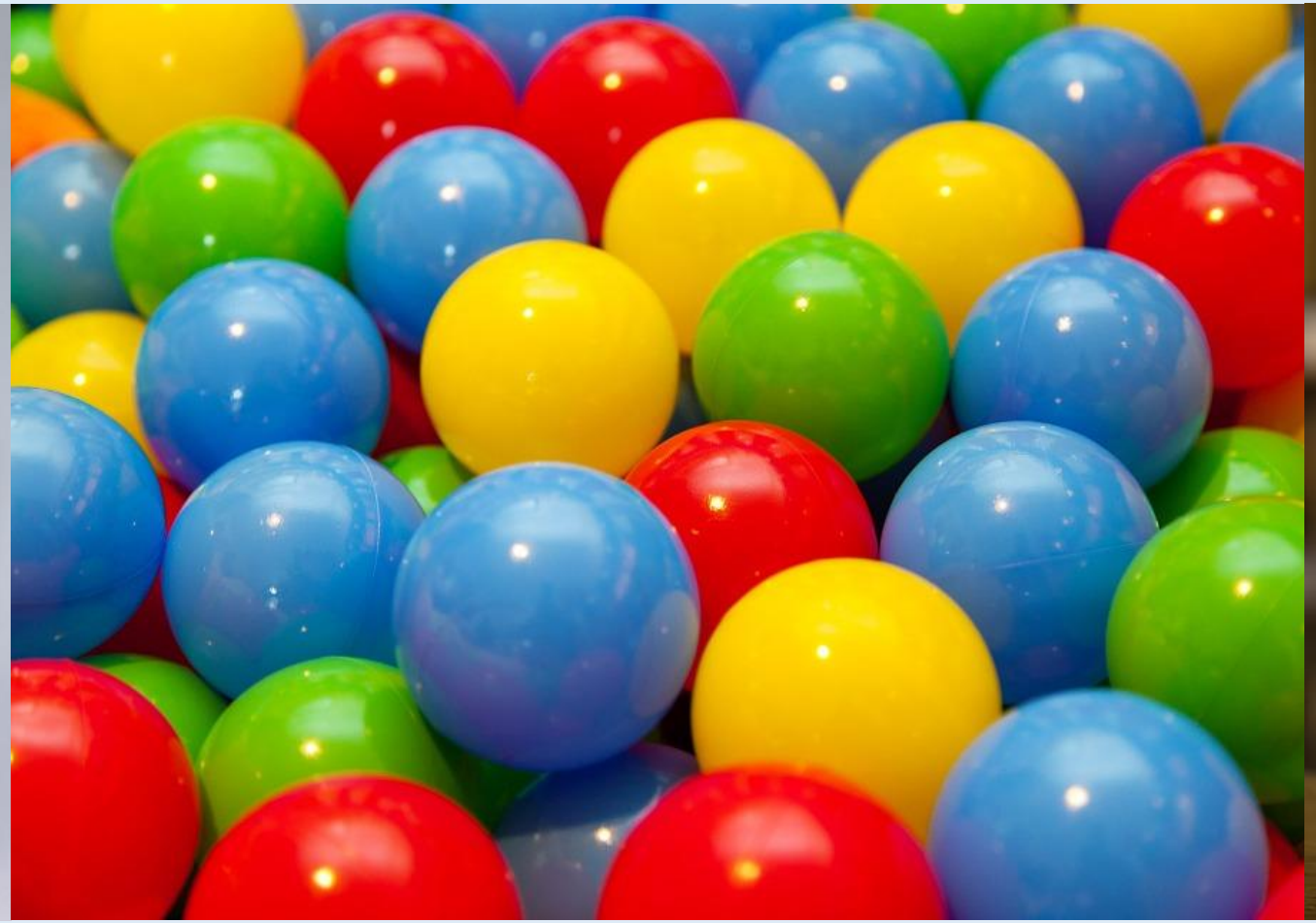
Workbook
Page 33

Look at the cube. Join the dots to make a cube.



What are these shapes?

EXTRA



What shapes are these?

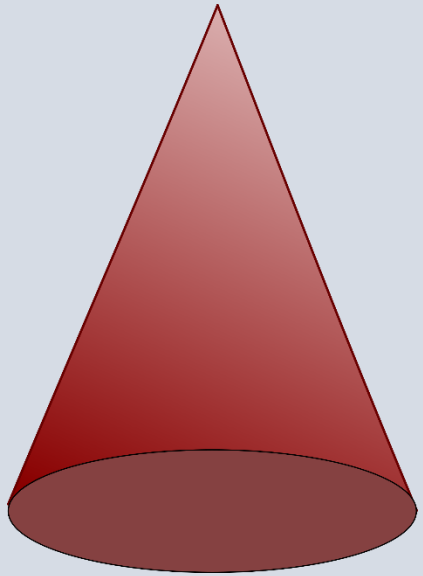
EXTRA

How do you know? What are the properties?

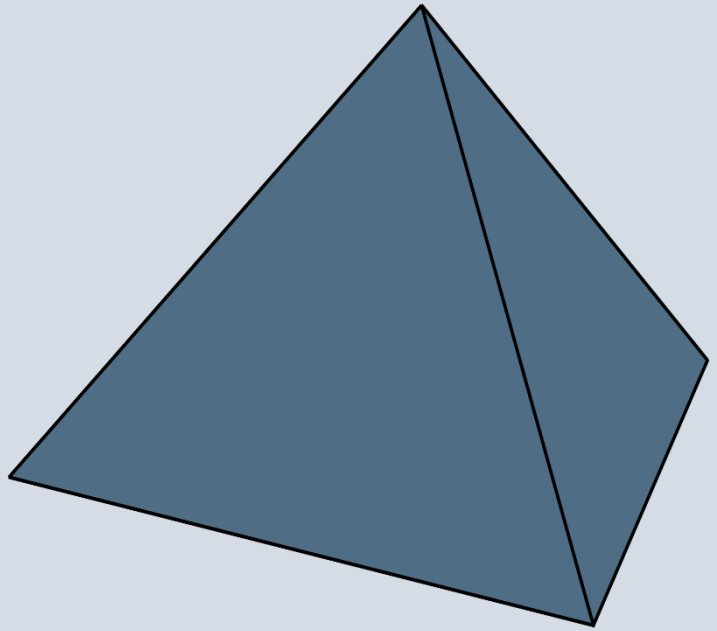
Other 3D Shapes

EXTRA

cuboid



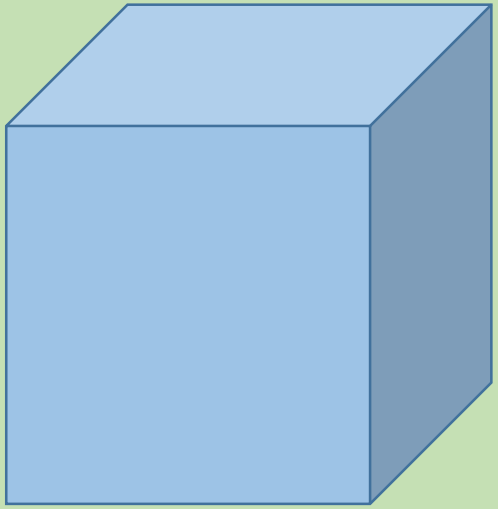
cone

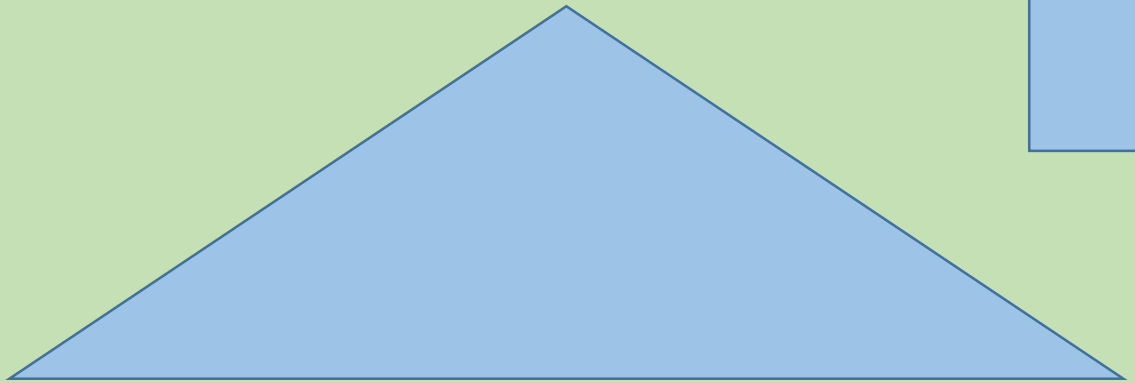


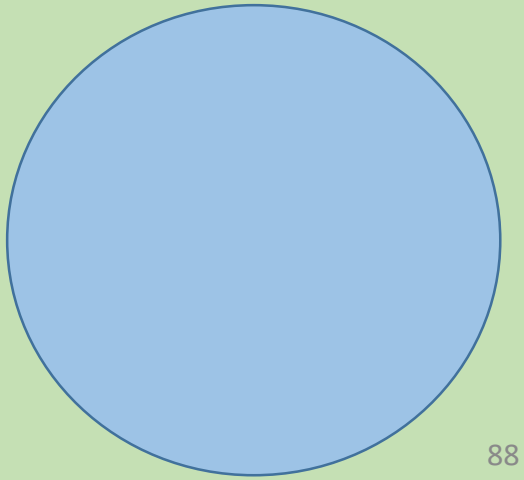
pyramid

Workbook
Page 35

Are these 2D or 3D shapes?







Which are 2D shapes and which are 3D shapes?

Workbook
Page 35

circle, cube, cylinder, triangle, square, sphere

2D shapes	3D shapes

Workbook
Page 36

Are these shapes 2D or 3D?

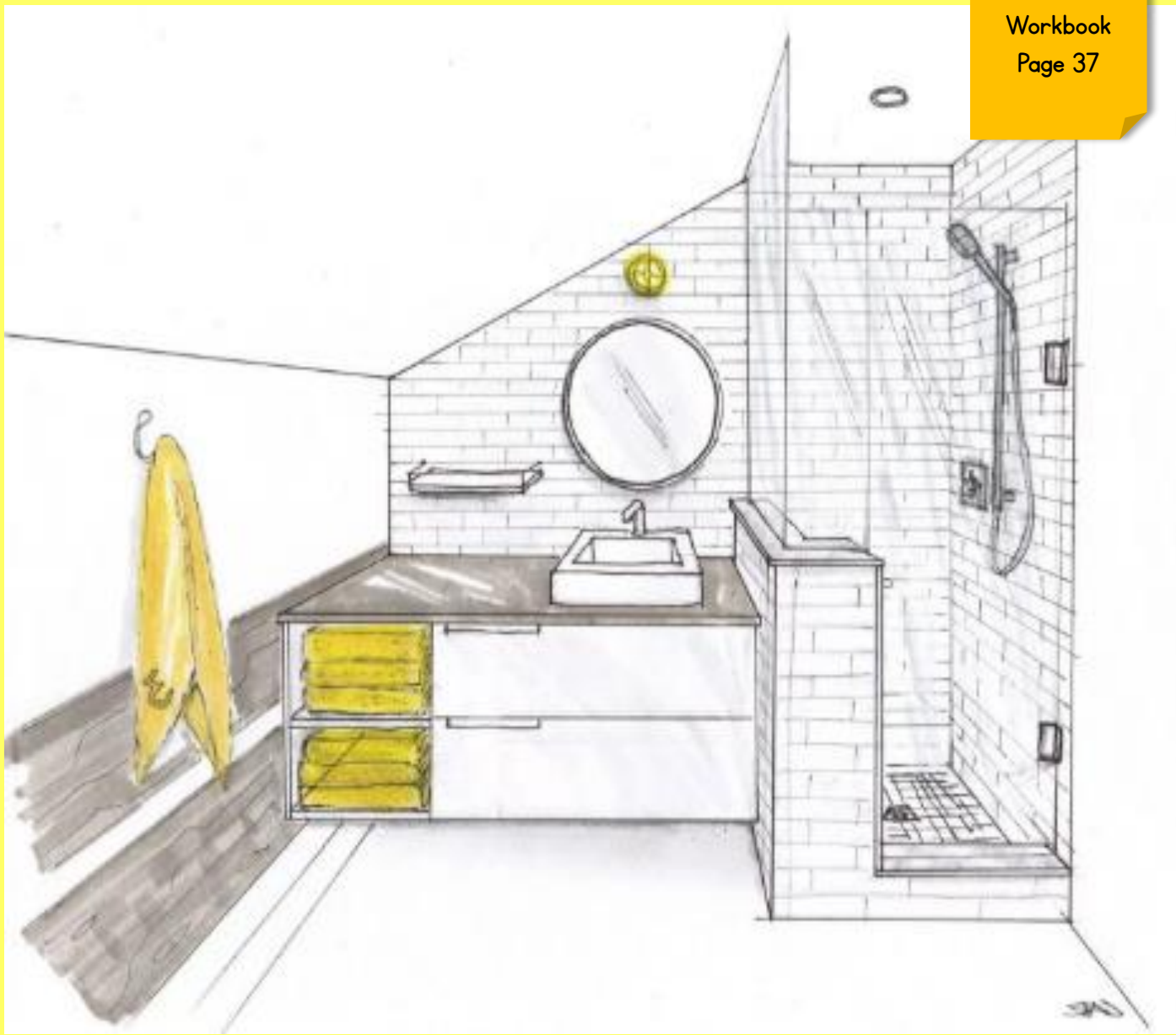
Look at the 3D drawing:

Workbook
Page 37

Complete the sentence:

3D, 2D

I am looking at this drawing in _____ but it is a _____ drawing of a bathroom.



What do these shapes have in common?

- They both have 4 straight sides.
- They both have 4 corners.

What do these shapes have in common?

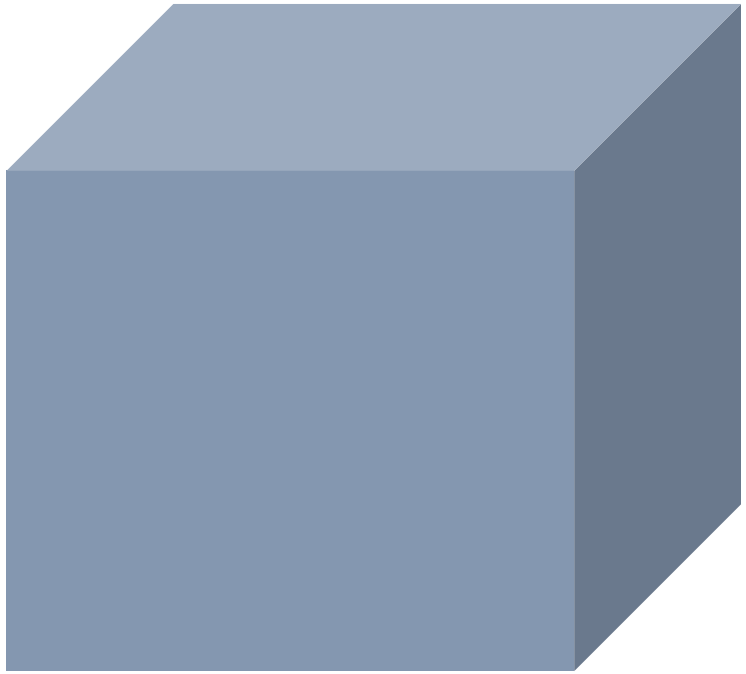
Workbook
Page 38

What do these shapes have in common?

Workbook
Page 38

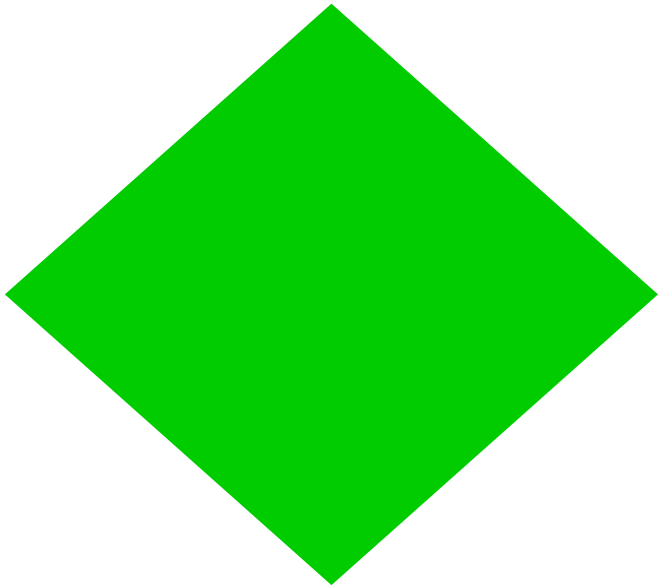
What do these shapes have in common?

Workbook
Page 38



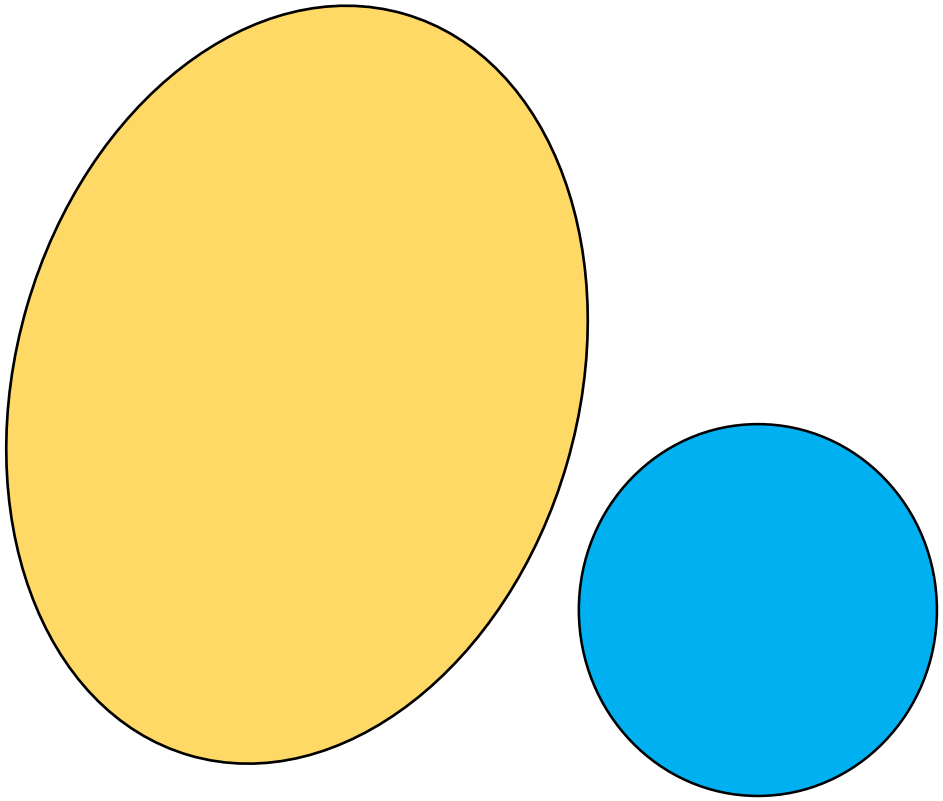
What do these shapes have in common?

Workbook
Page 38



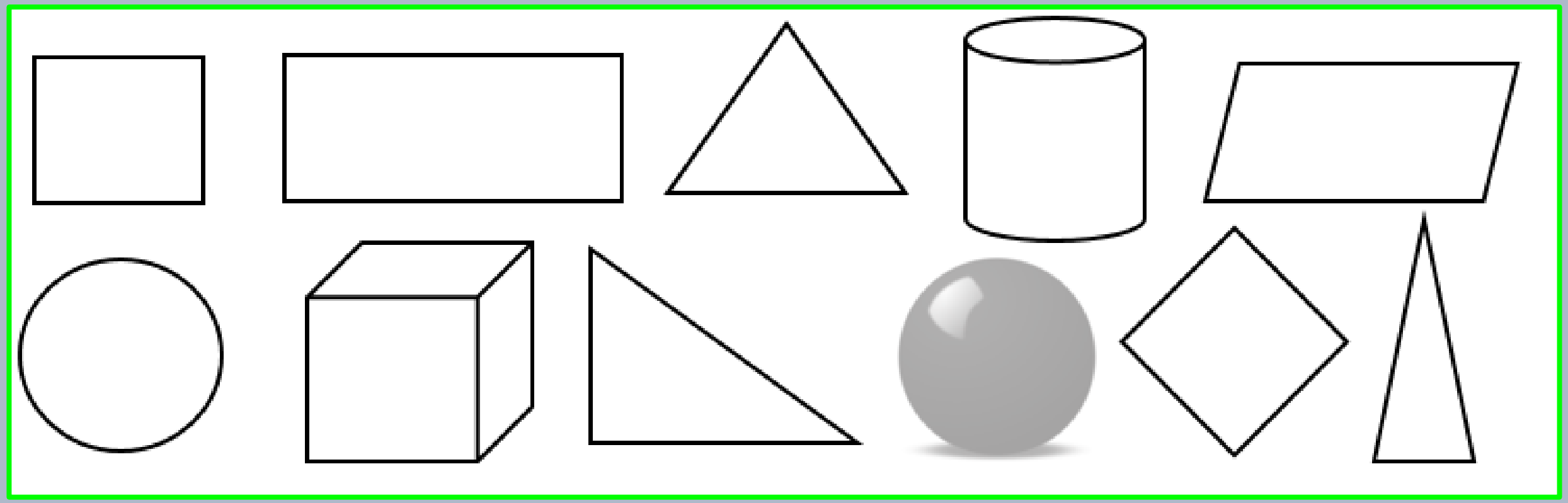
What do these shapes have in common?

Workbook
Page 38



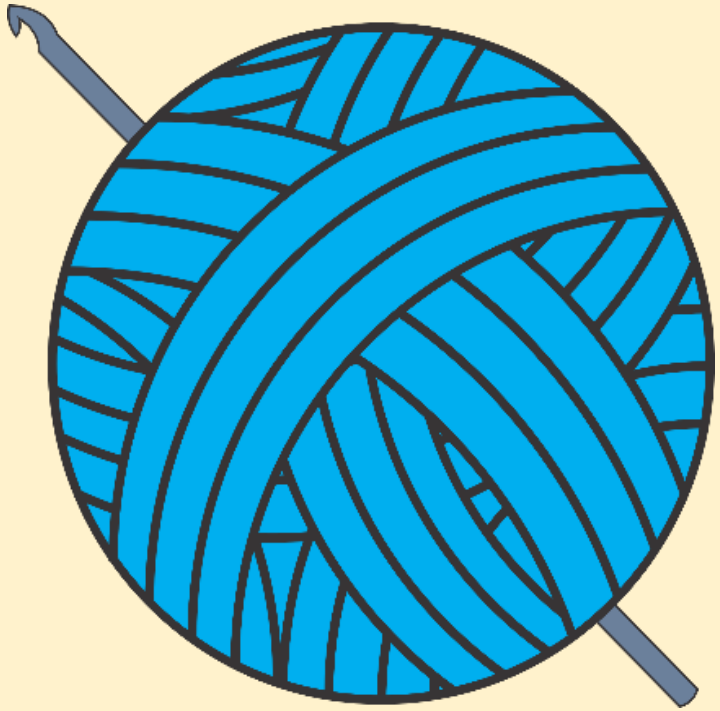
Workbook
Page 39

Make your own group.



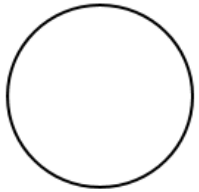
What do these shapes have in common?

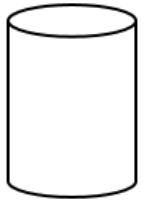
Workbook
Page 39

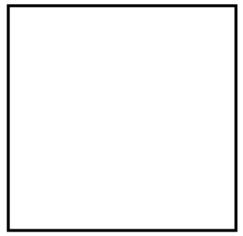


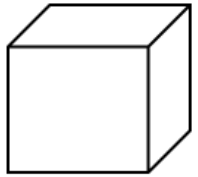
Recap: Match the shapes and objects. Draw lines.

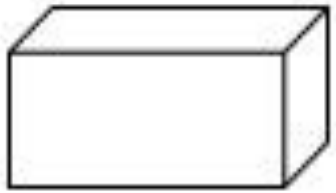
Workbook Page 40

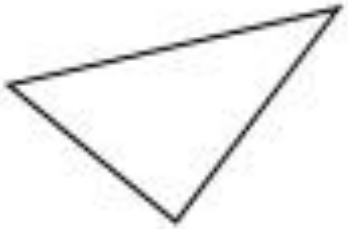








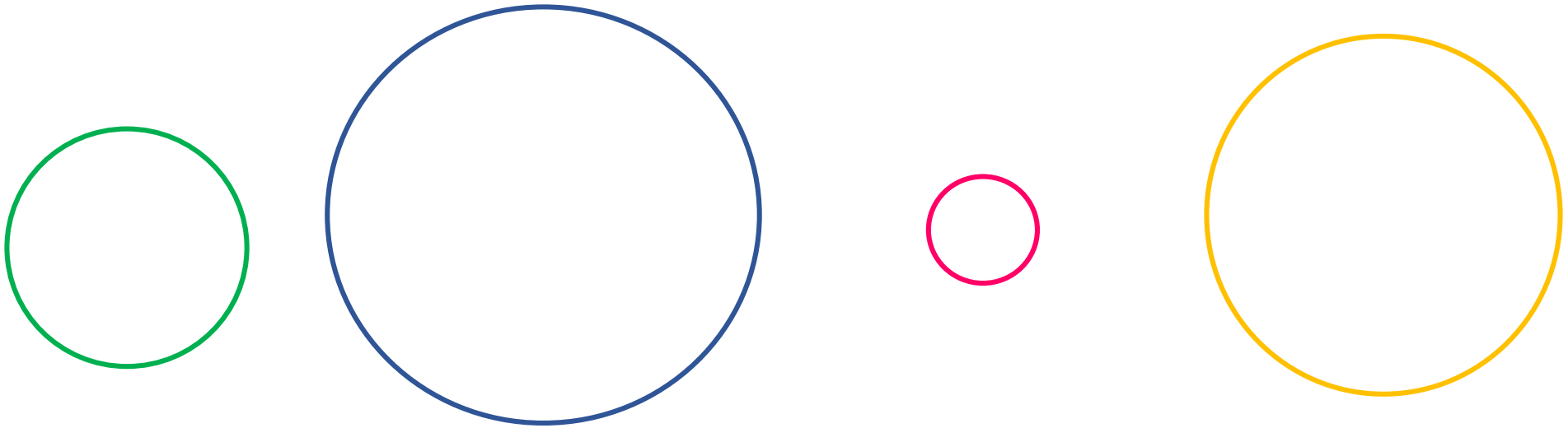




Sort these shapes from biggest to smallest.

Workbook
Page 42

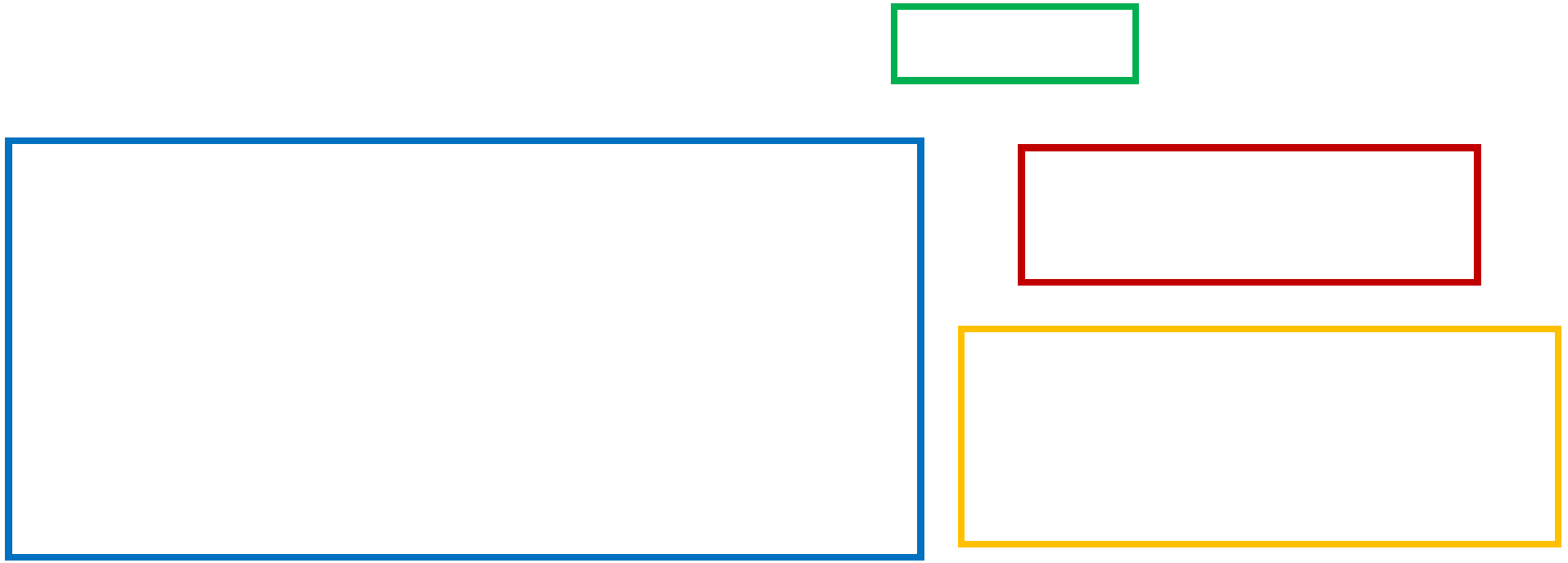
Write numbers.



Sort these according to size, from smallest to biggest.

Workbook
Page 42

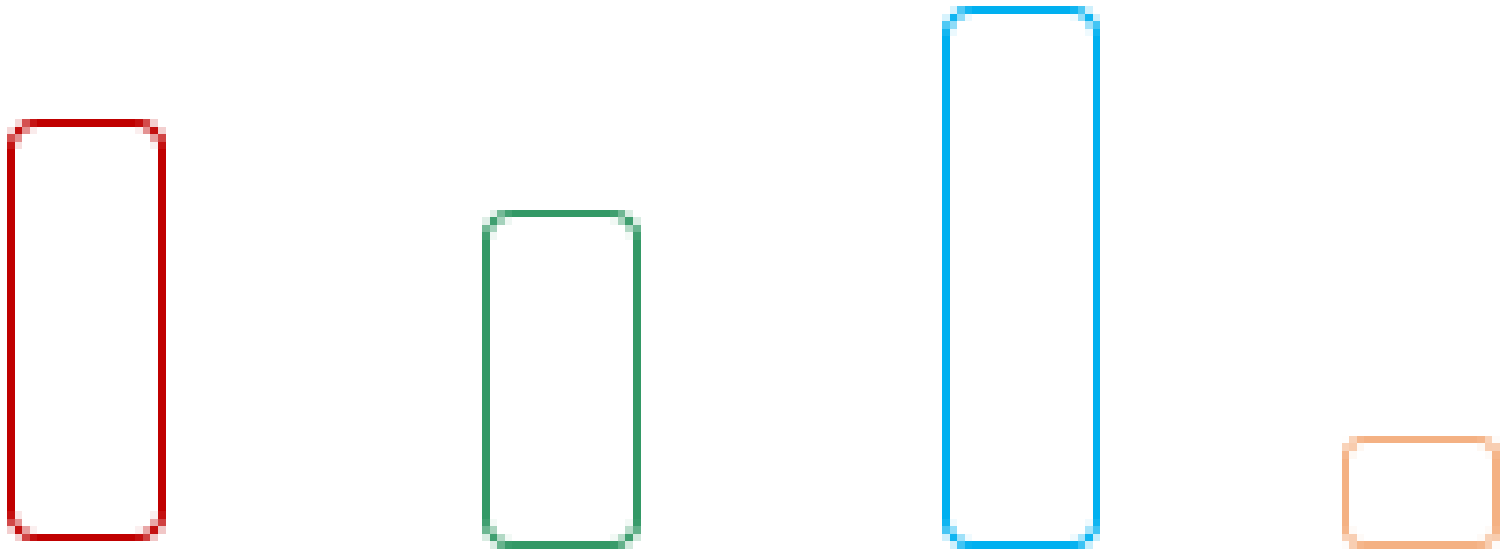
Write numbers.



Workbook
Page 42

Sort these according to size, from tallest to shortest.

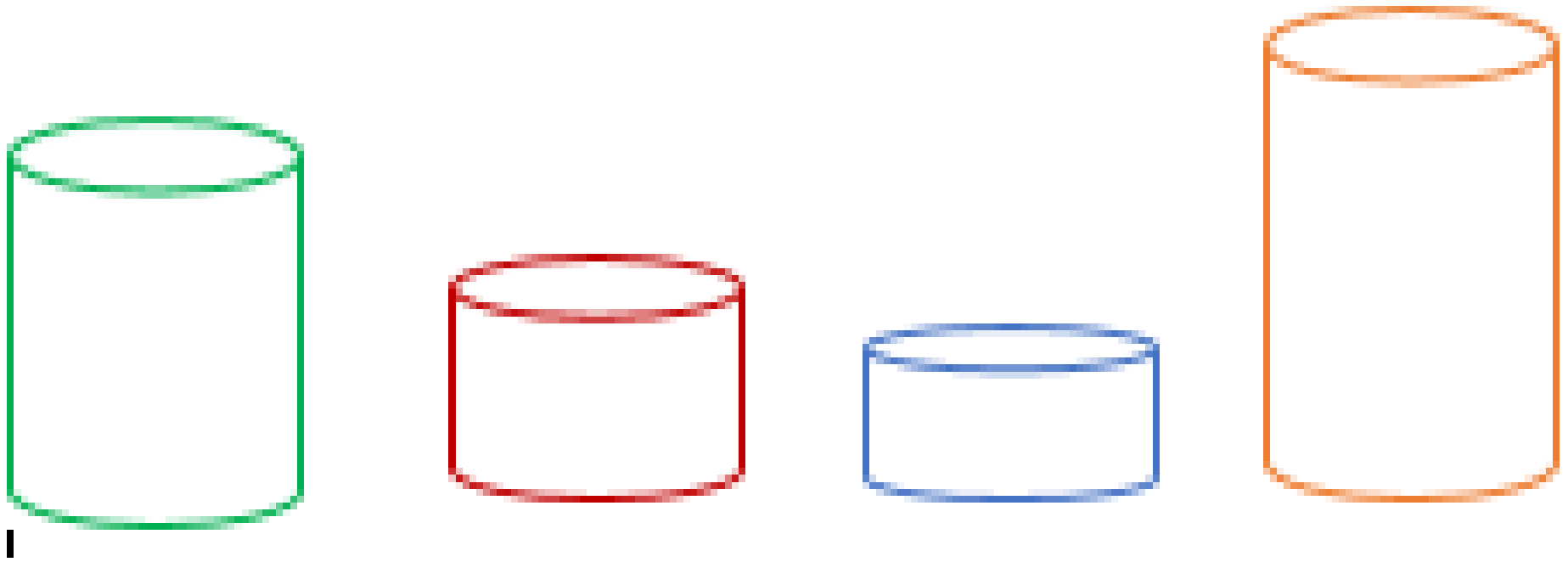
Write numbers.



Sort these shapes from smallest to biggest.

Workbook
Page 43

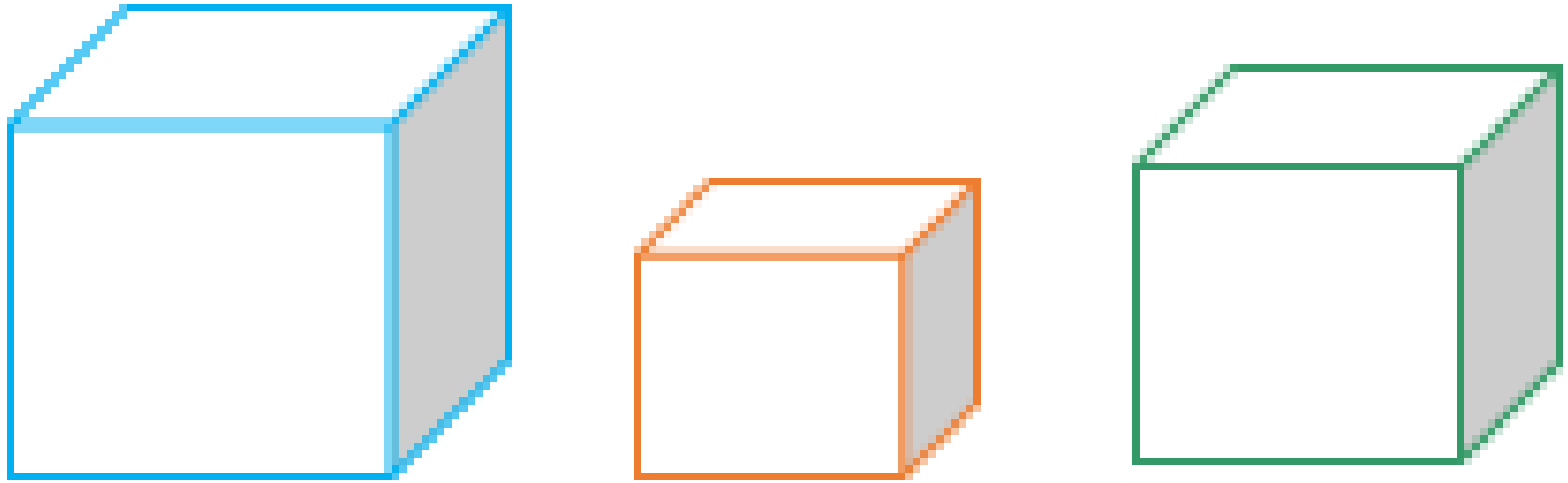
Write numbers.



Workbook
Page 43

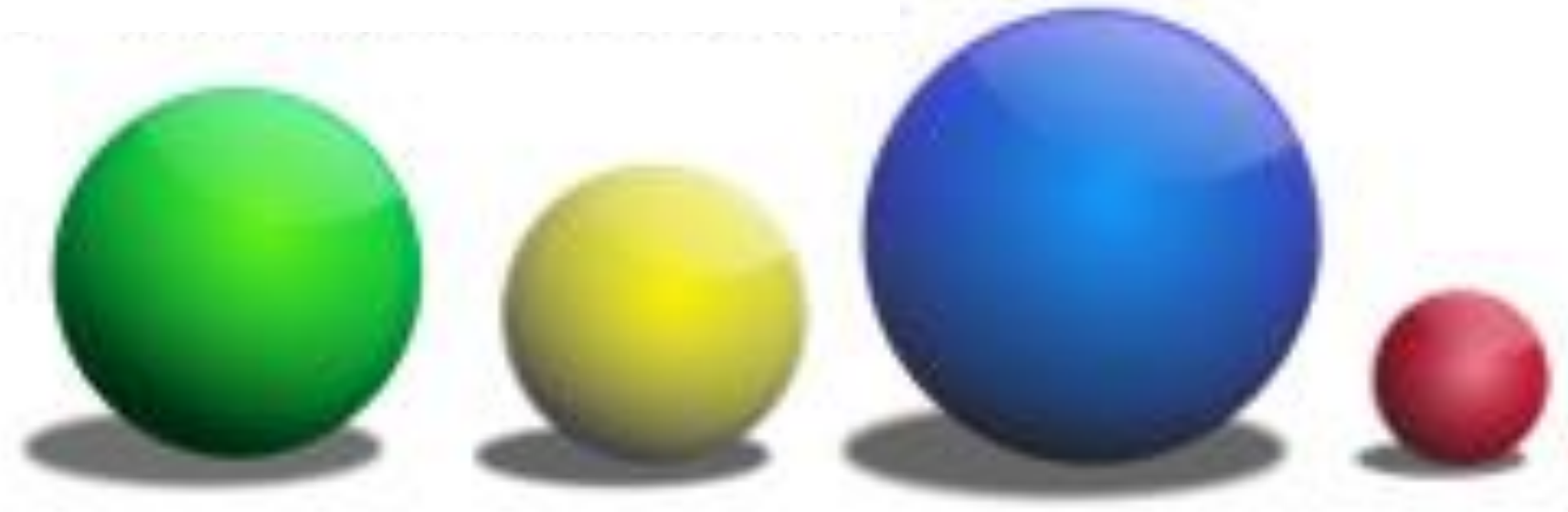
Write these words under the shapes:

- big – bigger – biggest.



Underline the smallest shape.

Workbook
Page 43



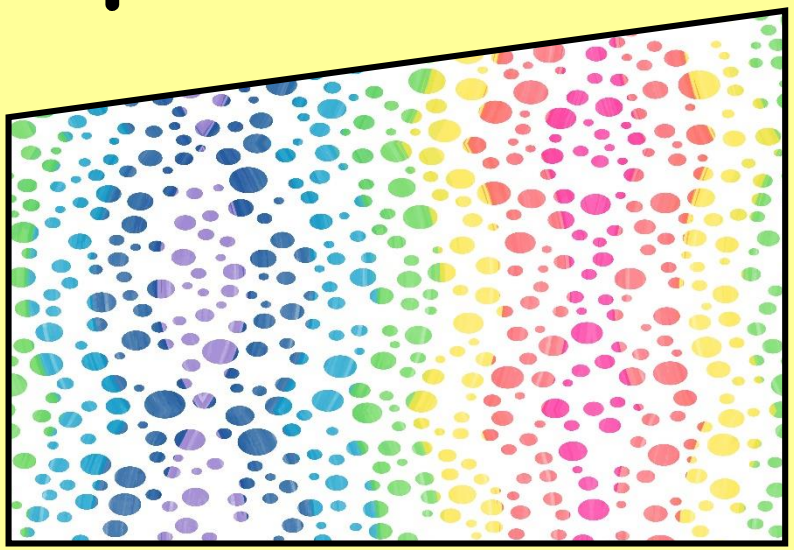
Perimeter

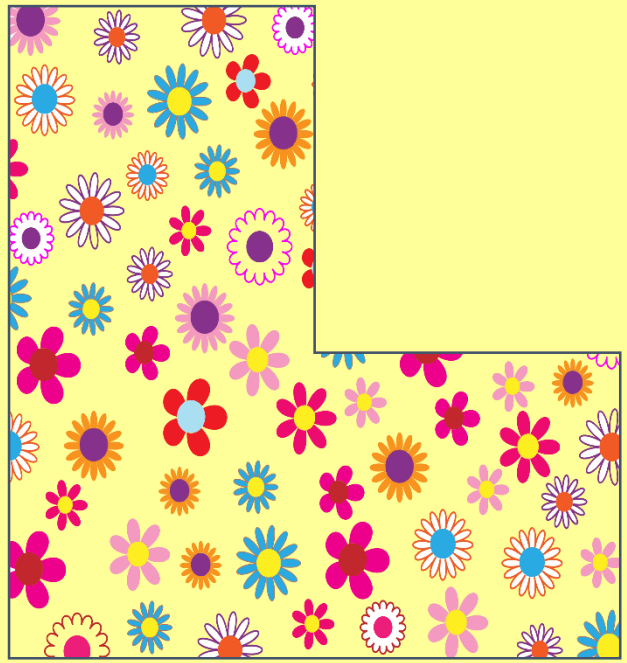
EXTRA

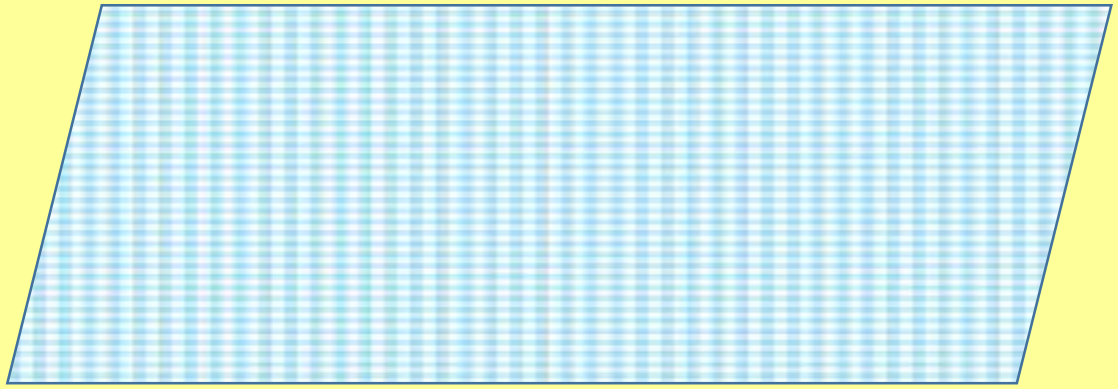
- Perimeter is one-dimensional.
- Perimeter is the **distance around** a **2D object**.
- Example: the red line shows the distance around the grass

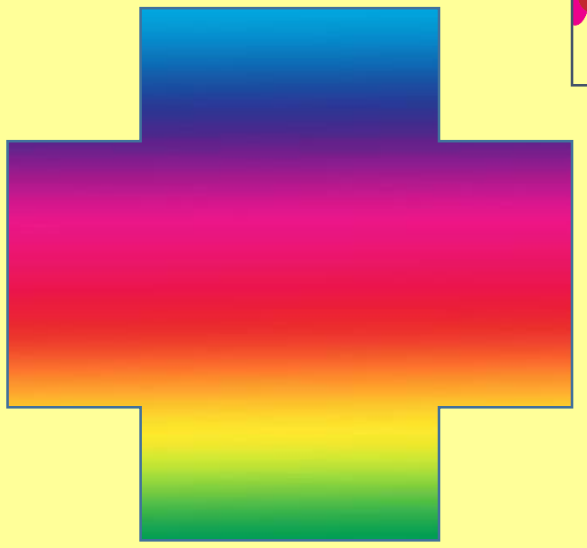
Workbook
Page 48

Draw the perimeters in red.



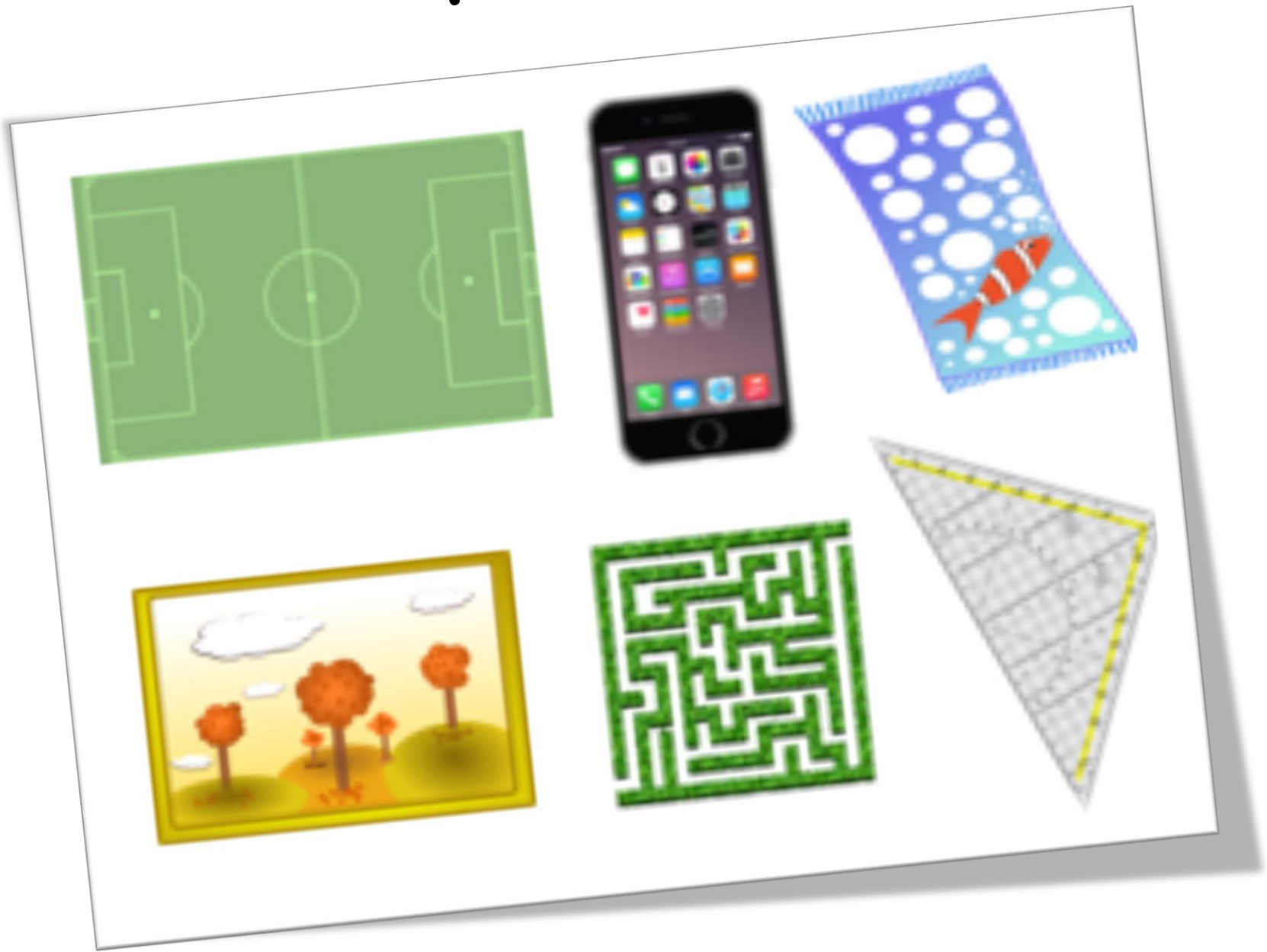






Draw the perimeters in red.

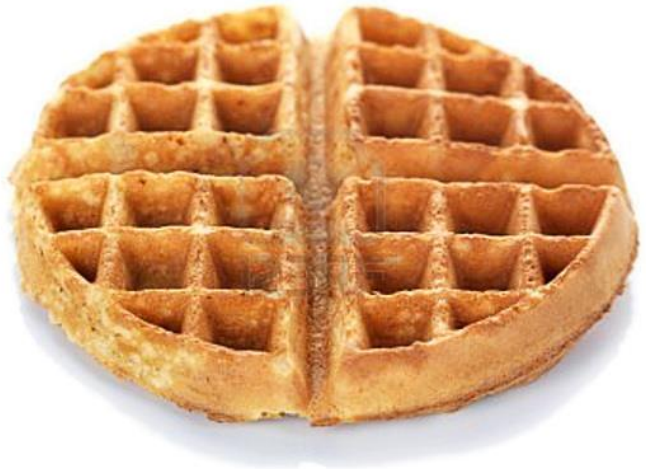
Workbook
Page 48



Draw, in red, the circumferences of these shapes.

Workbook Page 49

The perimeter of a circle is called a circumference.



Workbook
Page 49

Complete the sentences.

2D, one, distance

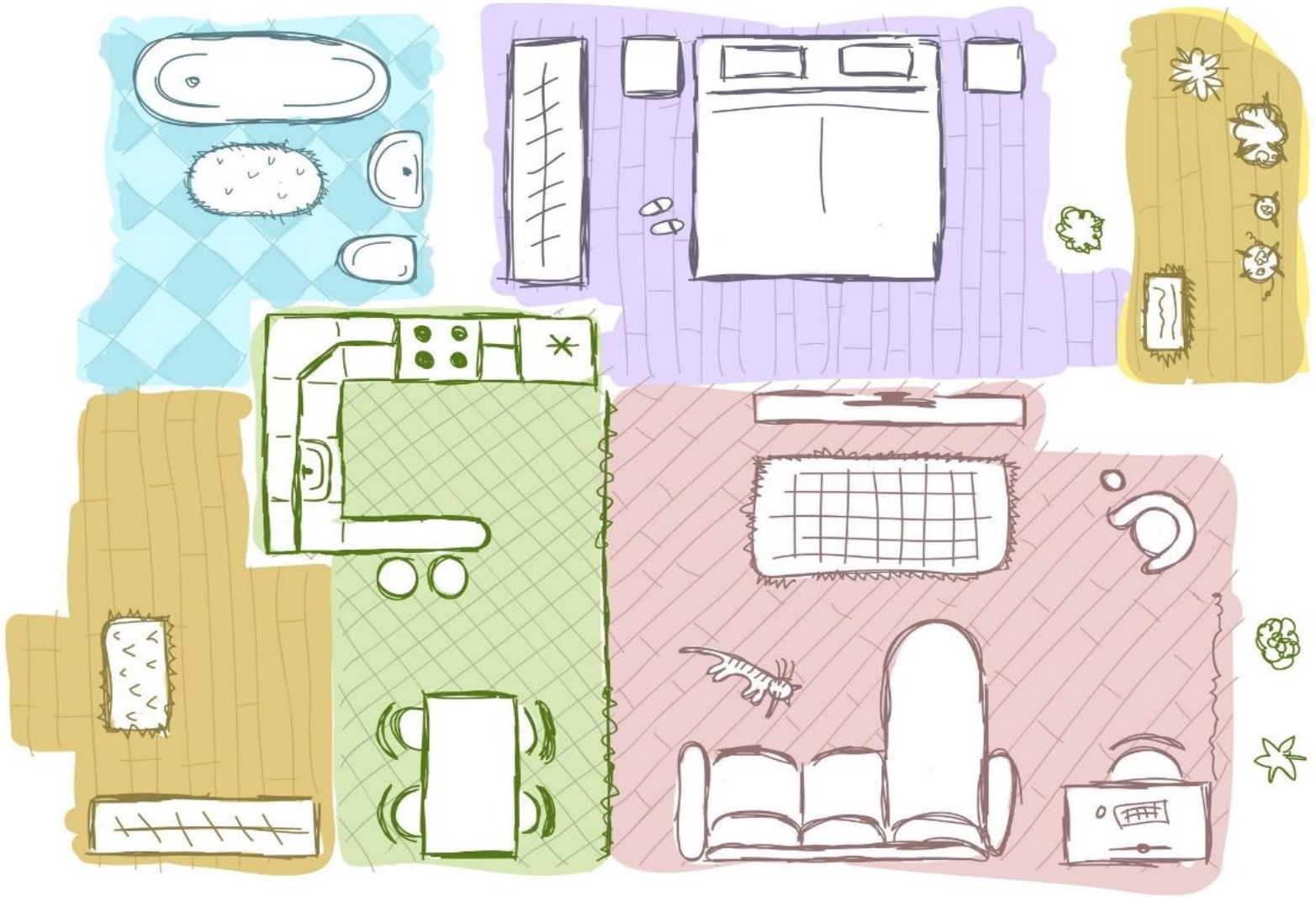
a) Perimeter is _____-dimensional.

b) Perimeter is the _____

around a _____ object.

Draw the perimeter around this home.

Workbook
Page 49



When do we use perimeter?

EXTRA

Example: Putting up a fence around your garden

Example: Making a window frame

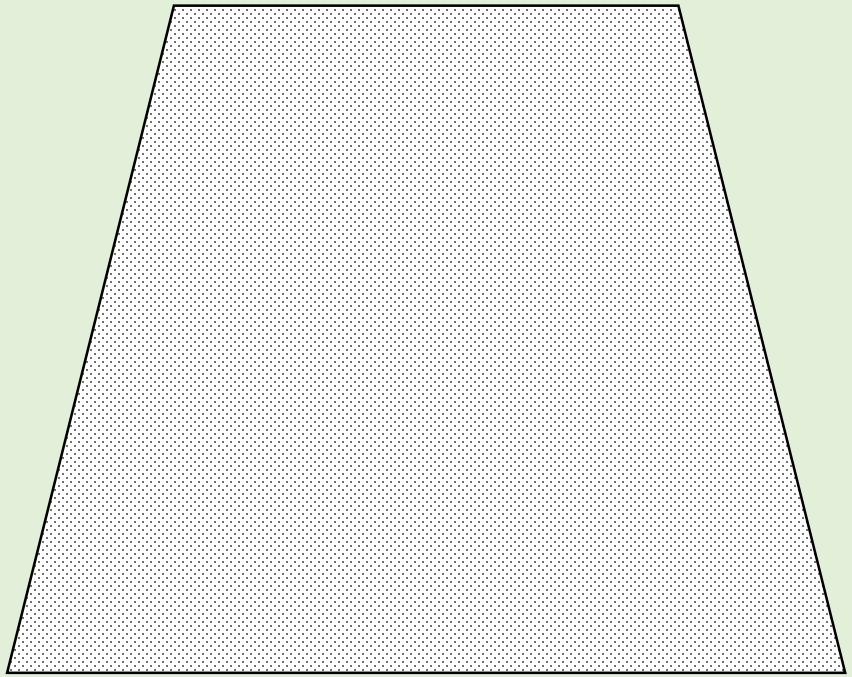
Area

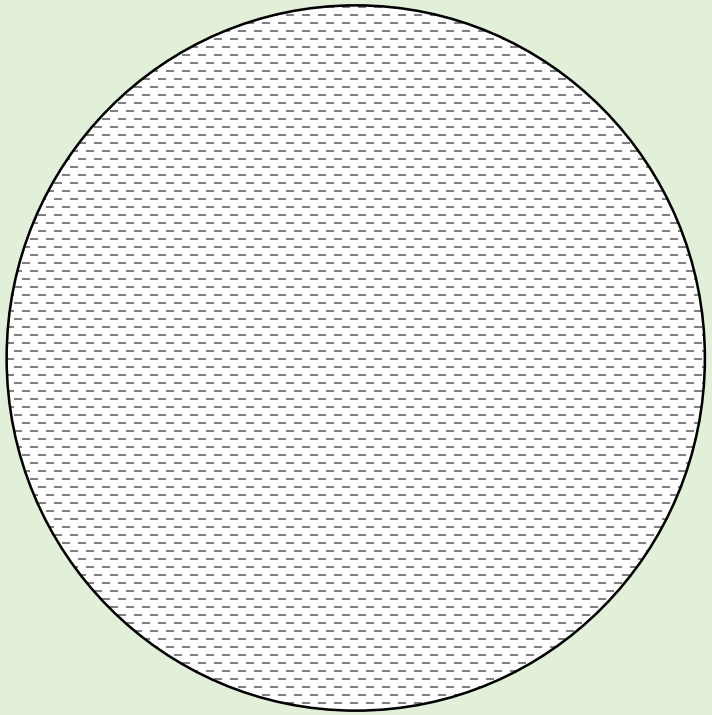
EXTRA

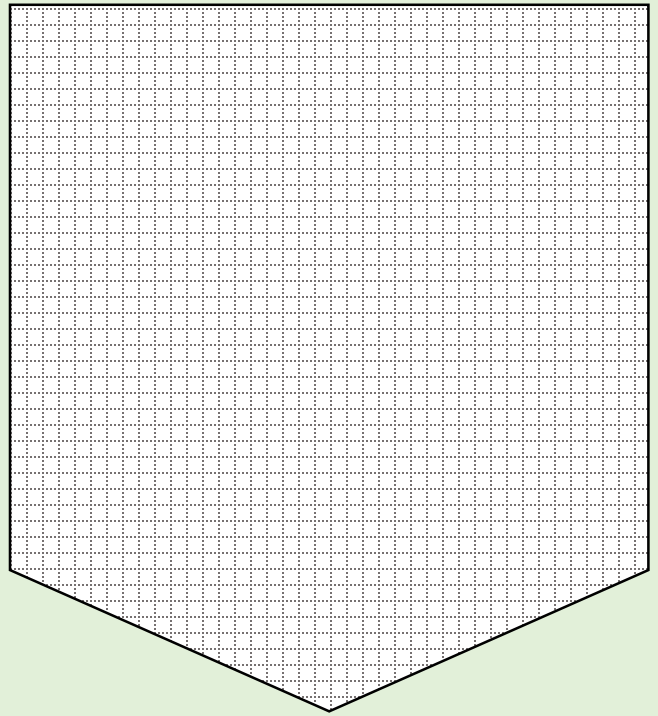
- Area is 2-dimensional.
- Area is the size of a two-dimensional surface.
- Example: if you wanted to work out how much soil you needed for this garden, you would work out the area.

Shade the areas of these shapes.

Workbook
Page 51







Workbook
Page 51

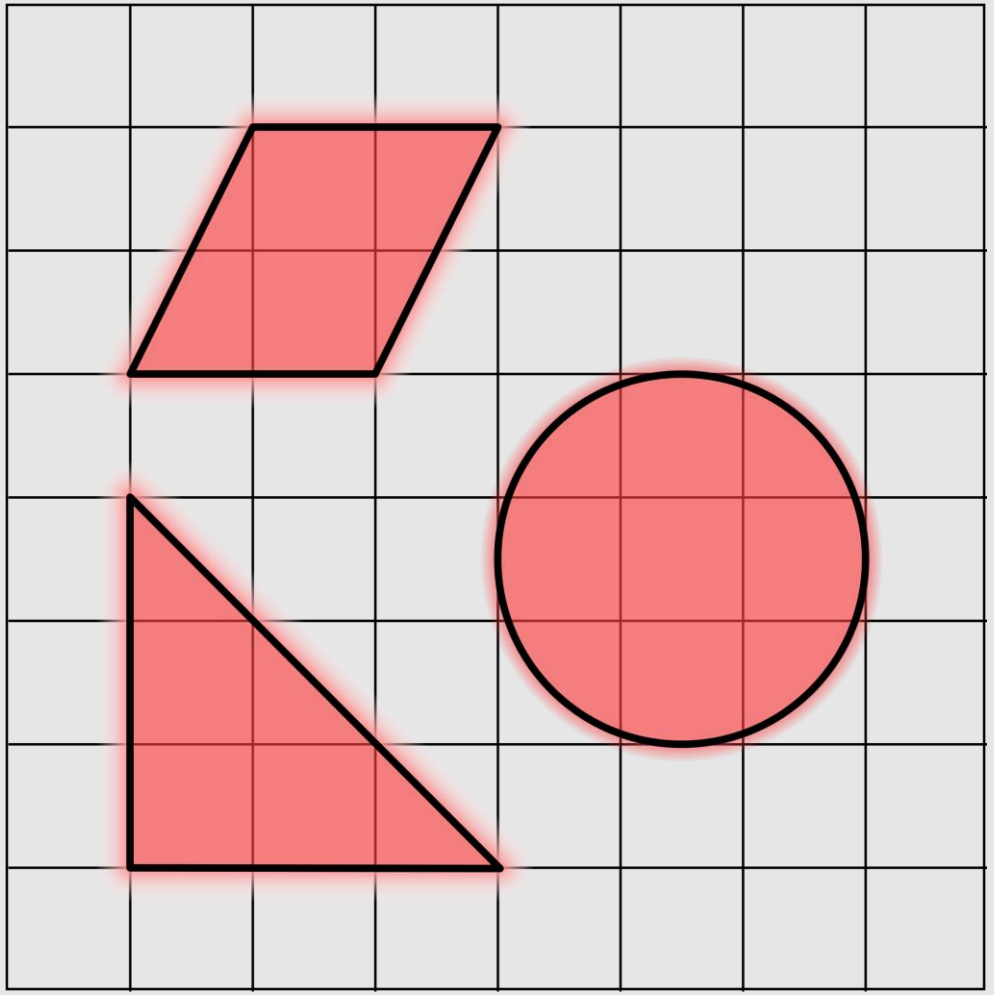
Complete the sentences.

size, 2D, two

a) Area is _____ dimensional.

b) Area is the _____ of a

_____ surface.



EXTRA

What is the area of this garden?

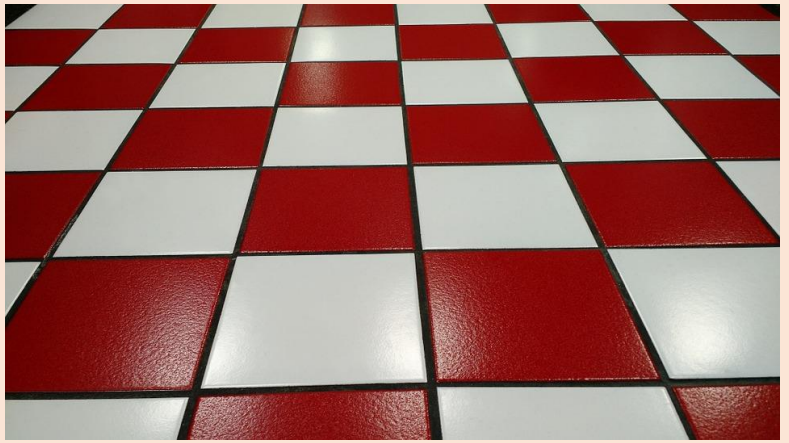
Shade in different areas of this farm, using different colours.

Shade in the area of the wall. Use a different colour to shade in the area of the floor.

When do we use area?

EXTRA

Example: Tiling your floor



Example: Painting a wall

Volume

EXTRA

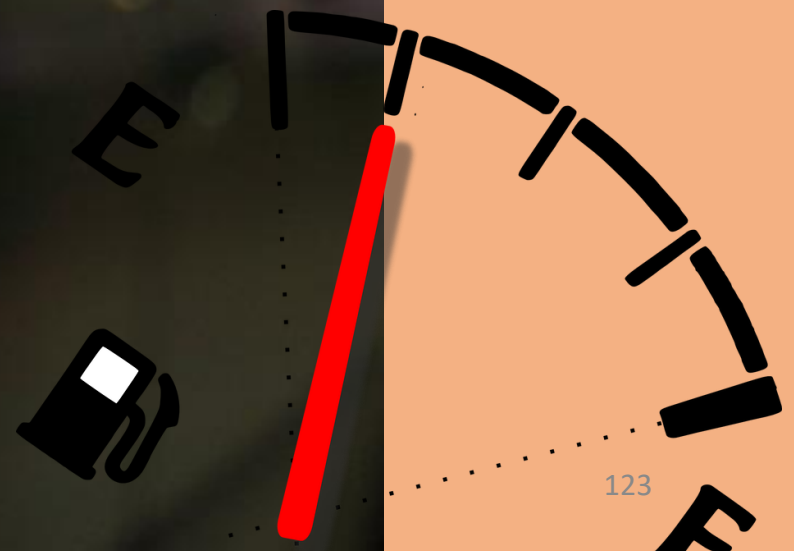
- Volume is 3-dimensional.
- Volume is a measure of how much 3D space an object takes up.
- Example: How much space do these boxes take up?

EXTRA

What volume of water do I need to build a pond?

EXTRA

What volume of petrol do I need to fill my tank?



What volume of flour do I need to make pancakes?

EXTRA

EXTRA

What volume of washing liquid do I need for my laundry?

EXTRA

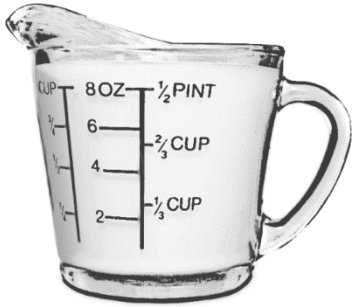
How many cupcakes can I fit in the box?

Name some ways in which we use volume.

Workbook
Page 54

Complete the sentences.

measure, three, 3D



a) Volume is _____ -dimensional.

b) Volume is a _____ of how much

_____ space an object takes up.

Shade in the volumes.

Workbook
Page 54

Workbook
Page 57

Match.

a) Two-dimensional

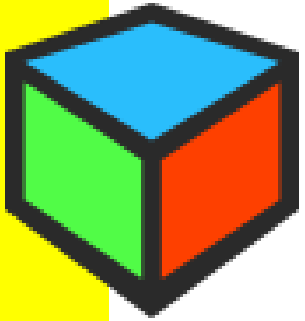
b) Three-dimensional

c) One-dimensional

volume

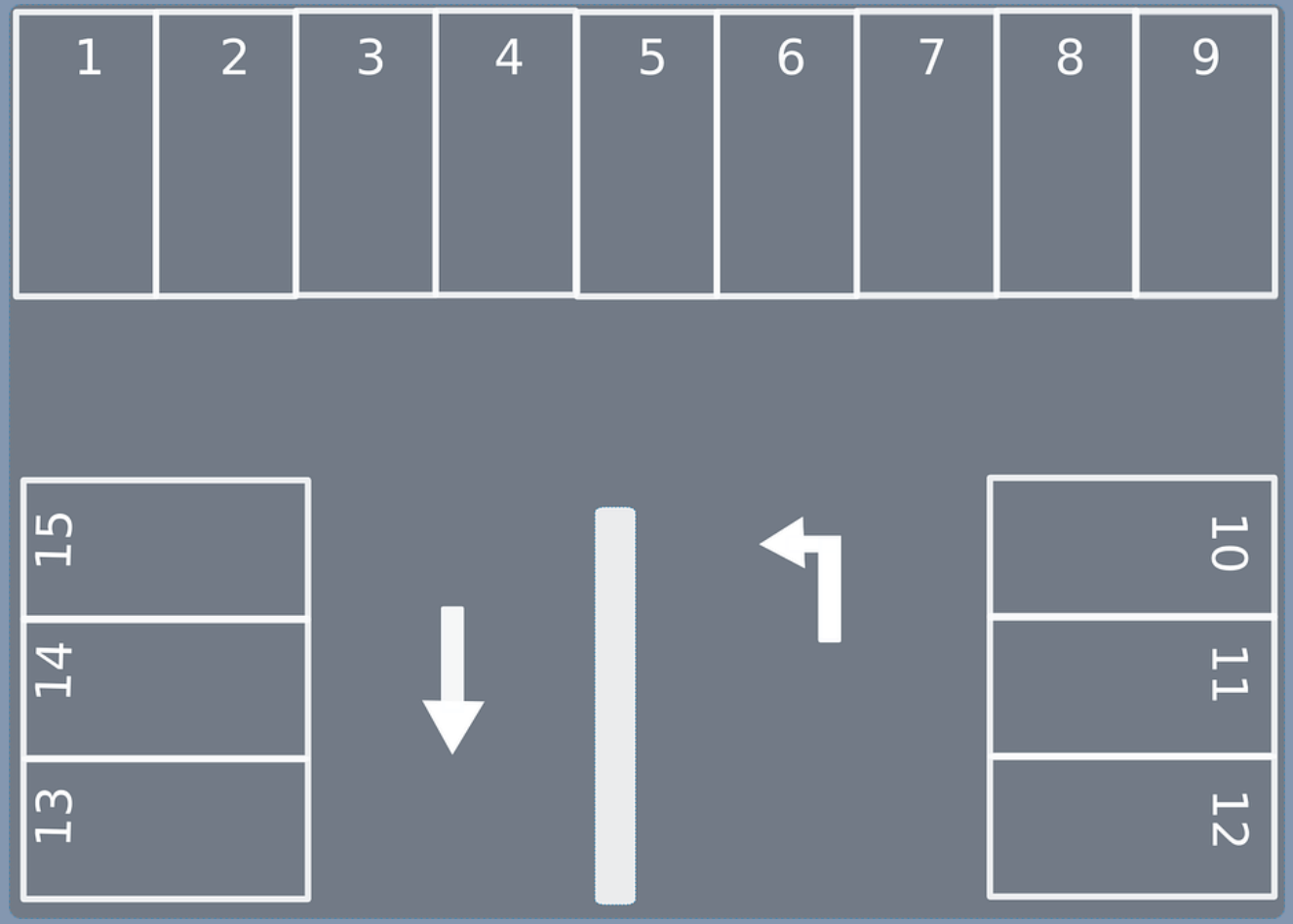
perimeter

area



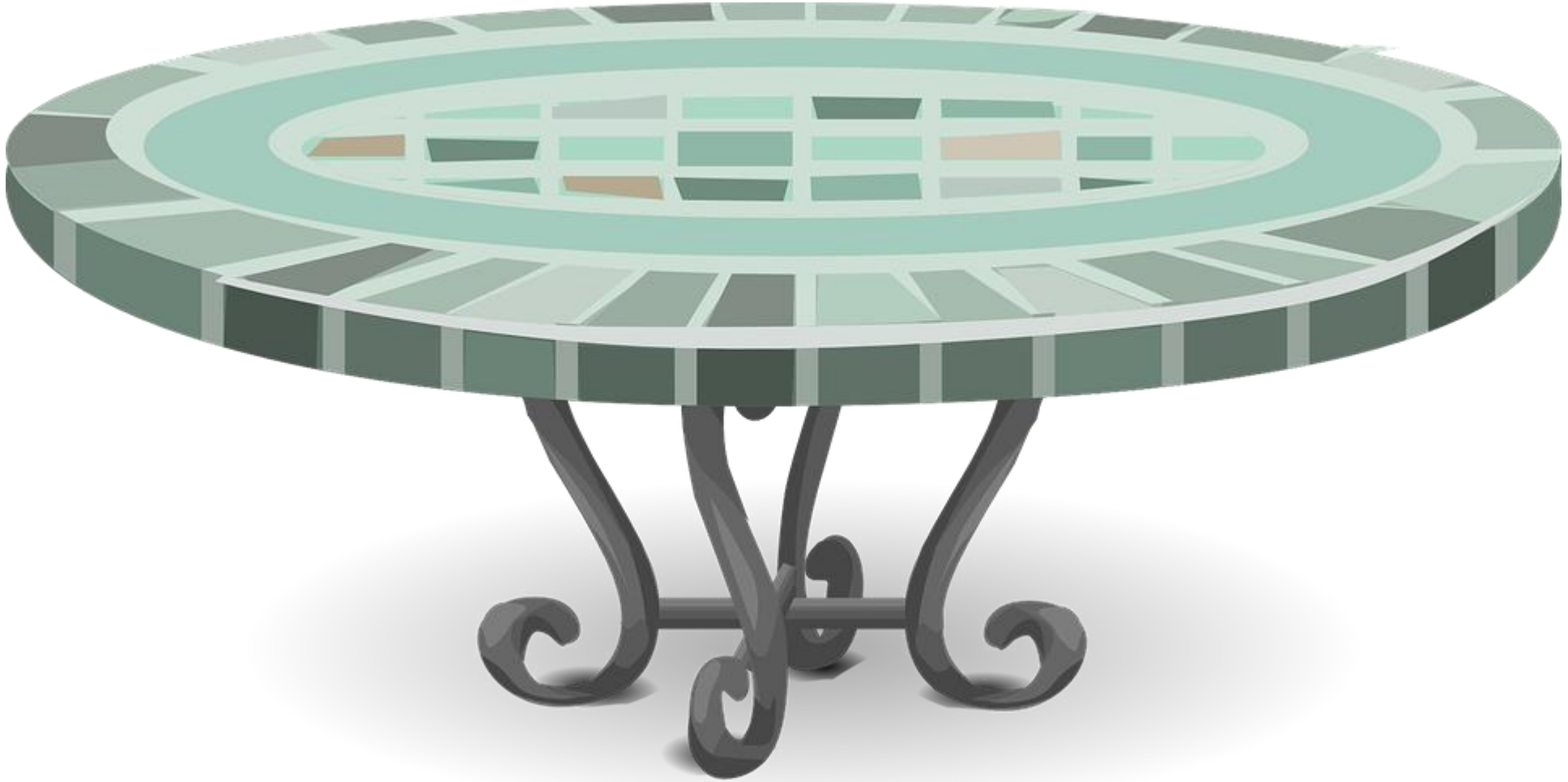
Draw the perimeter of this car park. Shade in the area.

Workbook
Page 57



Draw the circumference of the table top. Shade in the area.

Workbook
Page 57



Complete the sentences.

Workbook
Page 58

volume, perimeter, area

a) _____ is the size of a 2D surface.

b) _____ is the distance around a 2D shape.

c) _____ is the measure of space a 3D object takes up.

Workbook
Page 58

What are you working with?

perimeter, area, volume

a) I am laying new carpet in my living room. I will be using _____.

b) I am adding milk to my cake mixture. I will be using _____.

c) I am making a frame for a photo. I will be using _____.

d) I am putting petrol in my car. I will be using _____.

e) I am putting a fence around my vegetable garden. I will be using _____.

Label the following photo with these labels.

Workbook
Page 60

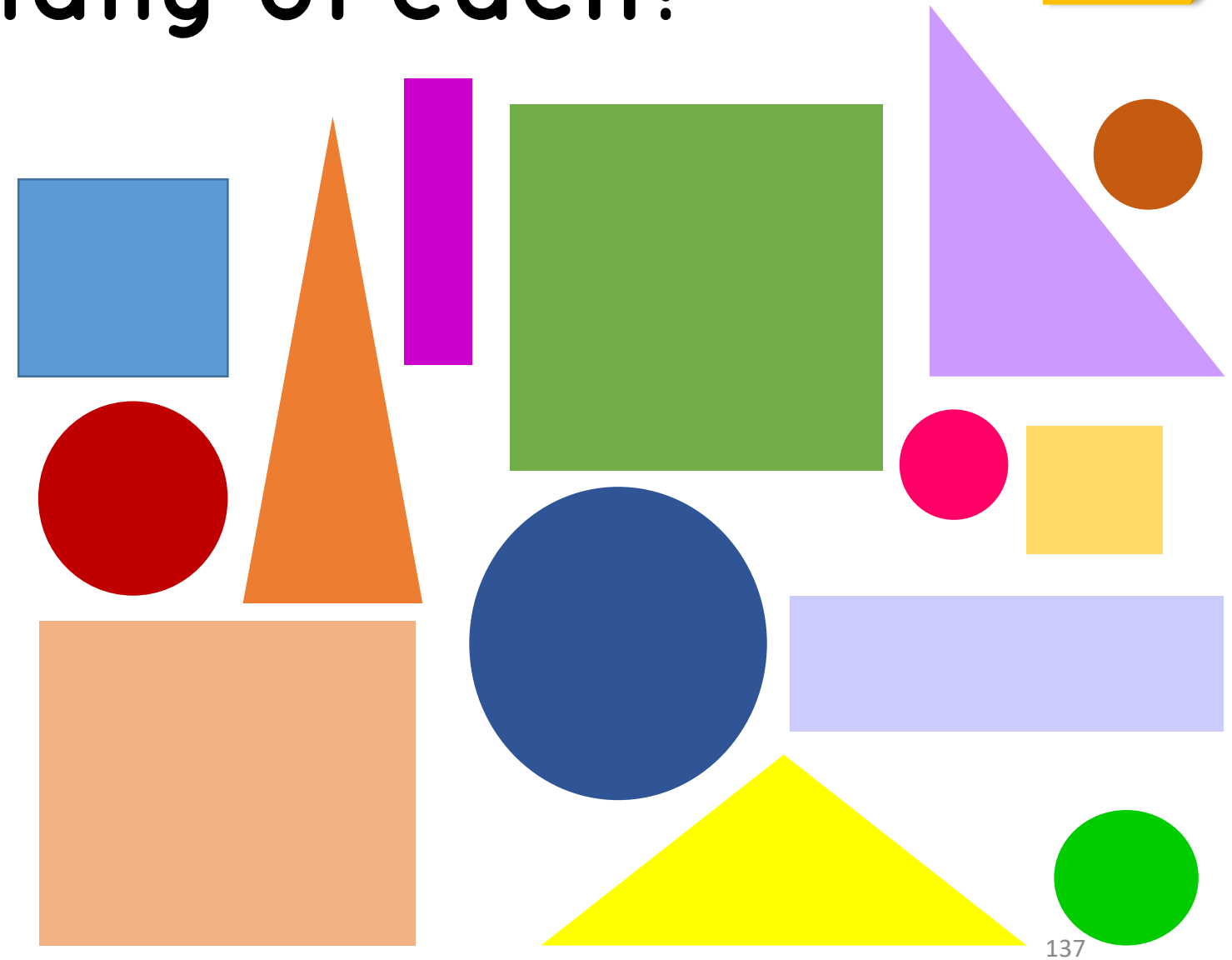
cylinder, rectangle, circle, square, perimeter (show what perimeter you are using), area (show what area you are using - shade it in), volume (show what volume you are using)

Extra sheets

Workbook
Page 37

How many of each?

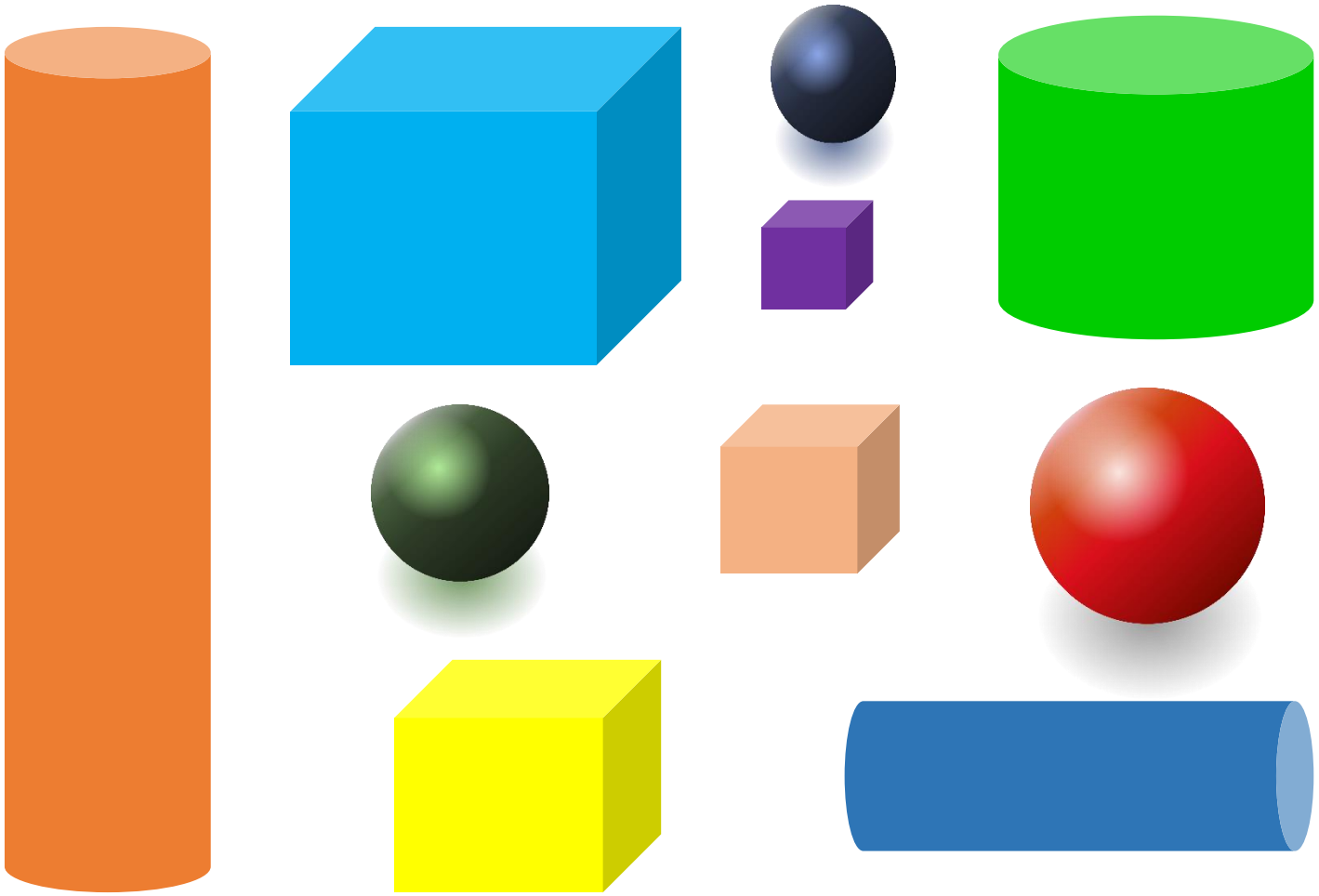
Squares	
Circles	
Rectangles	
Triangles	



Workbook
Page 37

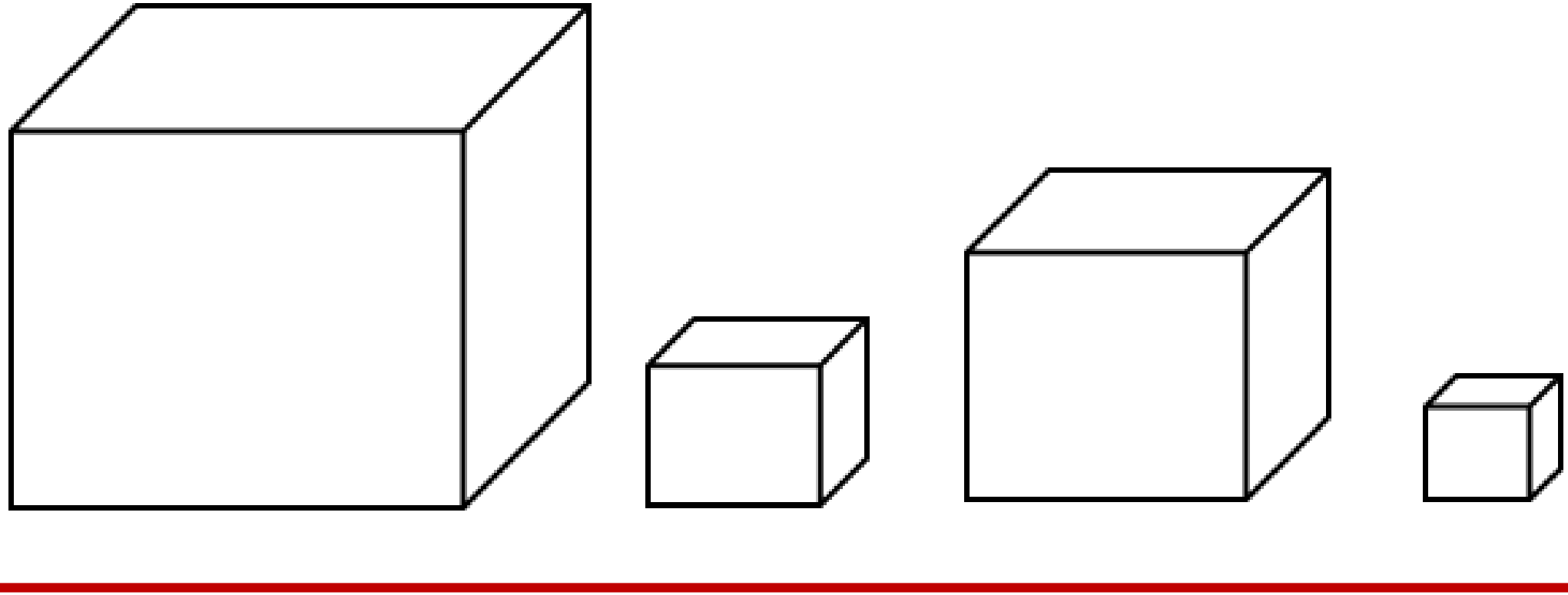
How many of each?

Cubes	
Cylinders	
Spheres	



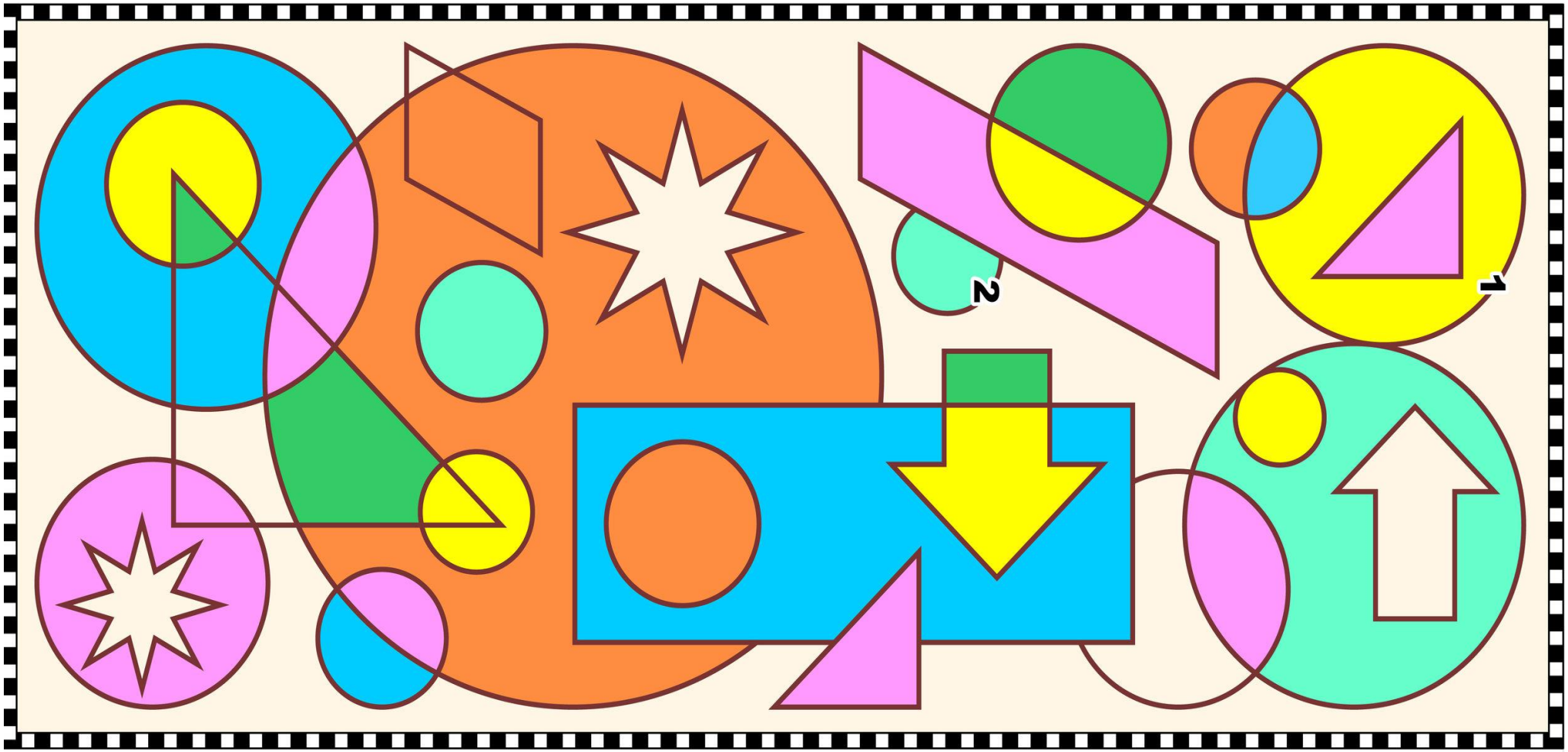
Sort the shapes from smallest to biggest.

Workbook
Page 37



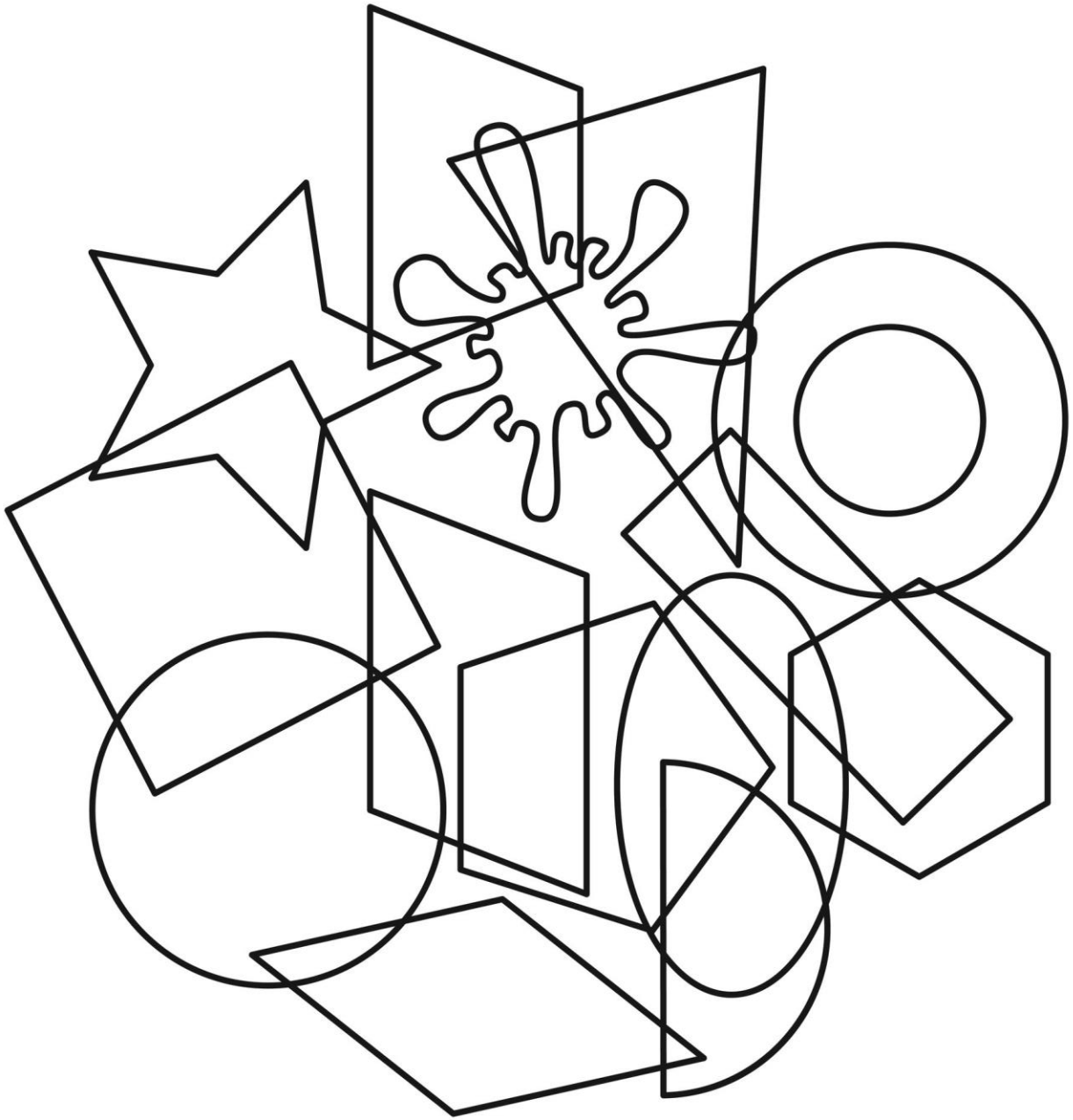
Workbook
Page 38

Find the circles.



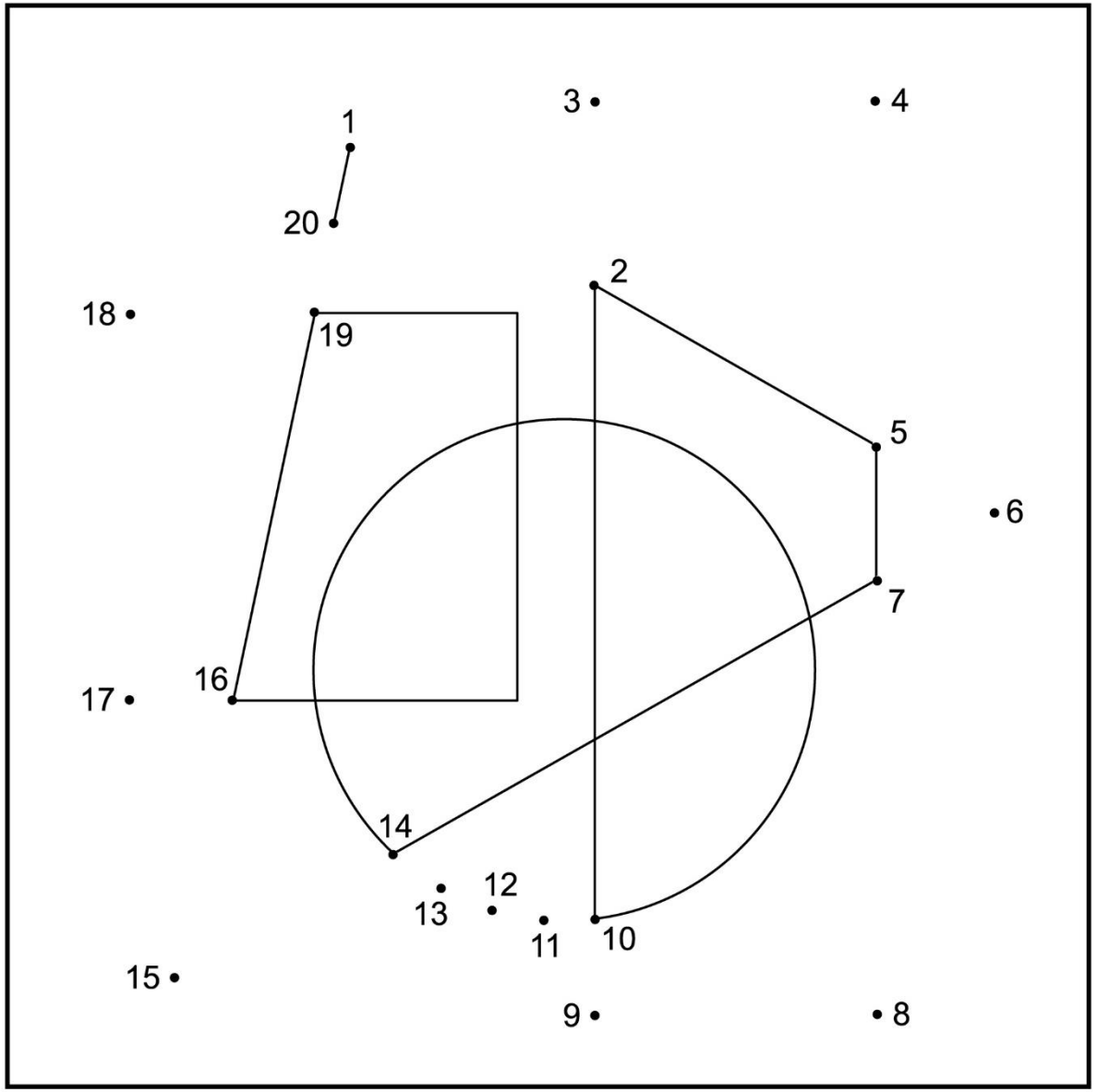
Workbook
Page 39

Outline the shapes.



Workbook
Page 40

Join the dots.




The End