Year 2: Measurement

Length and height

- The children will continue to measure length and heights using a ruler, with a specific focus on **centimetres (cm)**

-Children will understand the importance of starting from zero on a ruler when measuring

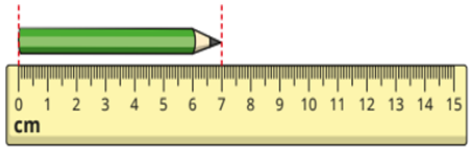
-Children will learn to measure in metres using a metre stick and tape measures. They will be introduced to the abbreviation of **metres (m)**

Feb 2-11:18

Measuring in centimetres

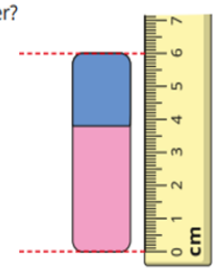
length

How long is the pencil?



height

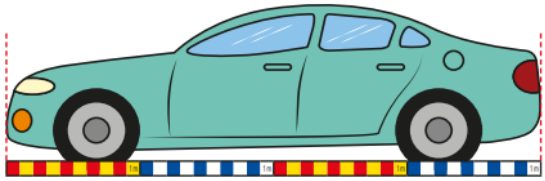
How tall is the rubber?



Measuring in metres

Here are two different coloured metre sticks.

- What is the length of the car?



- What is the height of the shed?

Feb 2-11:37

Measuring in centimetres

Use a pencil and ruler to draw the lines.

4 cm long	10 cm long	6 cm tall	2 cm tall

(long)

(tall)

Measuring in metres

Give children a metre stick and ask them to measure the lengths and heights of different objects in the classroom to the nearest metre.

Get them to say out loud: "_____ is _____ metres long/tall."

Ask them to record their measurements, using m as their units.

Feb 2-12:04

Reasoning and problem solving

Ron and Jo want to measure the length of the string.

It is impossible!

Ron

Explain why Ron thinks this.

I think that I can find a way.

Jo

What way might Jo be thinking of?

Explore with pieces of string.

Kim and Max want to measure the length of the playground.

I am going to measure in centimetres.

Kim

I am going to measure in metres.

Max

Whose way of measuring will be easier?

Explain your answer.

Feb 2-11:43

Comparing length and height

Children will be applying key vocabulary such as 'longer than', 'taller than' and 'shorter than' to **compare length** and height of different objects. They will also use inequality symbols to do this (<, > and =)

-Children will not be expected to convert measurements in order to compare, for example, they might compare 6cm and 6m but this doesn't require conversions

Feb 3-13:19

Comparing length and height

Key learning

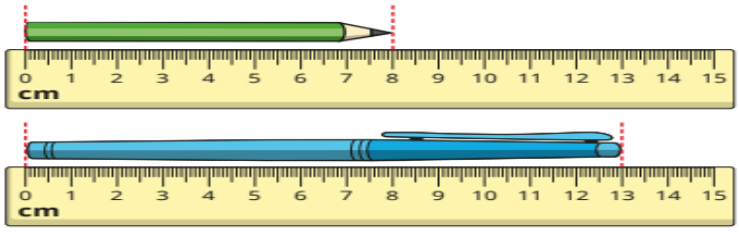
Give children two objects.

Ask them, without measuring, which is longer.
How do they know?

Now ask them to measure the length of each object. Ask how this shows which one is longer. What do they notice?

Repeat for finding which of a pair of objects is taller.

Kay measures the lengths of a pencil and a pen.



- How long is the pencil? How long is the pen?
- Write **longer** or **shorter** to complete the sentences.
  The pen is _____ than the pencil.
  The pencil is _____ than the pen.

Write <, > or = to complete the statements.

7 metres ◯ 17 metres

18 cm ◯ 18 m

32 cm ◯ 32 centimetres

Feb 2-12:06

Ordering length and height

Children to **order objects** based on their height or length

Feb 3-13:21

Ordering length and height

Give children three objects.

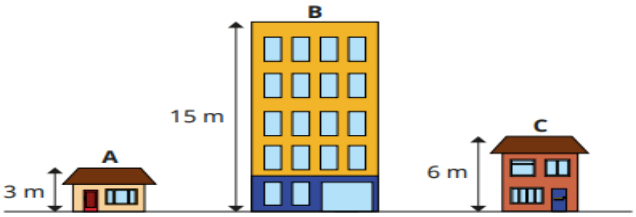
Ask them, without measuring, which is the longest. How do they know?

Ask them which is the shortest. How do they know?

Now ask them to measure the length of each object. Ask how this shows which one is the longest and which one is the shortest. What do they notice?

Repeat for finding which objects are the tallest and shortest.

The height of three buildings is shown.



- Which building is the tallest?
- Which building is the shortest?
- Put the buildings in order, from tallest to shortest.

Write the lengths in order.

Start with the shortest length.

25 cm	7 cm	10 cm

Feb 2-12:09

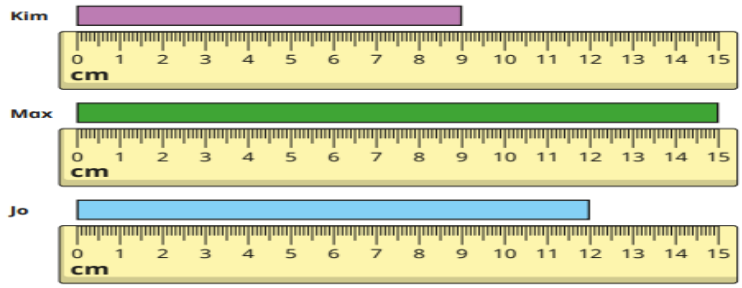
Four operations

Children to use their knowledge of the four operations to solve one step and two step problems related to length and height. They use concrete and pictorial representations to support them.

Feb 3-13:22

Four operations

- Kim, Max and Jo each have a piece of ribbon.



- How much longer is Max's ribbon than Kim's?
- Max and Jo put their ribbons together.
  How long are they altogether?

A pencil is 12 cm long.

A pen is 3 cm longer than the pencil.

- How long is the pen?
- What is the total length of the pen and the pencil?

Ben has a toy train, a toy plane and a toy car.

- The train is 28 cm long.

  The plane is 16 cm longer.

  How long is the plane?
- The train is double the length of the car.

  How long is the car?

Feb 2-12:11

Reasoning and problem solving

There are three teddies called Flo, Tim and Bo.

- Flo is 15 cm taller than Tim.
- Tim is 3 cm shorter than Bo.
- Bo is 42 cm tall.

How tall is Flo?

How tall is Tim?

How much taller is Flo than Bo?

How did you work out the answers?

Feb 2-12:13

Year 2: Measurement

Mass and capacity

- Children are introduced to standard units of measure. They will practically explore grams (g) and kilograms (kg) using balance scales and circular scales, recognising that kilograms are heavier than grams. They will then apply the four operations to solve problems relating to mass.

- A similar process will be followed for measuring capacity using the units millilitres (ml) and litres (l).

Feb 2-11:18

Measuring in grams

Ask children to pick up three different weights and then look for an object that they think has the same mass as one of the weights.

Children can use balance scales to see how accurate they were.

- What is the mass of each object?

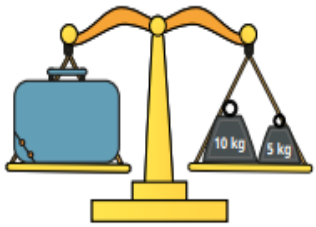
How did you work it out?

Measuring in kilograms

Ask children to pick up three different weights and then look for an object that they think has the same mass as one of the weights.

Children can use balance scales to check.

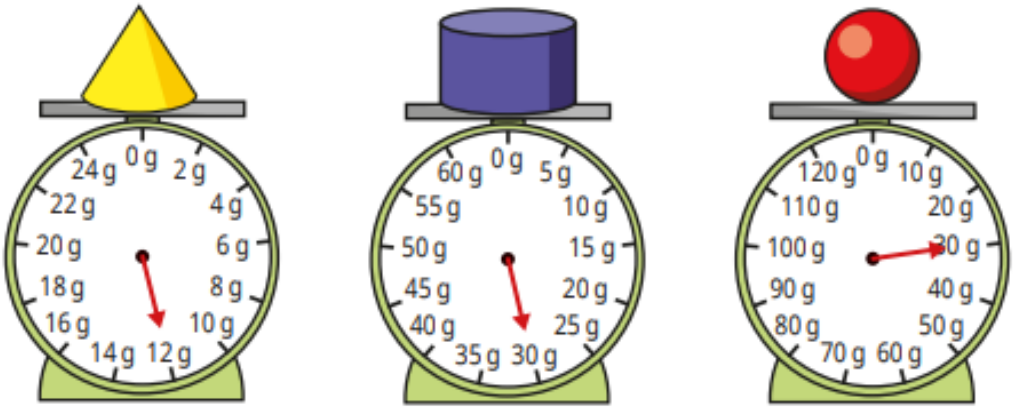
- What is the mass of each object?



Feb 2-12:43

Measuring in grams

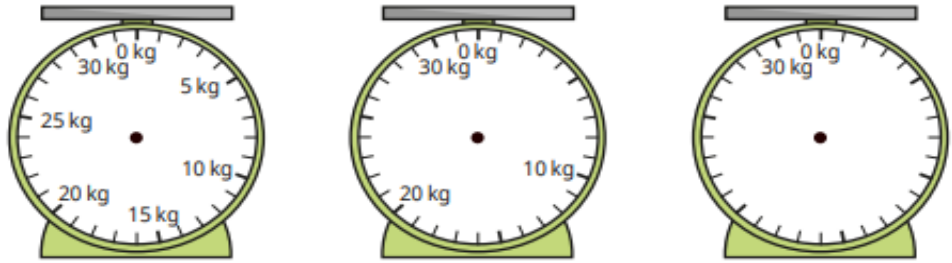
What is the mass of each 3-D shape?



Measuring in kilograms

- Mark the masses on the scales.

5 kg | 12 kg | 17 kg



Feb 2-12:43

Applying the four operations to mass

Complete the sentences.

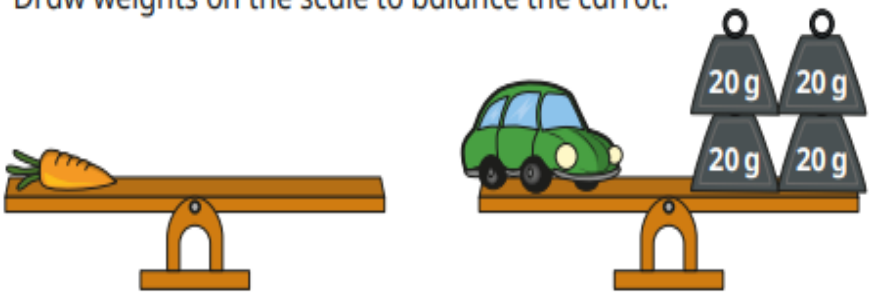
The mass of the strawberry is _____ g.

The mass of the cherry is _____ g.

The total mass of a strawberry and a cherry is _____ g.

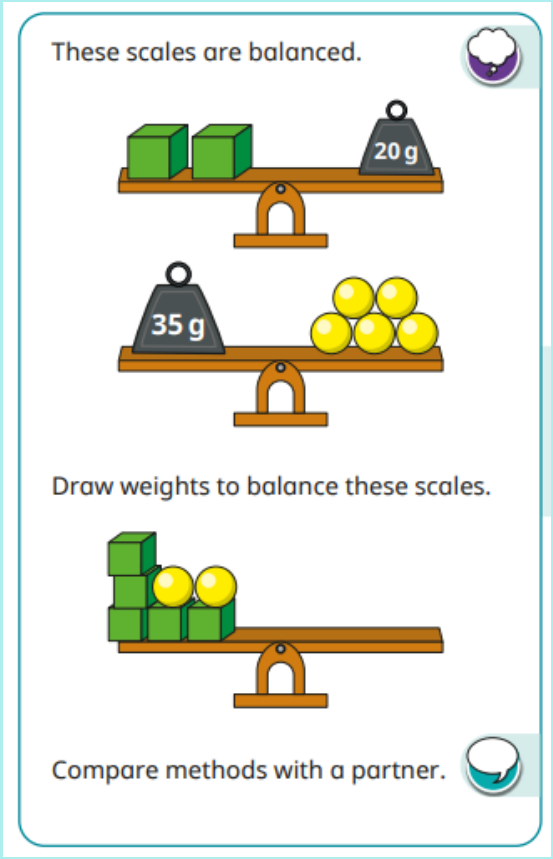
The carrot is 40 g lighter than the car.

Draw weights on the scale to balance the carrot.



Reasoning and problem solving question

Greater depth example



Feb 2-12:47

Measuring in millilitres

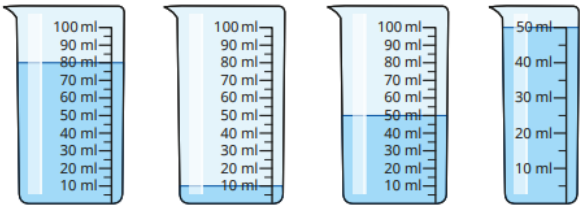
Provide a variety of different containers with millilitres clearly labelled, for example measuring spoons, measuring jugs and measuring beakers. Pour some water into each container.

Ask children to measure the volume of water in each container.

Challenge them to estimate the capacities of containers that have no scale.

They can check their answers by filling the containers and then pouring the water into a measuring jug.

- How much water is there in each beaker?

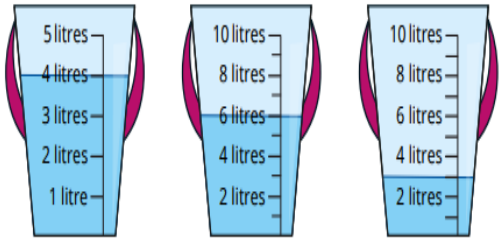


Measuring in litres

Provide a variety of containers labelled in litres for children to measure the capacities of different containers.

Challenge children to estimate the capacities and to check how accurate they were.

- How much water is there in each bucket?

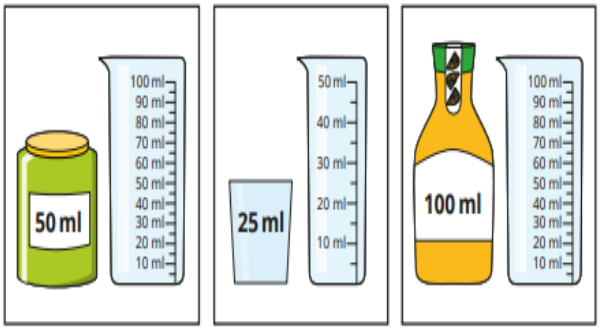


Feb 2-12:49

Measuring in millilitres

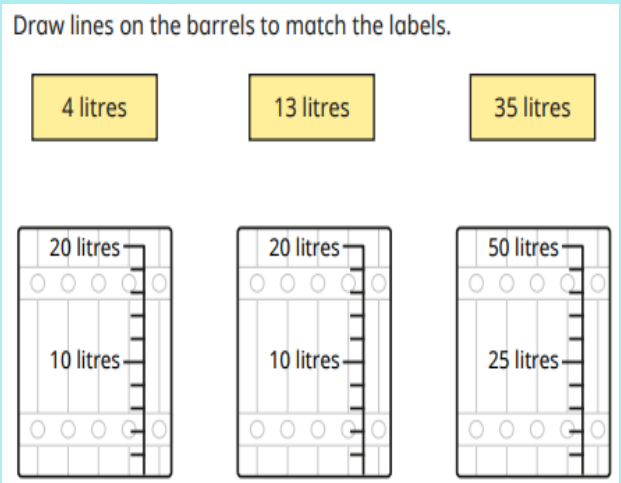
Each container is emptied into a beaker.

Draw a line on each beaker to show the volume of liquid.



Measuring in litres

Draw lines on the barrels to match the labels.

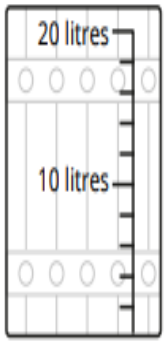


Feb 2-12:49

Applying the four operations to capacity

Tom pours 2 litres of water into the barrel 6 times.

Draw a line to show where the water reaches.



Fay and Dan both have some milk.

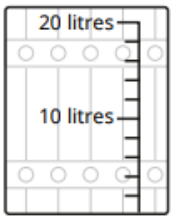
Fay

Dan

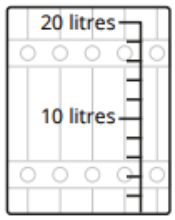
They each pour their milk into a barrel.

Draw a line to show where the milk will reach in each one.

Fay



Dan



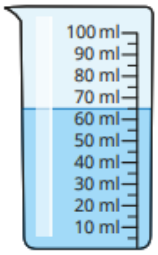
Feb 2-12:50

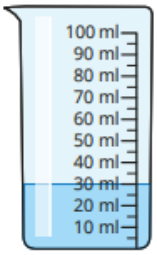
Reasoning and problem solving

Max and Kim each have some water.

Max

Kim





Max pours out 20 ml of his water.

Kim adds 17 ml to her water.

Who has more water now?

How do you know?

Feb 2-12:53

Measuring temperature

-Children are introduced to temperature thermometers and the unit 'degrees Celcius' written for the first time ℃

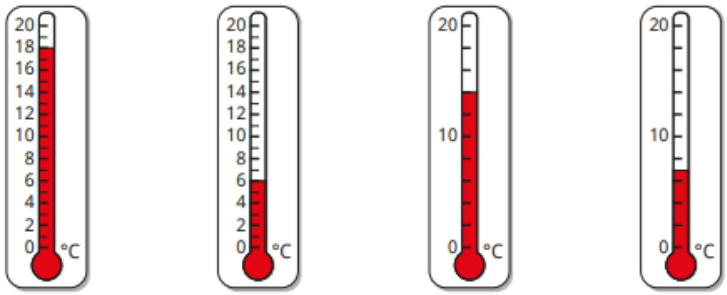
-Children will discuss language associated with temperature (cold, warm and hot) and will recognise that the temperature is higher when the weather is warmer. Children will colour thermometers to represent temperatures

Measuring temperature

Take temperatures around the school.

Get children to compare the different temperatures in different rooms using language such as warmer, hotter and colder.

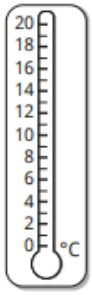
What temperature is shown on each thermometer?



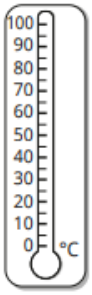
Write the temperatures in order, starting with the coldest.

Colour the thermometers to show the temperatures.

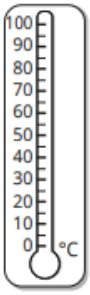
16 °C



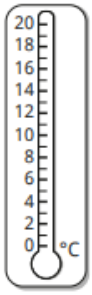
70 °C



35 °C

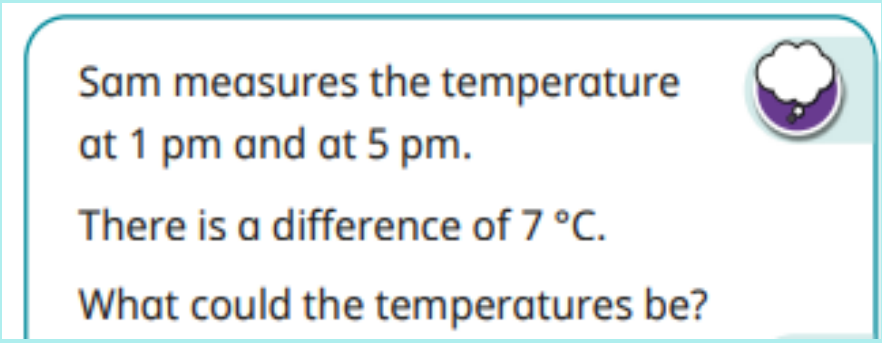


9 °C



Feb 2-12:56

Reasoning and problem solving question



Feb 2-12:58

Year 2: Geometry

Shape

-Children recap recognising 2-D and 3-D shapes

-They learn the properties of 2-D shapes, counting the number of sides and use this information to help them identify what the shape is

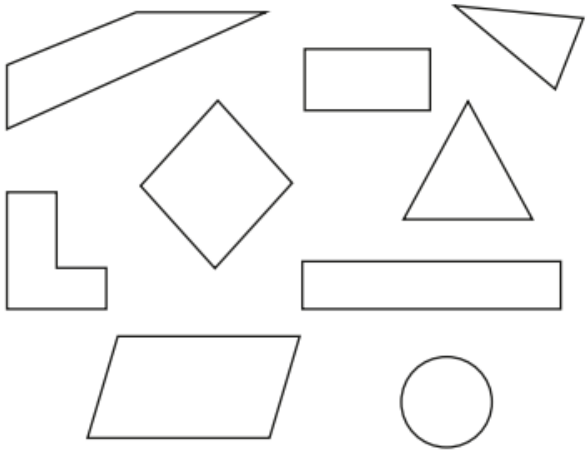
Feb 2-11:18

Counting sides of 2-D shapes

Match the shapes to the number of sides.

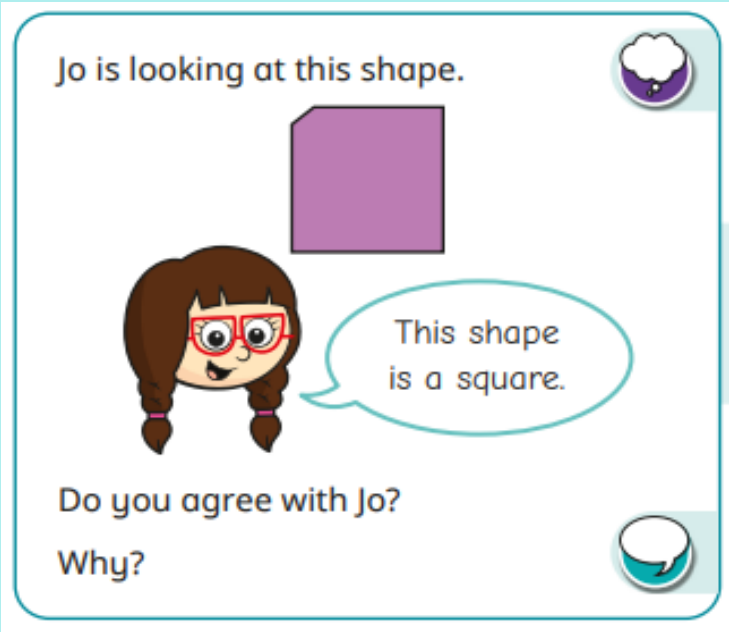
six | four | three

Colour the shapes with four sides.



What do you notice?

Reasoning question



Feb 2-16:02

Counting vertices of 2-D shapes

-Learn what a vertex is and identify how many vertices each shape has. They should be able to identify the relationship between the sides and vertices of a shape

Feb 2-16:03

Counting vertices of 2-D shapes

Match the shapes to the number of vertices.

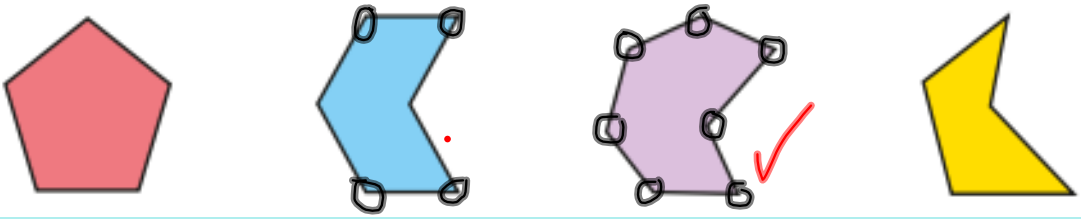



six four three

Feb 2-16:04

- How many vertices does each shape have?

  Mark them as you count so that you do not miss any.



Feb 2-16:06

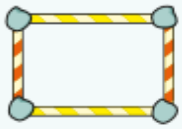
Draw 2-D shapes

-Children will learn to use their knowledge of sides and vertices to help them draw 2-D shapes using a ruler

Feb 2-16:08

Draw 2-D shapes

Show children how to make a rectangle using straws and modelling clay.



Ask children what the modelling clay represents.

Ask them what the straws represent.

Ask children to make a square and a triangle.

Can they make any other shapes?

- Ron is drawing shapes.

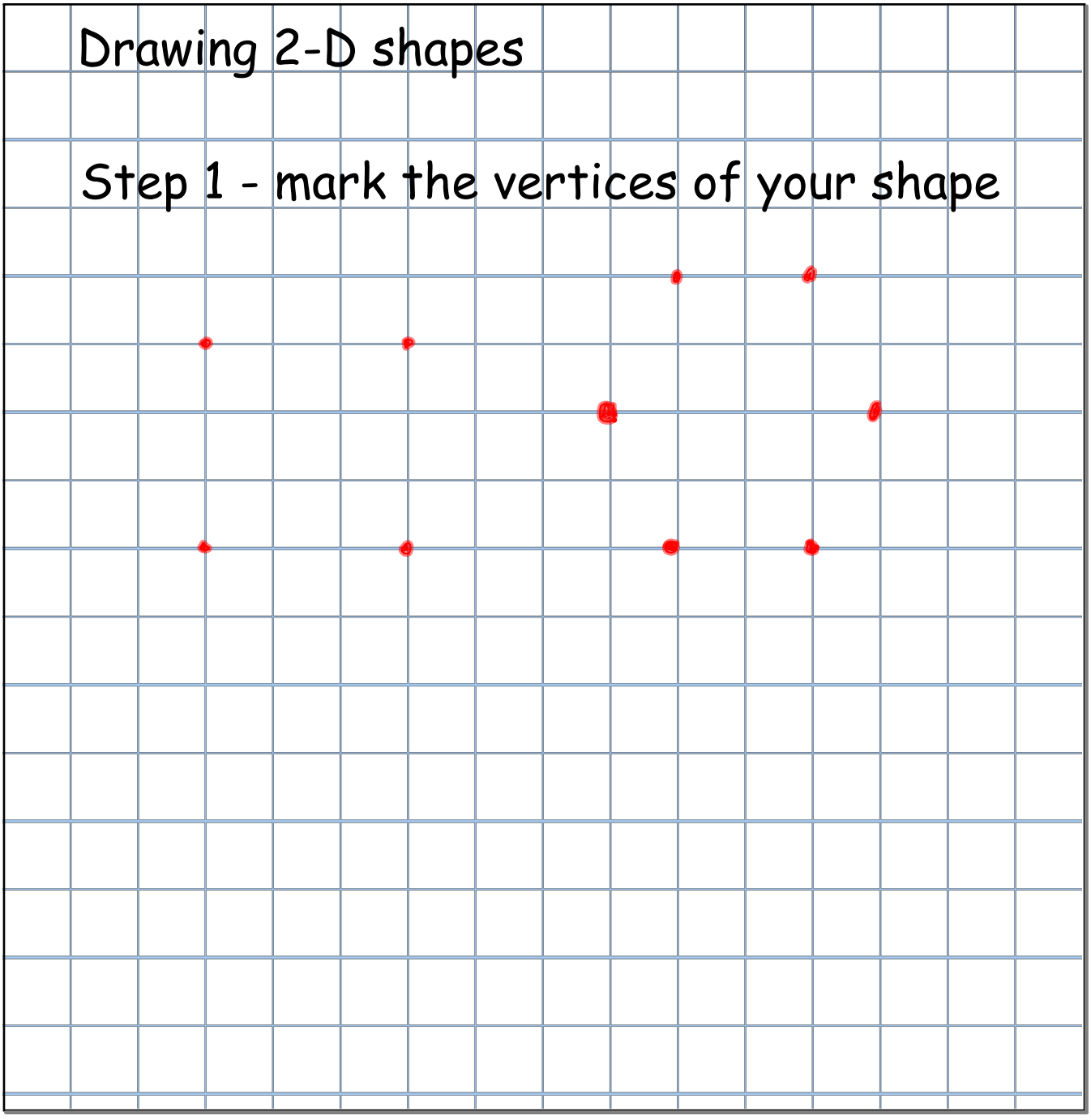
What has Ron done well?

How can Ron improve?

Feb 2-16:08

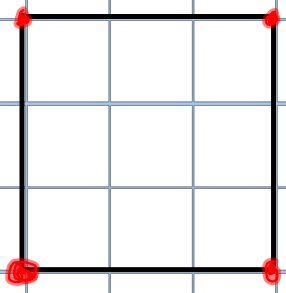
Drawing 2-D shapes

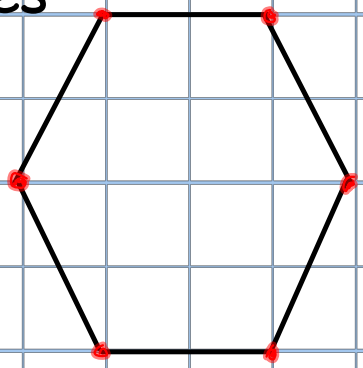
Step 1 - mark the vertices of your shape



Drawing 2-D shapes

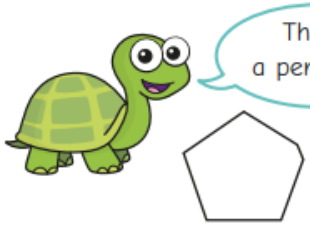
Step 2 - using a ruler draw straight lines to connect your vertices





Reasoning and problem solving

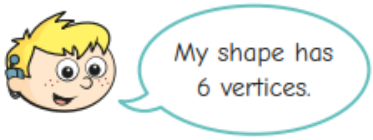
Tiny draws a 2-D shape.



Do you agree with Tiny?

Why?

Max draws a 2-D shape.



Draw Max's shape.

Is there more than one way to draw the shape?

Feb 2-16:09

Vertical lines of symmetry

Children to identify that a shape is symmetrical when both sides are the same. Children will use mirror lines and draw their own mirror lines to identify vertical lines of symmetry

Feb 2-16:17

Vertical lines of symmetry

Show children pictures of symmetrical butterflies.

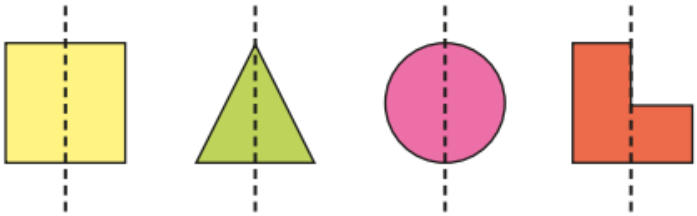
Ask them what they notice about the pictures.

Say that when a picture is the same on both sides of a line, the shape is symmetrical.

Give children shapes that they can cut out.

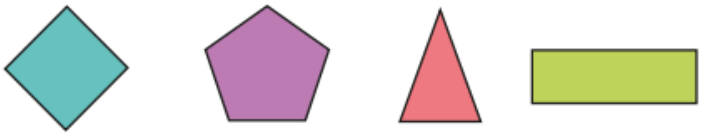
Ask children to fold the shapes to identify if they have a vertical line of symmetry.

Which shapes have a vertical line of symmetry?

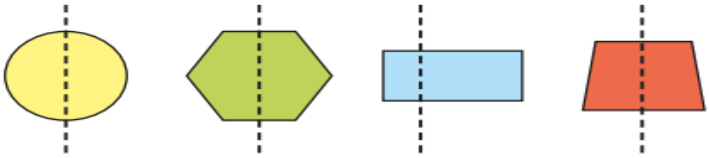


How do you know if a shape has a vertical line of symmetry?

Draw a vertical line of symmetry on each shape.



Which lines of symmetry are correct?



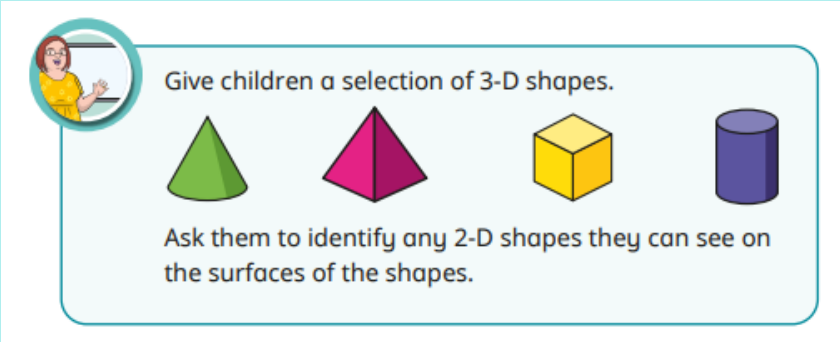
Feb 2-16:18

Counting faces of 3-D shapes

-Children will learn about the properties of 3-D shapes. They should be able to identify the 2-D shapes that make up the faces of 3-D shapes. They should also identify curved surfaces

Feb 2-16:19

Counting faces of 3-D shapes

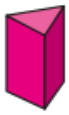


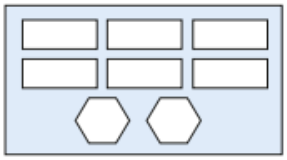
Progress to counting the number of faces - using a whiteboard pen to mark the faces so we don't miss any.

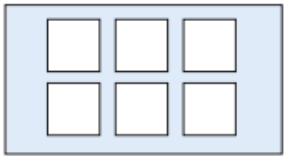
Introduce curved surfaces with a cylinder, cone and sphere.

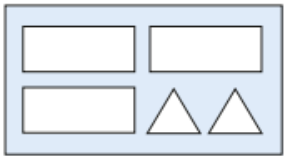
Feb 2-16:21

Match the shapes to the faces.









Match the shapes to the labels.

1 curved surface and 2 circular faces	1 curved surface and 1 circular face	4 rectangular faces and 2 square faces

Feb 2-16:23

Counting edges of 3-D shapes

-This will progress to identifying the edges of 3-D shapes (formed where two faces meet). Once this is a secure understanding, they will order shapes by the number of edges. A similar process will be followed so that children are able to identify vertices of 3-D shapes

Feb 2-16:36

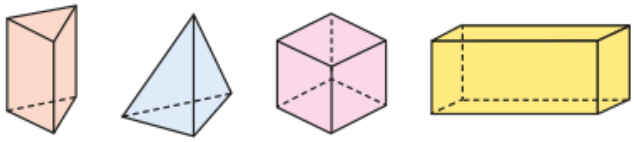
Counting edges of 3-D shapes - this is something the children find very tricky

Show children a selection of 3-D shapes.

Ask them to count how many edges each shape has.

Discuss how they counted the edges and what they found difficult.

How many edges does each shape have?



How many edges does each shape have?

Which shape has 9 edges?

Feb 2-16:37

Counting vertices of 3-D shape

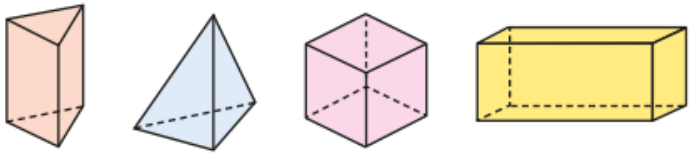
Show children a selection of 3-D shapes.

Ask them to count how many vertices each shape has.

Discuss how they counted the vertices and what they found difficult.

Children can use blue tac to help them make sure they have counted all the vertices

How many vertices does each shape have?



How did you count them?

How many vertices does each shape have?

Put the shapes in order of the number of vertices.

Start with the shape with the most vertices.

Feb 2-16:42

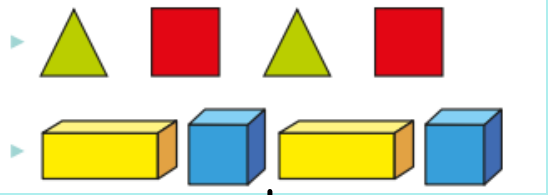
Patterns of 2-D and 3-D shapes

-Children will look at patterns of 2-D and 3-D shapes. Children need to identify what shape would come later in the pattern, for example, the 10th shape

Feb 2-16:44

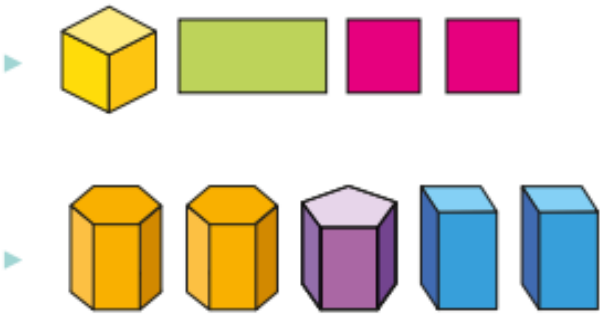
Make patterns with 2-D and 3-D shapes

Draw the next two shapes in each pattern.



Which shapes fit the pattern?

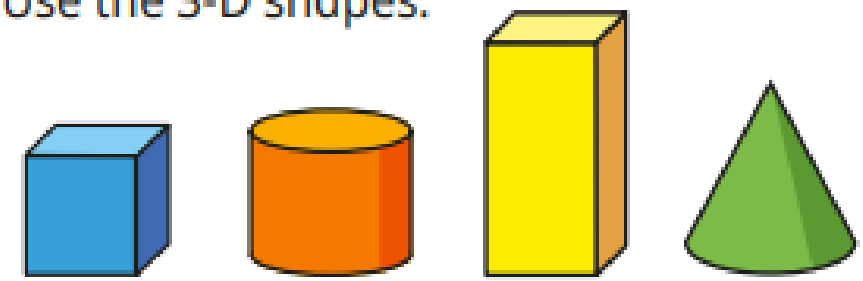
Complete the patterns so that they are symmetrical.



Feb 2-16:45

Reasoning and problem-solving

Use the 3-D shapes.



- Make a repeating pattern in which there are more cones than cuboids.
- Make a repeating pattern in which the 3rd shape is always a cylinder.

Feb 2-16:47

Year 2: Position and direction

Language of position

Children will describe a position - such as left, right, above, below and between. This will be used to answer multi-step problems and used when we progress to describing movements and turns.

Feb 2-11:18

Position and Direction
Language of position

Here are some shapes.

- Which shape is to the left of the square?
- Which shape is to the right of the square?
- How can you remember which way is left and which is right?
- Which shape is between the triangle and the circle?

Use five cubes. Follow the instructions to make a tower.

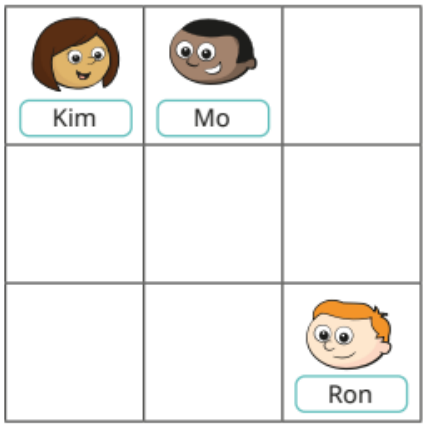
- Start with a yellow cube.
- Put a blue cube on top of the yellow cube.
- Put a white cube below the yellow cube.
- Put a red cube on the top of the tower.
- Put the green cube in between the yellow and white cube.

Write your own instructions for a partner.

Feb 2-15:56

Reasoning and Problem Solving

Use the clues to write Max, Sam and Jo's names on the grid.



- Mo is directly above Max.
- Sam is directly below Max.
- Jo is to the right of Max.

Complete the sentence.

Sam is to the left of _____

Feb 2-16:08

Describing Turns

We will consolidate the year 1 learning (quarter, half turn, full turn and three-quarter turn). We will do this practically and using visuals. We will progress onto clockwise and anticlockwise to describe turns.

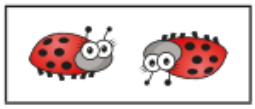
Children will draw an object in its position after a turn and describe the turn that an object has performed.

Describing Turns

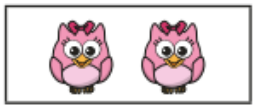
Discuss the terms clockwise and anticlockwise. Use a clock to show children the difference.

Play *Simon says* using quarter, half and three-quarter turns together with clockwise and anticlockwise.

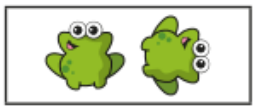
Match the pictures to the turns.



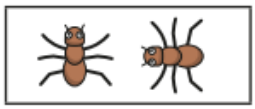
full turn



quarter turn clockwise



half turn anticlockwise

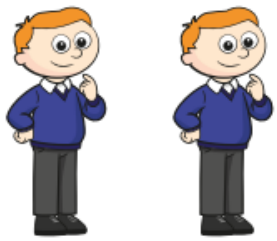


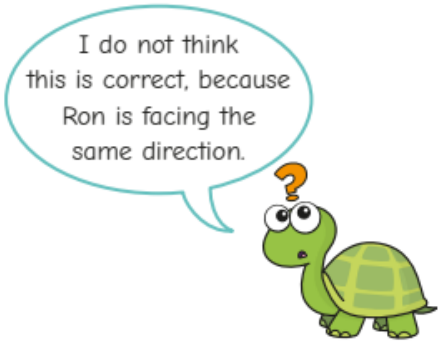
quarter turn anticlockwise

Feb 2-16:09

Reasoning and Problem Solving

Ron has made a turn.





Do you agree with Tiny?

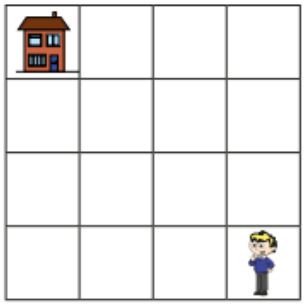
Explain your answer.

Feb 2-16:18

Whilst describing turns, children will also describe movement.

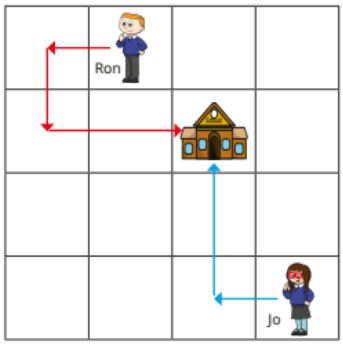
Draw arrows to show how Max could walk home.

Describe Max's journey.



Is there more than one answer?

Ron and Jo are walking to school.



- Complete the sentences to describe how Jo gets to school.

  First she moves _____ square forwards.

  Then she turns _____

  Then she moves _____ squares forwards.

- Describe Ron's journey to school.

Feb 2-16:18

Shape patterns with turns

Children will begin by recapping their knowledge of patterns that use different shapes. Then they will be introduced to patterns with one or two shapes that include a turn.

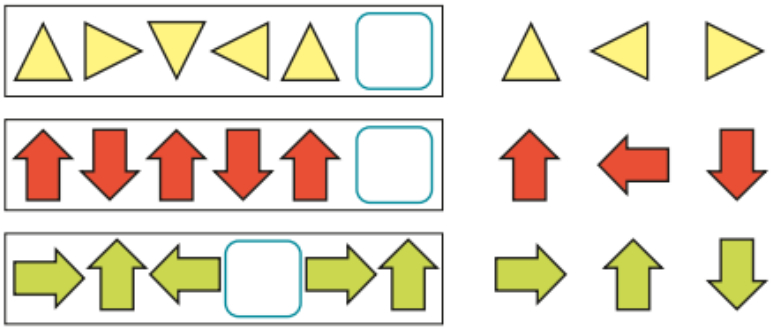
They should be able to identify what the next shapes in the pattern are and what direction they face, using the language of quarter, half, three-quarter turns as well as clockwise and anticlockwise.

Feb 2-16:22

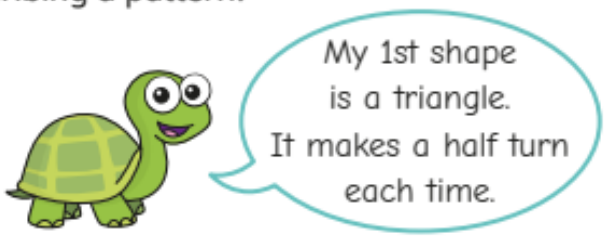
Shape patterns with turns

The patterns are made by turning the shape each time.

Choose the missing shapes.



Tiny is describing a pattern.



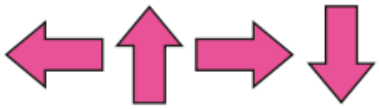
- Draw the first five shapes in Tiny's pattern.

  Have you drawn the same pattern as your partner?
- Describe a pattern for your partner to draw.

Feb 2-16:22

Reasoning and Problem Solving

Kim and Mo are describing the pattern.



The arrow makes a quarter turn each time.

Kim

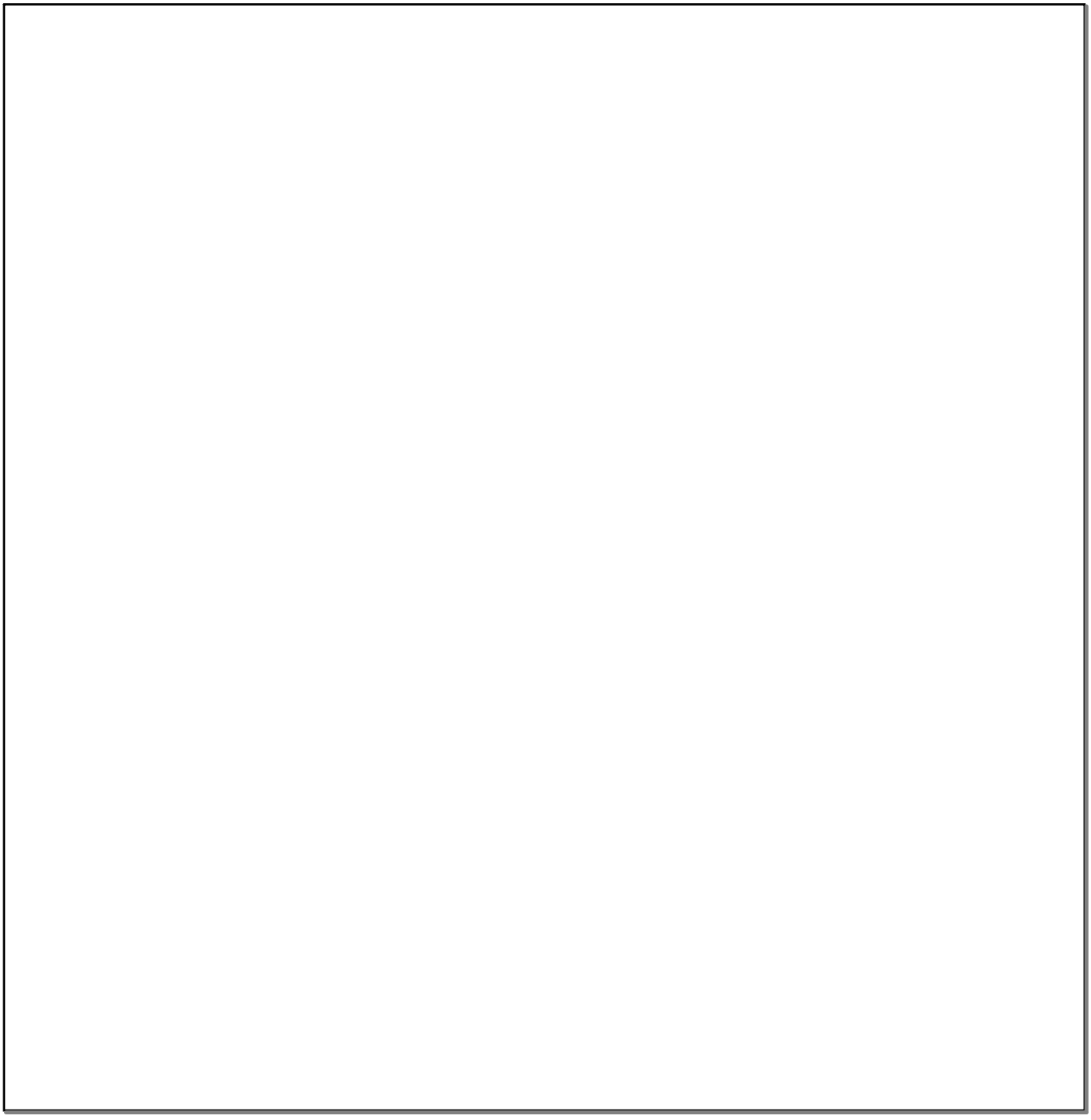
The arrow makes a three-quarter turn each time.

Mo

Who is correct?

Explain your answer.

Feb 2-16:33



Feb 2-16:58