

Year 2 Maths – Week Beginning 13th July

Don't forget to continue to use **Numbots** and **MyMaths** tasks too.

This week we are going to be continuing with our work on time and also looking at shapes, position and direction. You have got lots of different activities to choose from to practise your measuring skills!!

Lesson 1: Practising Time

We are going to spend the session today practising telling the time and writing o'clock, half past, quarter past and quarter to times so that you feel confident with each of these measurements of time.

Starter – Times of Day

Match the events to the approximate times they happen during the day:

9 o'clock

Half past ten

12 o'clock

Quarter past 3

Lunch time

School starts

Home time

Break time

Before we start looking at clocks, see if you can remember some time facts:

Which is the hour hand? _____

Which is the minute hand? _____

Where will the hour hand be at 6 o'clock? _____

Where will the minute hand be at half past 3? _____

Where does the minute hand point at quarter past? _____

Where does the minute hand point at quarter to? _____

Task 1: What time is it?









quarter to 8

3 o'clock

half past 6

quarter to 1

half past 7

quarter past 8



10 o'clock

half past 12

quarter past 11

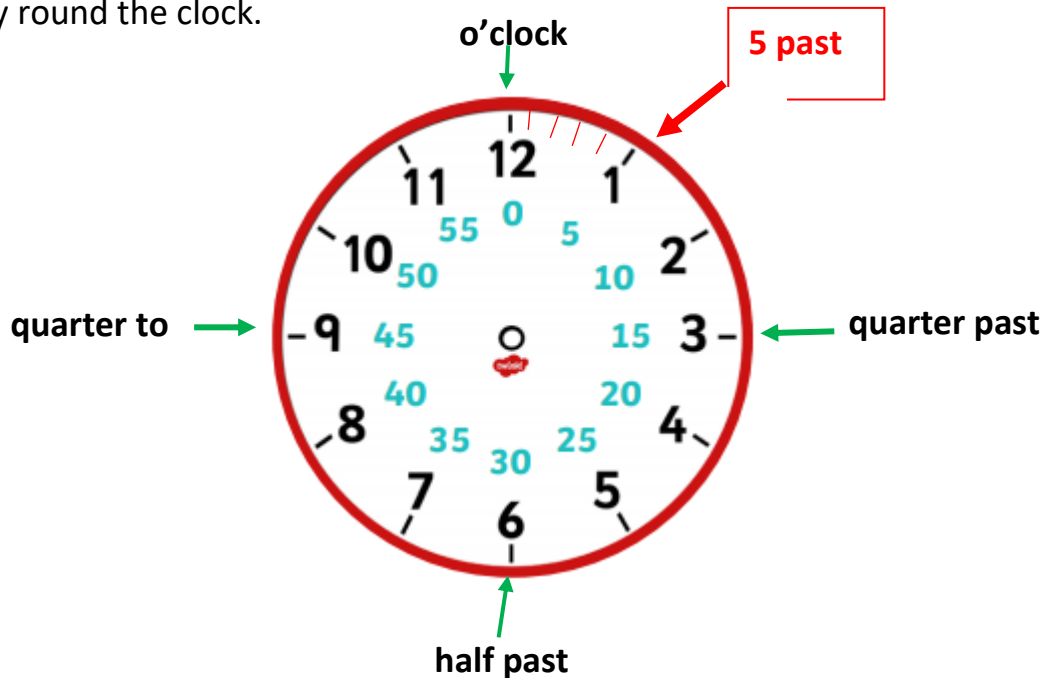
quarter to 4

half past 6

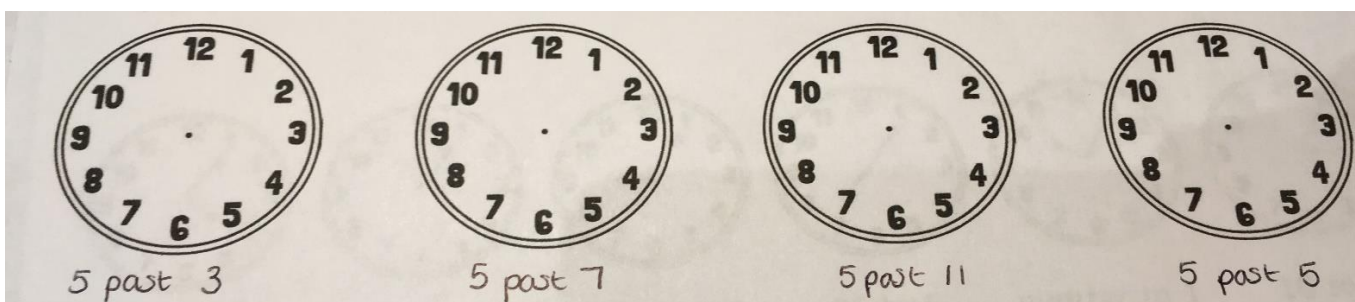
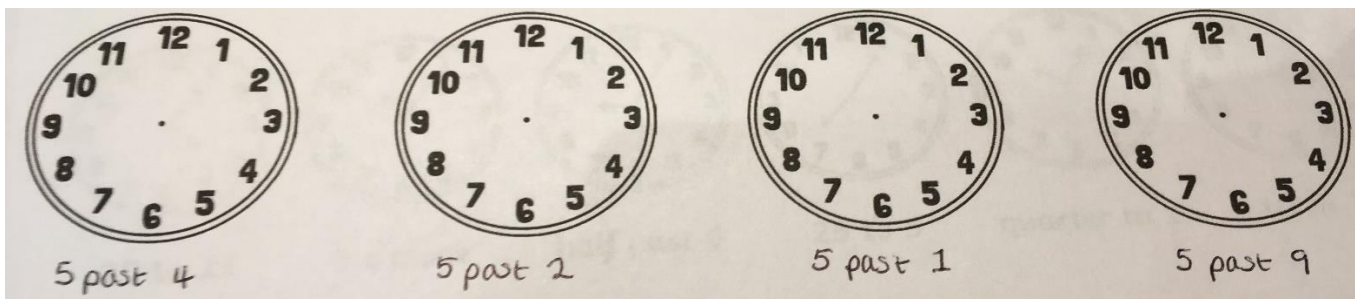
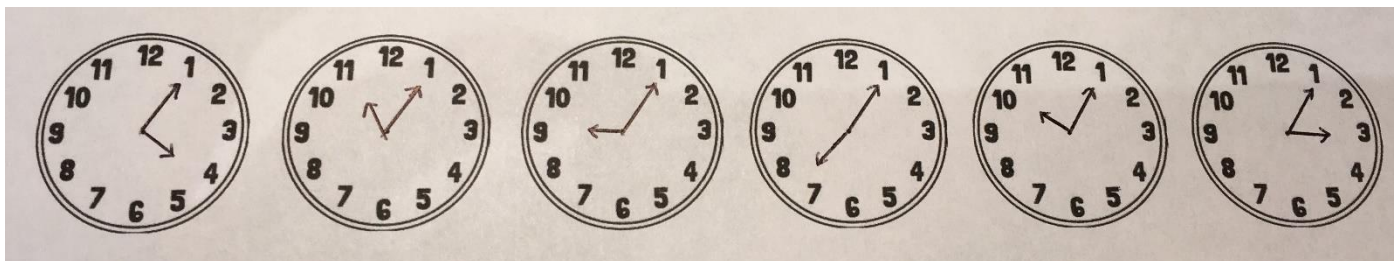
2 o'clock

Challenge Task: 5 minutes past the hour

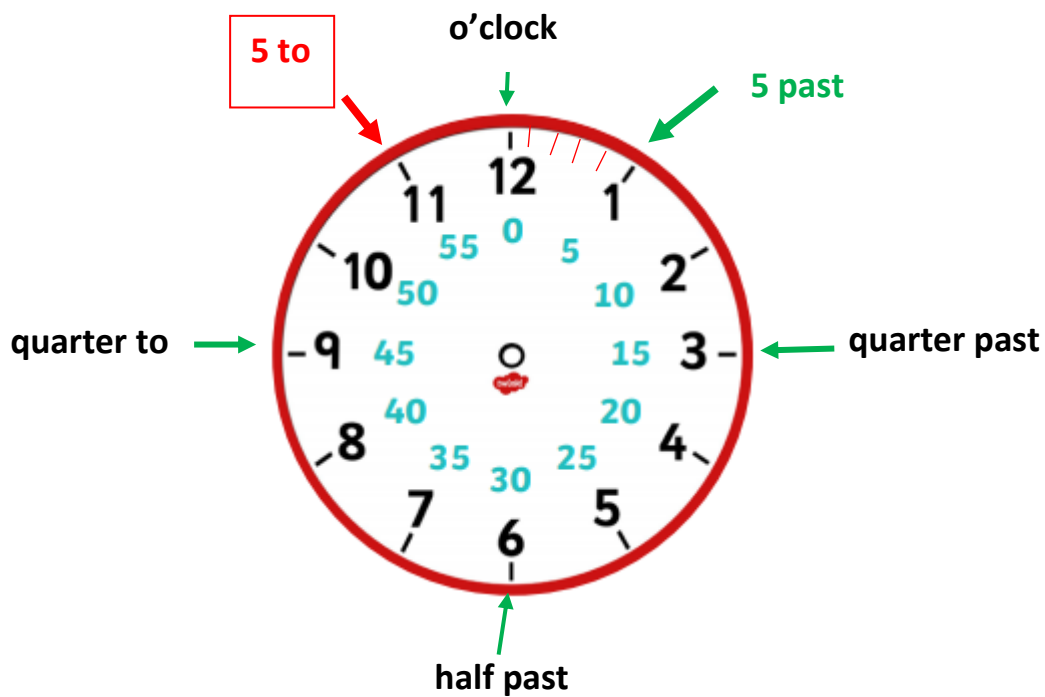
There are 60 minutes in 1 hour – each of the little lines on a clock face = 1 minute. There are 5 minutes between each number e.g. 5 minutes for the hand to move from 1 to 2 and another five minutes before it moves to 3. As we tell the time on a clock, we count in 5s all the way round the clock.



When the minute hand (the long hand) is pointing to the 1, we say that it is **five past**. It is 5 minutes **past** the o'clock time. **Have a go at telling these times:**

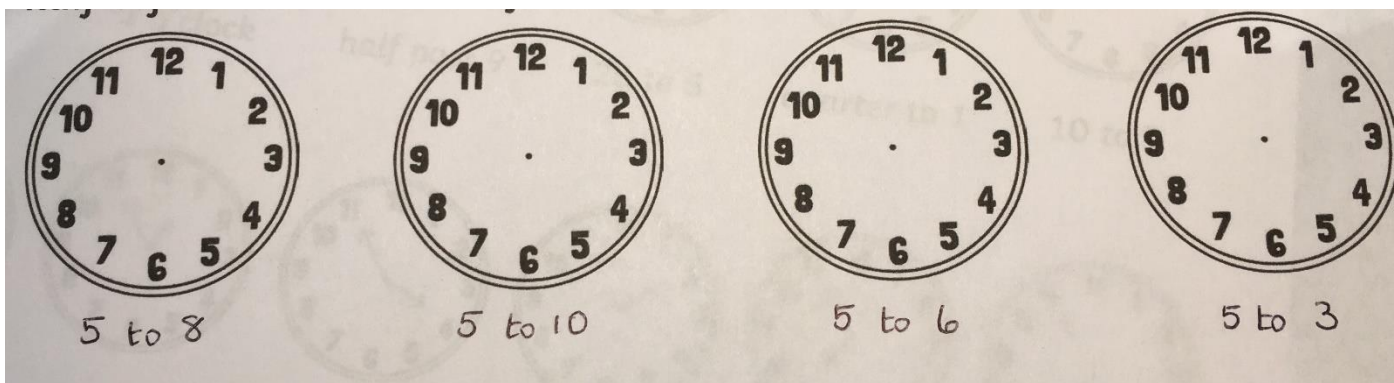
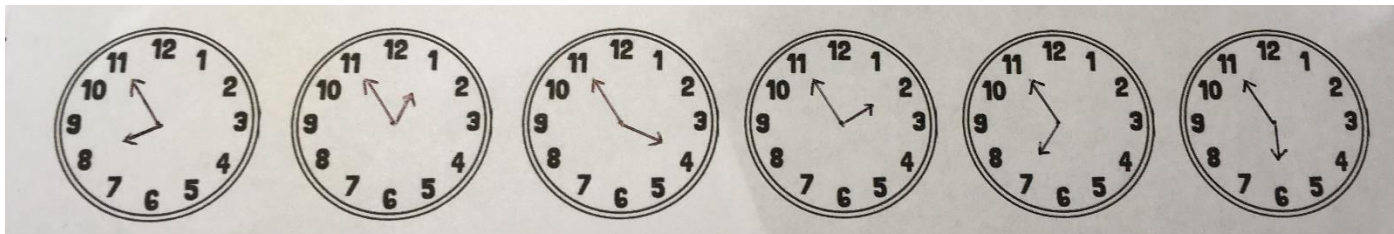


Super Challenge: 5 minutes to the hour



When the minute hand (the long hand) is pointing to the 11, we say that the time is **five to**. The hand has been moving **towards** the o'clock time. It is 5 minutes before the o'clock time.
























Have a go at telling these times:



Task 2: Time Game

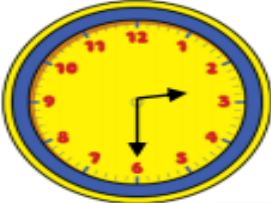
Roll a dice, move the number of spaces shown and read the time on the clock.

Practise reading the o'clock, half past, quarter past and quarter to times.


Start		Miss a turn			End
					
					
					
Miss a turn					Miss a turn
		Miss a turn			
				Miss a turn	

Task 3: Problem Solving


1.




Who is telling the time correctly?

 The time is half past 6

Dora

 The time is half past 3

Amir

 The time is half past 2

Alex


Can you spot the mistakes they've made?

2.

It is half past 11 so the hour hand should be on the 11

Is Alex correct?
Explain your reasoning.

3.




Oh no! The minute hand has fallen off the classroom clock!

Lunchtime is at 12:00

Have the children missed their lunchtime?

4.

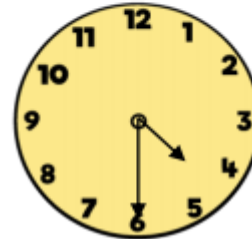
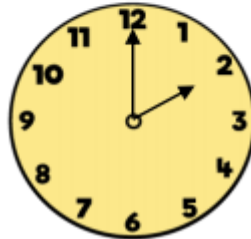
Using the clock, show how many minutes there are in 1 hour.
1 hour = _____ minutes
How many minutes would there be in 2 hours?



5.

The train to Blackpool leaves at quarter past and quarter to every hour.

Make a list of the times of the trains Oliver can catch if he gets to the train station between 2 o'clock and half past 4



6.

Match the bars to the times.

60 minutes

60 minutes 60 minutes

60 minutes

60 minutes 10

90 minutes

70 minutes

120 minutes

2 hours

1 hour

7.

Rosie has an hour for her lunch break. If she takes 10 minutes to eat her lunch, does she have enough time to complete all of the playground activities?

Activity	Duration
Skipping	7 minutes
Ball skills	10 minutes
Treasure hunt	21 minutes
Trim trail	19 minutes

How do you know?





Lesson 2: 2D Shapes

We are going to be re-capping our knowledge of 2D shapes and their properties.

Starter:

2D shapes are flat shapes. How many 2D shapes can you name?

Match the names of the shapes to the pictures.

Square	Triangle	Rectangle	Circle
			

Can you guess the 2D shape that I am thinking of?

1. It has 4 sides and 4 vertices (corners). 2 sides are long and 2 sides are shorter.
What is it? _____

Task 1: Shape Hunt

1. Go on a shape hunt around your house and garden. What shapes can you find?

You could perhaps create a tally chart like you did for your mini-beast hunt.
Which is the most popular shape that you can find?

2. Write down as many facts as you can about that shape.

Think about these mathematical words as you describe your shape:

Sides Vertices Curved Straight

(Vertices are the point where straight lines join e.g. at a corner)







The most popular shape on my shape hunt was _____.

It has _____

Task 2: Investigating Properties of 2D Shapes

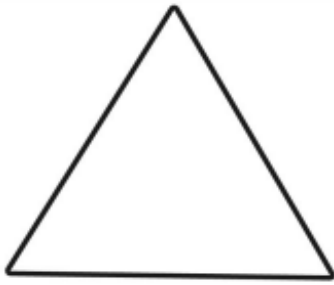
What are vertices? _____

Have a look at the shapes below. Can you name them and then complete the table?

2D Shape	Total Number of Sides	Number of Straight Sides	Number of Curved Sides	Number of Vertices
				
				
				
				
				
				

Use the information in your table to guess and draw these 2D shapes and then have a go at writing in simple sentences to describe the shape properties:

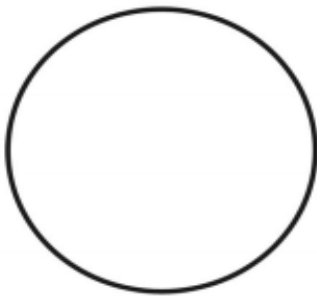
	<p>3 straight sides 3 vertices This 2D shape is a _____</p>
	<p>No straight sides No vertices This 2D shape is a _____</p>
	<p>4 straight sides 4 vertices This 2D shape is a _____</p>
	<p>4 straight sides all the same length 4 vertices This 2D shape is a _____</p>



What are the properties of a triangle?

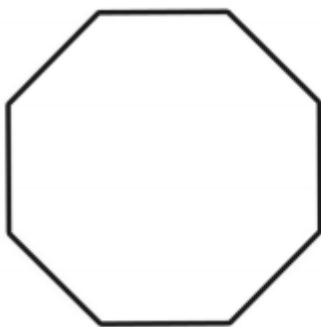


What are the properties of a square?



What are the properties of a circle?

Challenge:



What are the properties of an octagon?



What are the properties of a quadrilateral?

Task 3: Shapely Lines

Using your pencil and ruler, draw some straight lines on a piece of paper to make an interesting pattern.

Can you describe what you see in your own pattern?

Can you find any shapes which have three sides?

How about any with four sides?

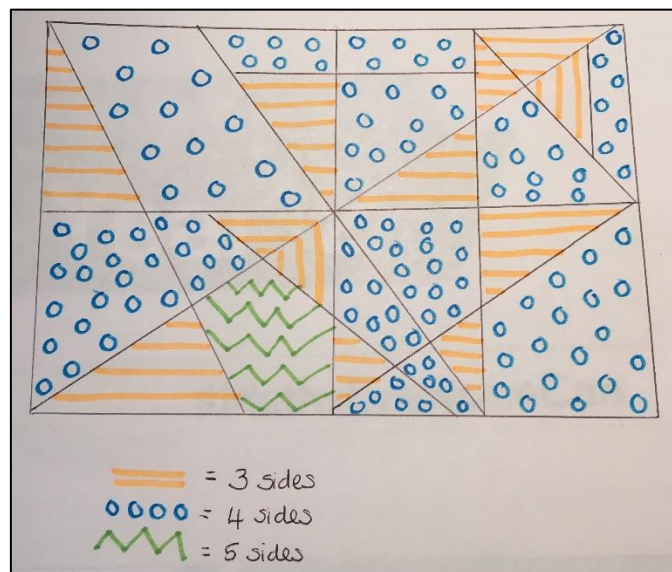
Which shape or shapes have the most sides?

Using your coloured pencils or pens, decorate all the three-sided shapes in some way. You could colour them all in using a particular colour or you could cover them with a special design or pattern.

Can you decorate all the four-sided shapes in another, different, way?

How about the five-sided/six-sided ... shapes?

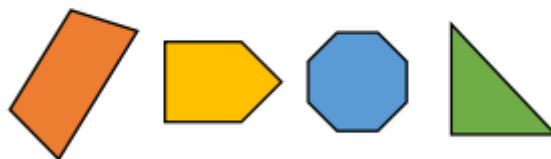
This is what I drew to give you some ideas:



Challenge: Shape Problem-Solving

1.

If I put these shapes into order from the smallest number of sides to the largest, which shape would come third?



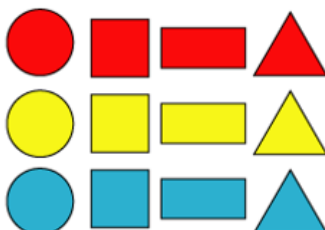
Where would a hexagon come in the list?
Why?

2.

How have the shapes been sorted?



Super Challenge:



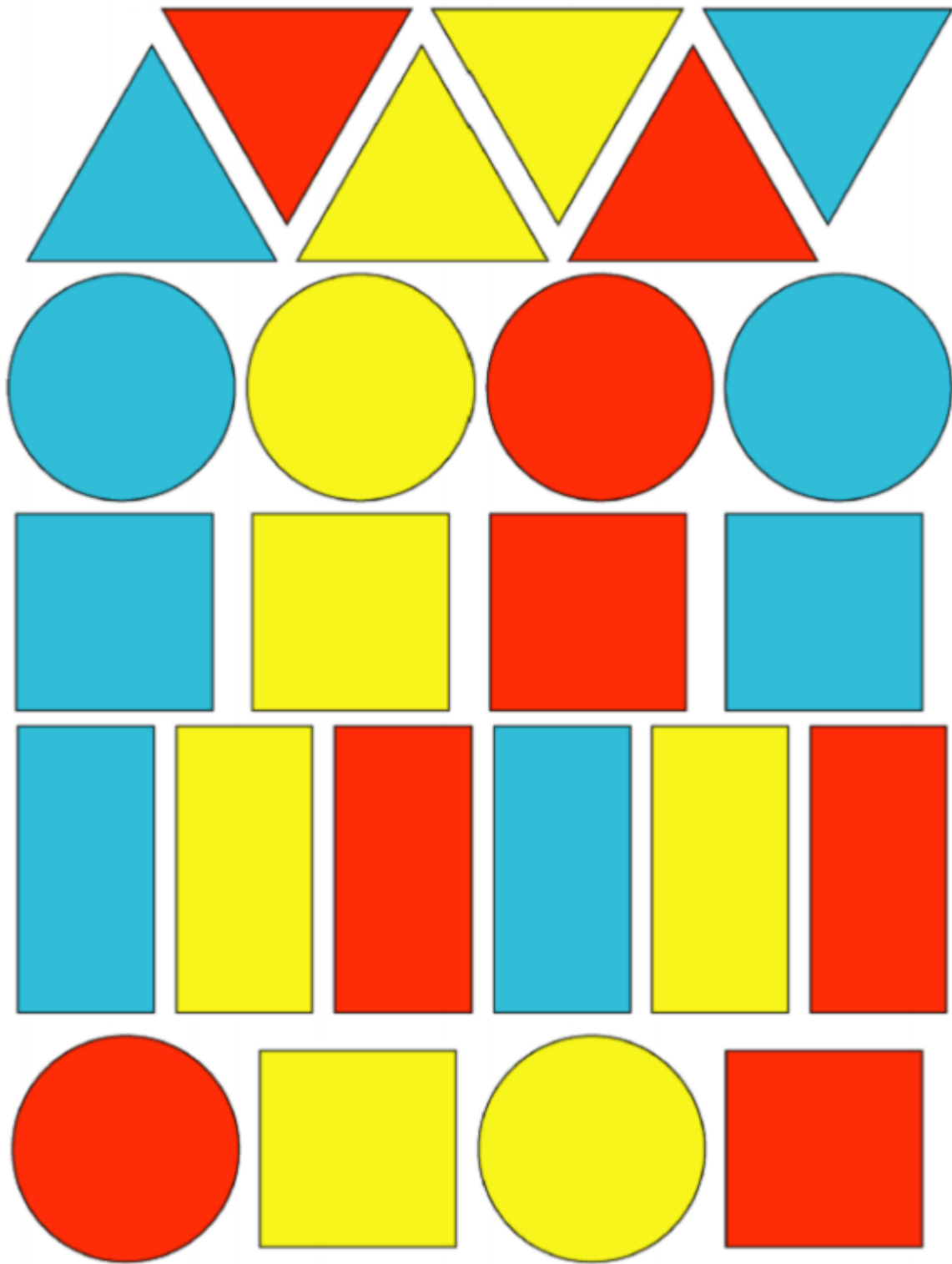
Each of these pieces is either a different colour or a different shape from all the others.

These problems ask you to arrange the pieces in a line so that you change either colour or shape in the next piece along. If we start with a blue triangle the next shape has to be either another triangle or another blue shape. You may want to print and cut out a set of shapes from [this sheet](#).

The first puzzle is to arrange all the shapes in such a line starting with the blue triangle and ending with the red circle. There are lots of different ways of doing it!



(shape pieces attached below)



Lesson 3: 3D Shapes

We are going to be re-capping our knowledge of 3D shapes and their properties.

Starter:

Tell me two things that are the same and one thing that is different about these two shapes.



Same



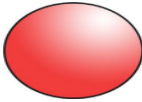



Same

Different

3D Shapes







3-dimensional (3D) shapes are also known as **solid shapes**. They have **faces** and **edges** where two faces meet. The **vertices** are found where the edges join together just as on 2D shapes.

To remind you of the 3D shapes we have learnt, see if you can match up the picture and name:

	Sphere
	Cuboid
	Cube
	Square-Based Pyramid
	Cylinder
	Cone

Task 1: Properties of 3D Shapes

You won't have all these shapes at home, but have a go at filling in the boxes by looking at the pictures.

3D Shape	Number of Straight Edges	Number of Curved Edges	Number of Vertices	Does it roll?	Does it Stack?
 Cube					
 Cylinder					
 Sphere					
 Cuboid					
 Cone					
 Square-Based Pyramid					



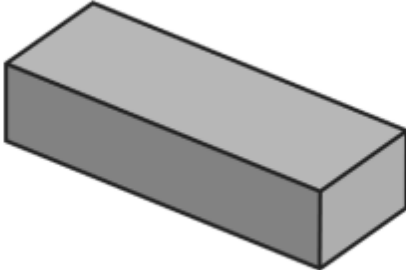

Task 2: Investigating Faces

Think about a square-based pyramid:

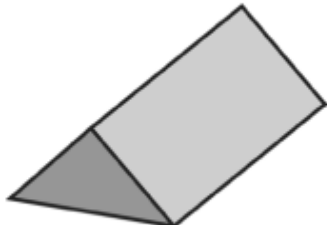
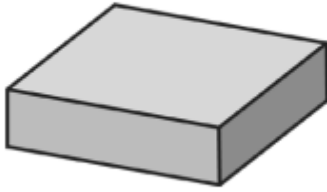

1. How many faces does a square-based pyramid have?

2. What shape are the faces?

3. Draw the faces below:

<p>a) Name of shape <input type="text"/></p>  <p>Number of faces <input type="text"/></p>	<p>b) Name of shape <input type="text"/></p>  <p>Number of faces <input type="text"/></p>
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c) I am thinking of a 3D shape. It has two flat circular faces and one curved rectangular face. It has no vertices. Tick the shape I am describing.

		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

line

Task 3: Make 3D Shapes

Make your own 3D shapes using the attached nets (separate document). You could make one or all.. it is up to you!

Suggested Ideas:

How many faces, vertices and edges can you count on your shapes?

Can you identify any 2D shapes on the surface of your 3D shapes e.g. circle on a cylinder and a triangle on a pyramid?

You could have a go at sorting your 3D shapes into sets. How will you sort them?

Shape Hunt - can you find any objects around your house that match your 3D shapes?

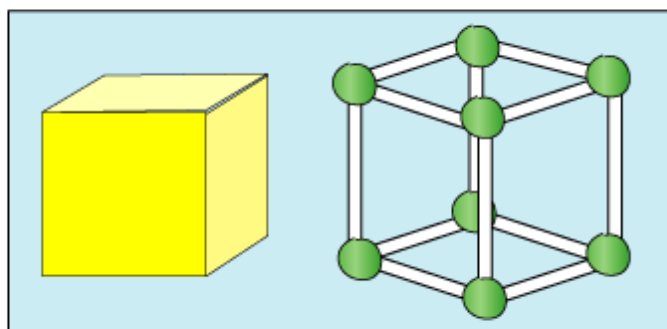
Extra Challenge: Shape Problem-Solving

Skeleton Shapes

You could use blu-tack and straws/sticks. You could even use marshmallows and spaghetti!
How many skeleton shapes can you make? How many vertices and edges will you need for each shape?

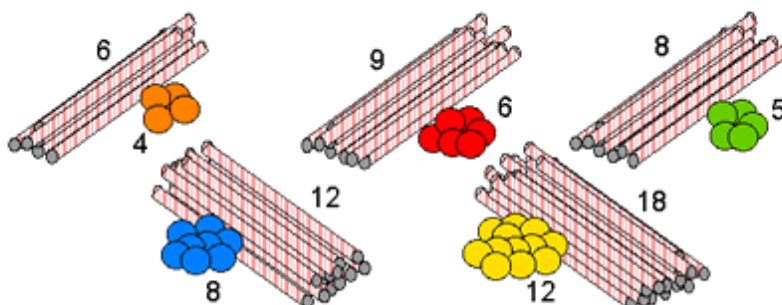
Skeleton shapes are made with balls of modelling clay and straws.

This shows a cube and a skeleton cube:

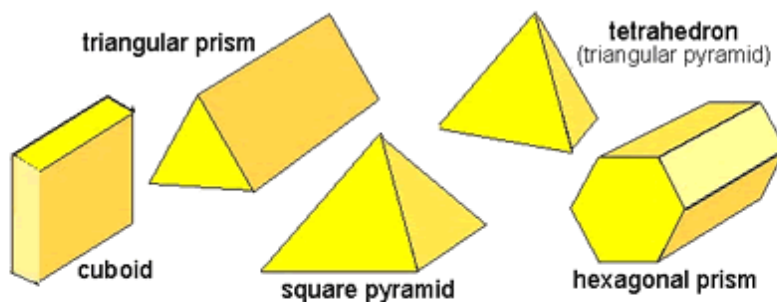


How many balls of modelling clay and how many straws does it take to make the cube?

Here are some piles of modelling clay balls and straws:



Look at the shapes below and decide which piles are needed to make a skeleton of each shape.



Lesson 4: Position and Patterns

Starter: Positional Language

How many words can you think of to describe the position of something? I'll give you two to start you off: above, below... can you think of 10 more to create a list?

Can you think of any other words you could also use instead of above or below (but that mean the same thing)?

Play an instruction game. Once you have collected your list of positional words, ask a grown up to read them out to you in an instruction.... Can you put yourself in positions to match the words e.g. on a chair, next to the window, under the table etc.!

Position and Direction Key Vocabulary

Below is a list of important vocabulary that you will need for the next couple of sessions. Do you know what all the words mean? Don't worry if you are not sure, we will find out about them during each activity.

up	down	forwards	backwards
left	right	clockwise	anticlockwise
full turn	quarter turn	half turn	three-quarter turn

Top Tip: You could use this list like a word bank to help you spell the words when you are writing your answers.

Task 1: Patterns and Positional Order

1. Continue these patterns:



What is the first picture in each pattern? What is the second? What is the third? What will be the fifth? What will be the sixth?

2. Sophie creates a pattern with coloured beads. Can you draw and continue her pattern on the bead string?

It starts off: yellow, yellow, blue, yellow, yellow, blue.....



What colour will the 12th bead be? _____

What colour will the 20th bead be? _____

Sophie decides to put a green bead between each of the two yellow beads in her pattern. What will the pattern look like now?



What colour will the 12th bead be now? _____

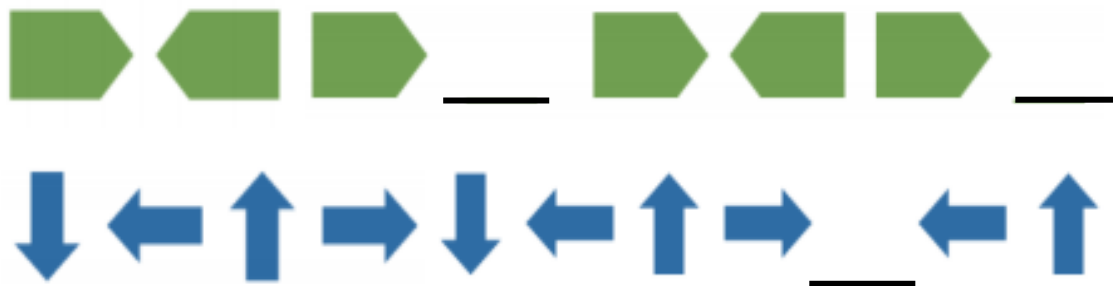
What colour will the 20th bead be now? _____

Task 2: Patterns and Position of Shapes

1. Continue these patterns by adding the next three shapes:



2. Fill in the missing shape to complete the pattern:

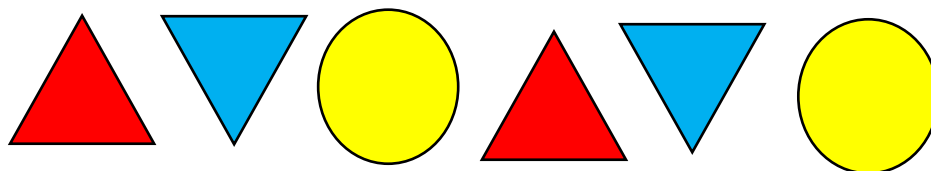


What do you notice about the shapes in the patterns? How do they change?

Task 3: Creating a Repeating Pattern

Can you create some repeating patterns using the attached shapes (separate document)? How many different patterns can you make?

Try to include shapes in different positions etc. Can you **rotate** them so that they are upside down or turned on their side?

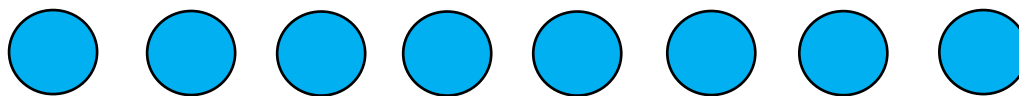


Have a go at describing the position of your shapes.

Lesson 5: Position and Direction

Starter:

1. Draw a cross on top of the 4th blue circle:



2. Draw a circle around the 3rd triangle:



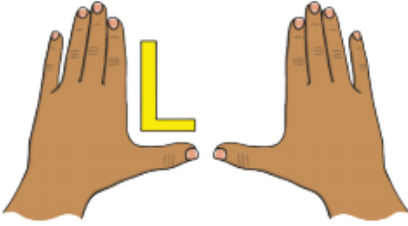
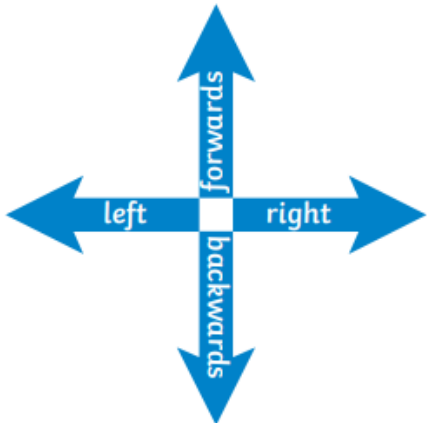
3. Draw an arrow underneath the 2nd red square:



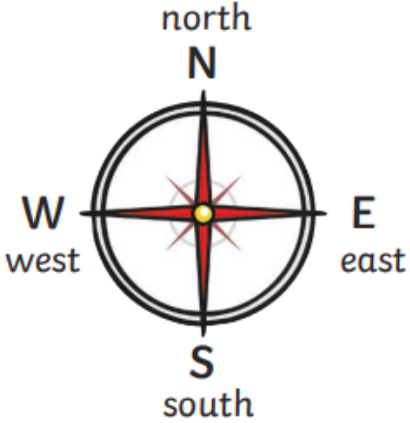
Describing Movement

These are the words we will need to use to describe movement in a straight line.

Describing Straight-Line Movement



Left and Right
The hand that makes an L shape is the **left hand**.



Task 1: Following Instructions

Can you follow instructions (or give instructions for someone else to follow) such as:

~ Walk forward 4 steps.


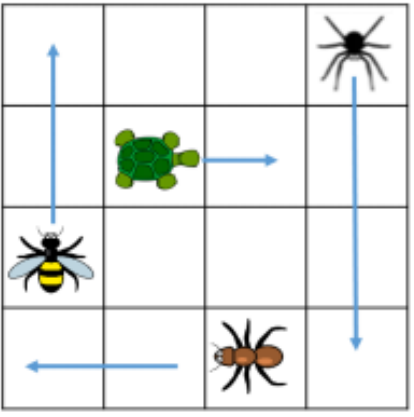

~ Take 2 steps to the left.

~ Jump backwards 3 jumps.


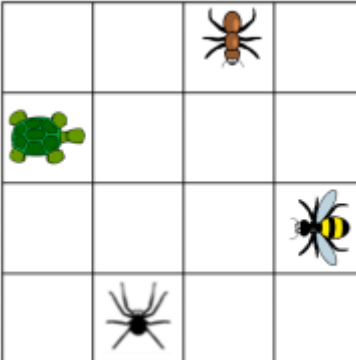



Task 2: Describing Movements

forwards	backwards	up	down	left	right
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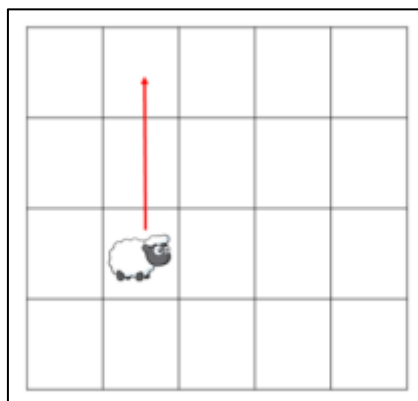
1. Complete the sentences to describe the movements made:

The  has moved 1 square _____.	
The  has moved ___ squares _____.	
The _____ has moved 2 squares up.	
The _____ has moved ___ squares down.	

2. Record these movements on the grid with an arrow:

The  moves 1 square right.	
The  moves 3 squares forward.	
The  moves 1 square down.	
The  moves 1 square up.	

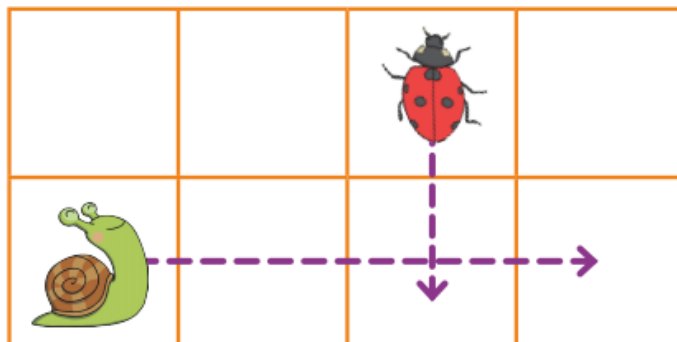
3. James says that the sheep has moved 2 squares forward. Is he correct?



Remember that when you move position on a grid, you don't count the square you start in.

You *count on* (or jump on) to the next square as you begin to count – just like you do when you are counting along a number line.

4. True or false?



The snail has moved forwards 3 squares.

The ladybird has moved forwards 1 square.

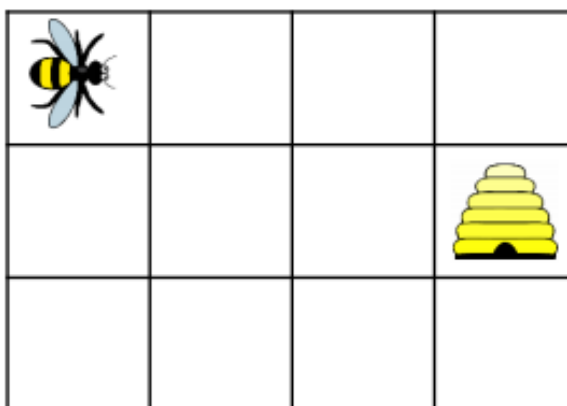


The butterfly has moved right 2 squares.

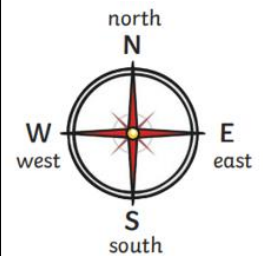
The spider has moved left 3 squares.

Challenge:

How many different routes can you write for the bee to get to the hive, using the direction words forwards, backwards, left and right?



Task 3: Pirate Directions



This very messy pirate has left his stuff everywhere! Can you follow the directions and help him gather it all up?



Can you follow the directions to work out what the pirate finds?

map	compass	parrot	flag	treasure chest
bottle	coins	gun	anchor	

For each set of directions, start from the dark blue square, always facing **North** throughout.

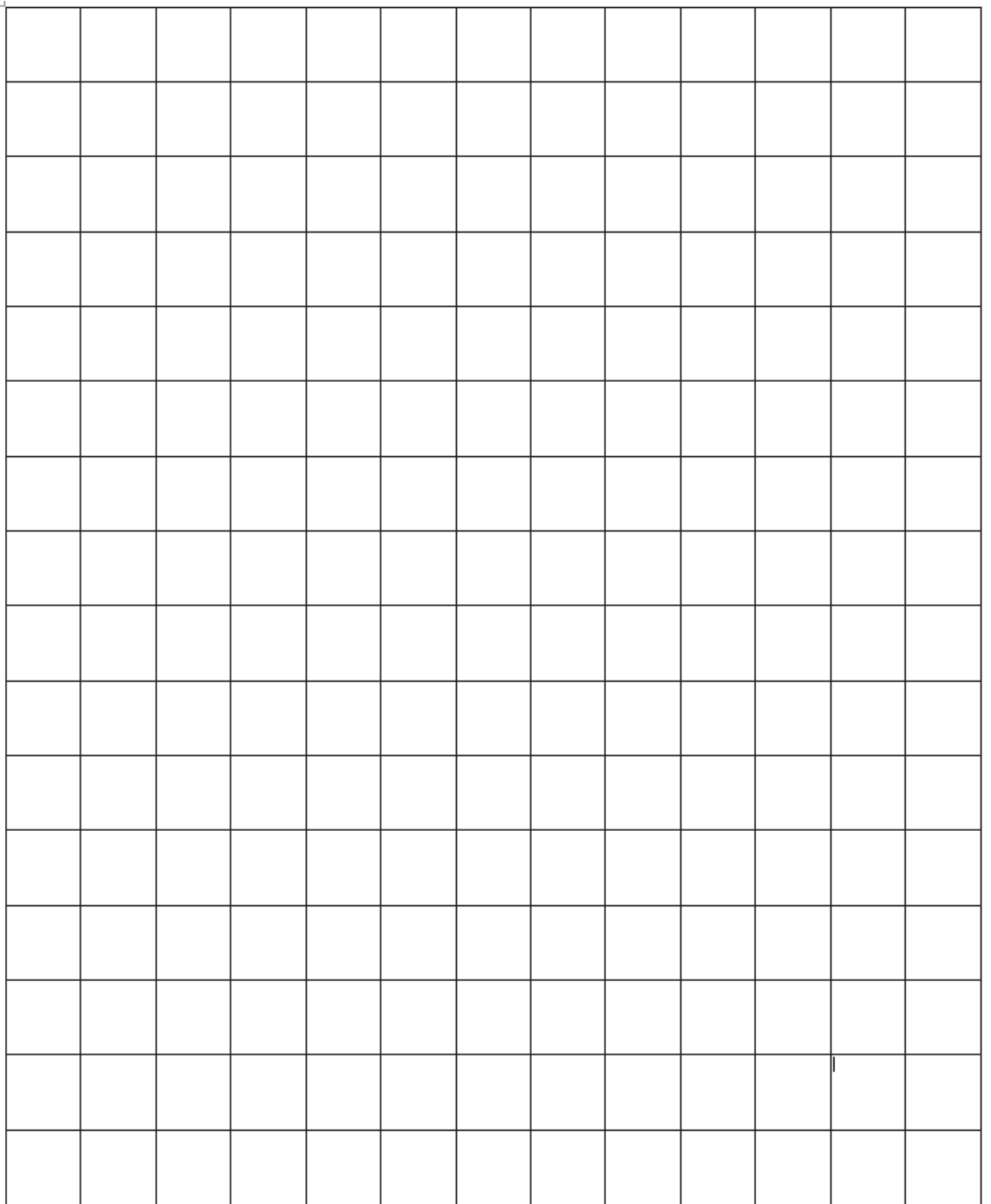
- Forward 2, left 2, back 1 = _____
- Right 2, forward 2, left 1, forward 1, right 1 = _____
- Left 1, forward 2, left 1, forward 2, right 3 = _____
- Left 2, forward 3, right 1, down 2 = _____

5. Forward 4, right 2, down 3, left 1 = _____
6. Forward 2, right 2, back 1, right 1, back 1 = _____
7. Left 1, forward 2, right 2, forward 1, right 2, back 1 = _____
8. Right 2, forward 2, left 4, forward 2 = _____
9. Right 2, forward 3, right 1, forward 1, left 2, back 1, left 2 = _____

Challenge:

Have a go at creating your own treasure map. Can you write directions to get to the treasure?

~ You might want to use the squared paper below to help you as the grid lines are already drawn.



Lesson 6: Position and Direction Continued....

Starter:

Use your knowledge of fractions – what fraction of these circles have been coloured in?












Describing Turns

We are going to use your fraction knowledge to describe turns or 'rotations' of objects.

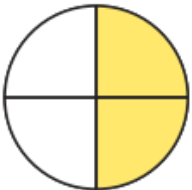
full turn (1 whole)	quarter turn $\frac{1}{4}$	half turn $\frac{1}{2}$	three quarter turn $\frac{3}{4}$
clockwise 		anticlockwise 	

We are also going to use your knowledge of telling the time to describe the direction of the turns!

Describing Turns

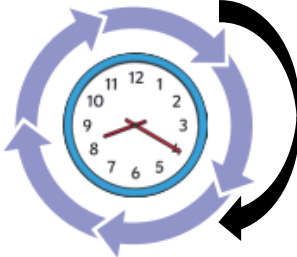


quarter turn





half turn

clockwise

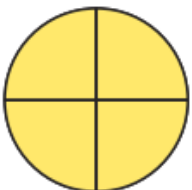


anticlockwise





three-quarter turn



full turn

If the turn is in the same direction as the hands of a clock, it is **clockwise**.

If the turn is in the opposite direction to the hands of a clock, it is **anticlockwise**.

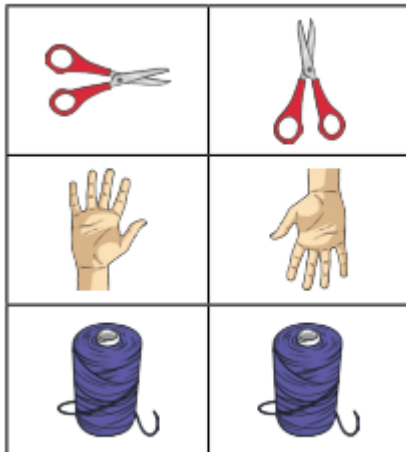
Task 1: Stand facing a chosen spot in the room. Always start looking at the same spot.

- Can you turn.....
 - One full turn – where do you end up facing?
 - A quarter turn
 - A half turn
 - A three-quarter turn (count the quarters as you turn to help)

2. Now have a go at turning **clockwise** (the direction of the hands of a clock) or **anticlockwise** (the opposite direction).







Task 2:

1. Match the turn to the description:



A full turn clockwise.
A quarter turn anticlockwise.
A half turn clockwise.
















2. Describe how each object has been turned:

		The scissors made a _____ turn _____.
		The hand made a _____ turn _____.
		The thread made a _____ turn _____.

Task 3:

Can you draw the arrow in the correct position?

Top Tip: Draw and cut out an arrow (below) so that you can actually move it the correct number of turns.

Start with...	Do this...	It will look like this:
	 quarter turn clockwise	
	 half turn anti-clockwise	
	 full turn clockwise	
	 quarter turn anti-clockwise	
	 half turn clockwise	
	 three quarter turn anti-clockwise	
	 three quarter turn clockwise	



Challenge: Problem-Solving and Reasoning

1. Describe the turn for each pattern:



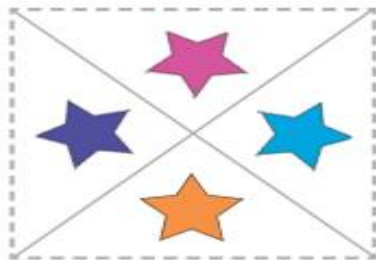
2. Why is this shape incorrect?



3. Circle the incorrect shape. Why is it wrong?



4. Problem-Solving - Can you spot Anna's mistake? How could she describe the turn she made?



She says:



I turned the shape a quarter turn clockwise.

Lesson 7: Describing Turns and Movements

Starter: 'Simon Says' Game

Have a go at playing Simon Says for practising your rotations/turns. For example:

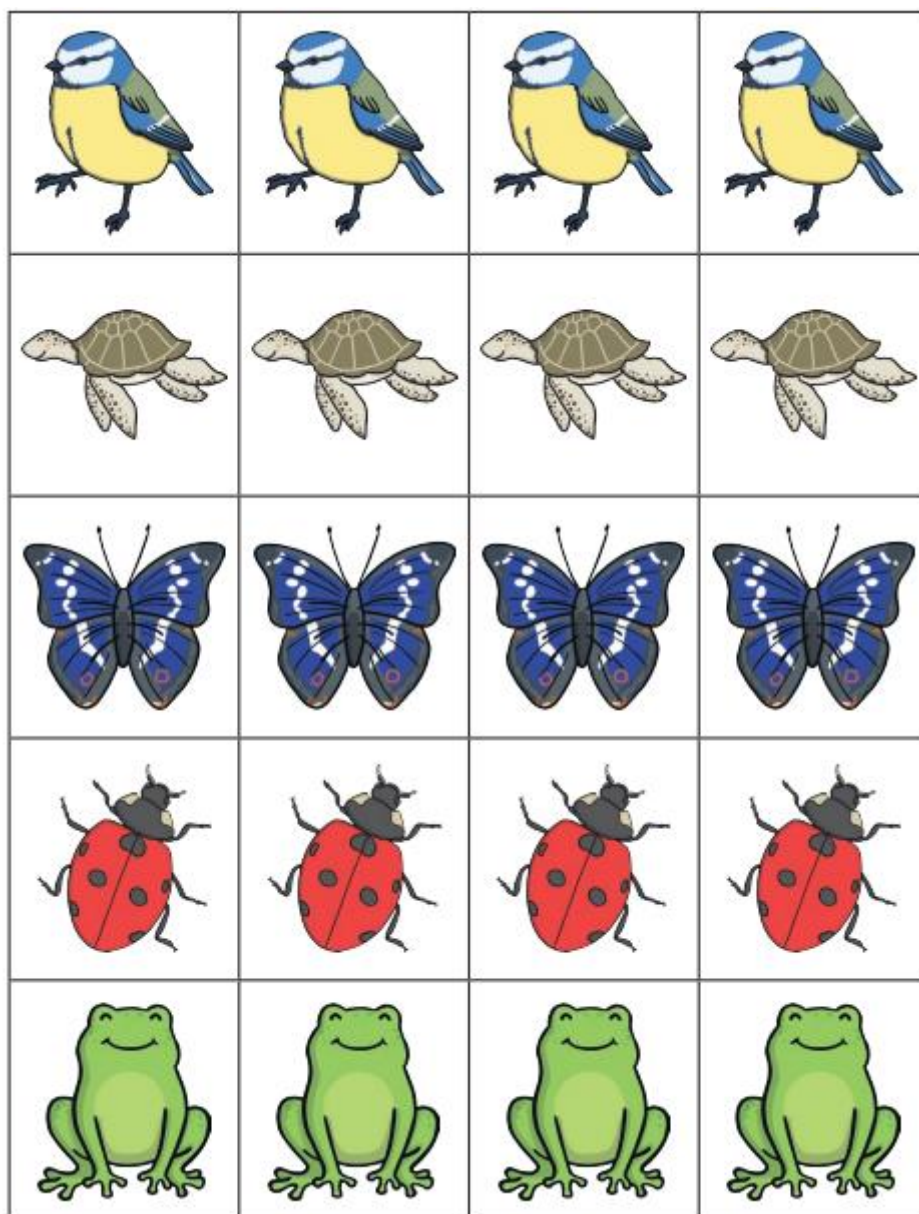
“Simon Says make one full turn. Simon Says turn a quarter turn. Simon Says rotate a half turn. Move forward 3 steps.” Don’t get caught out when Simon doesn’t say!!!! 😊






Challenge: Add clockwise or anticlockwise directions e.g. “Make a quarter turn clockwise.”

Add two directions e.g. “Rotate a half turn and take 3 steps to your right.”

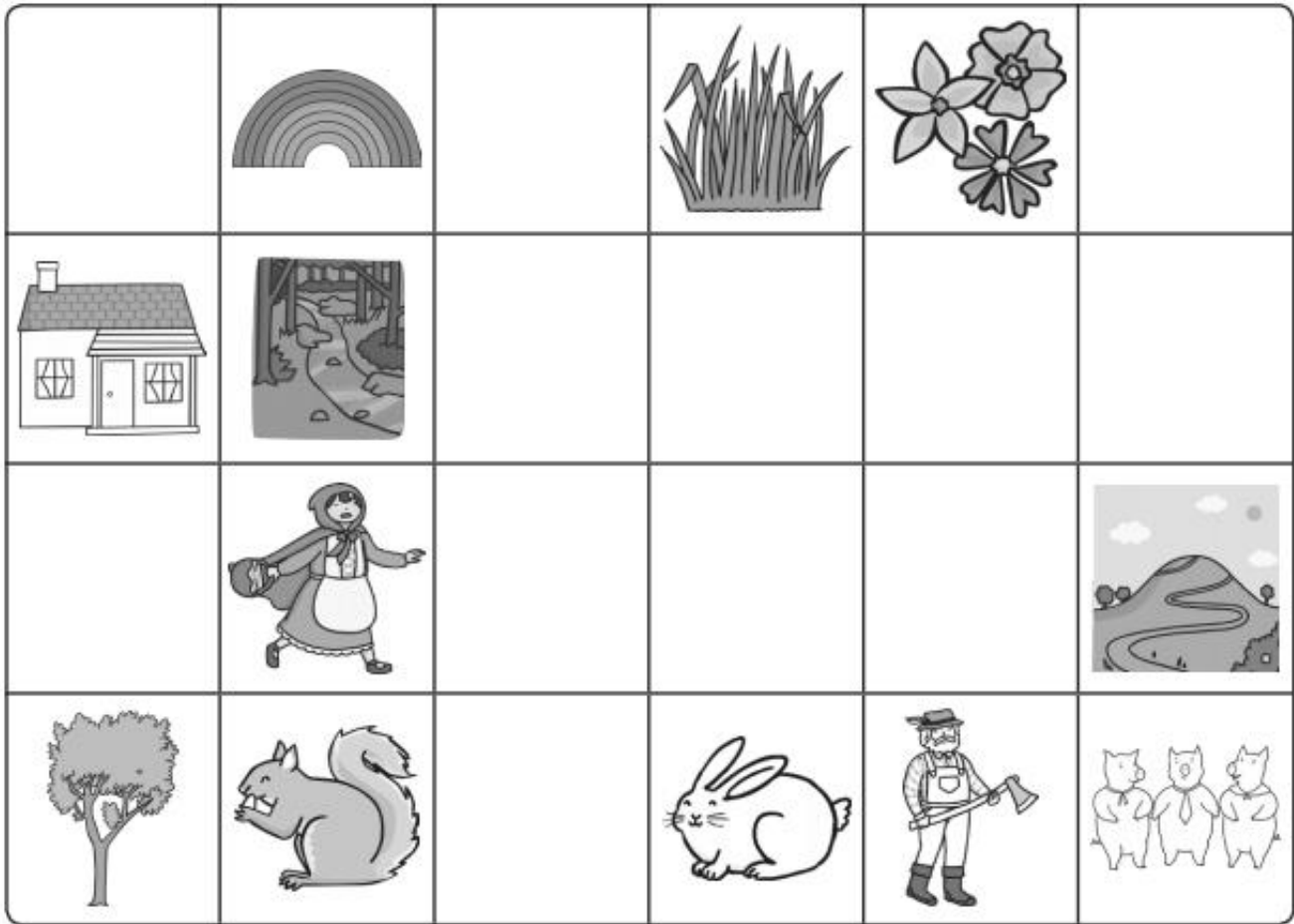
Task 1 : Turning Clockwise and Anti-Clockwise

Cut out the creatures below and stick onto the table, changing their position. Don’t forget to check the direction of the turns!



Start Position	One quarter turn clockwise	Half turn anti- clockwise	Three- quarter turn clockwise	Full turn anti- clockwise
				
				
				
				
				

Task 2:



a) Little Red Riding Hood is facing the hill. She does a quarter turn anticlockwise. What is she facing now? Tick one.

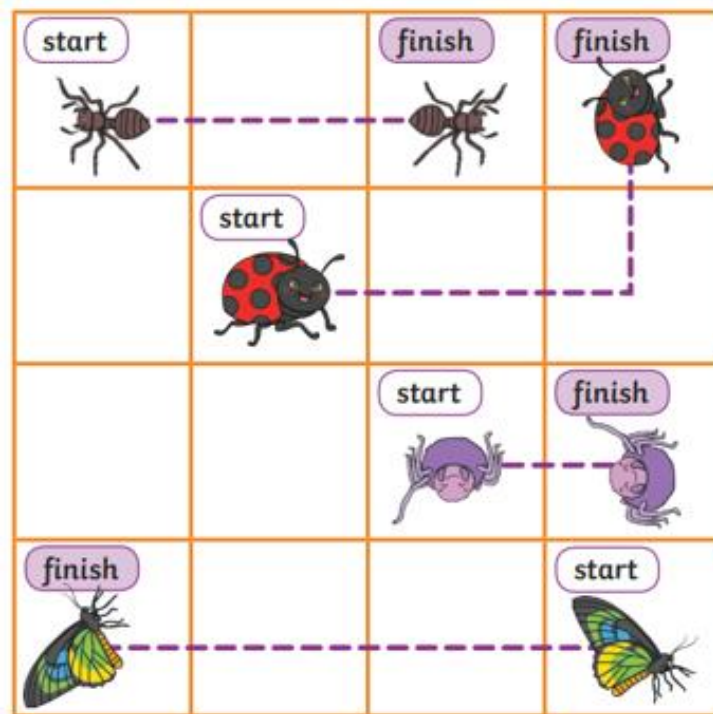
squirrel stream

b) You are standing on the flowers facing towards the grass and rainbow. If you do a three quarter turn clockwise, what are you facing now?

c) The bunny does a quarter turn clockwise and hops forwards 3 squares. Where is he now?

Task 3:

Complete the sentences to describe how the animals have moved:



The spider has made a _____ turn and moved forward _____.

The butterfly has moved _____ 3 and made a quarter turn _____.

The ant has made a _____ turn clockwise and moved forward _____.

The ladybird has moved _____ 2, made a _____ turn and then moved forward _____.

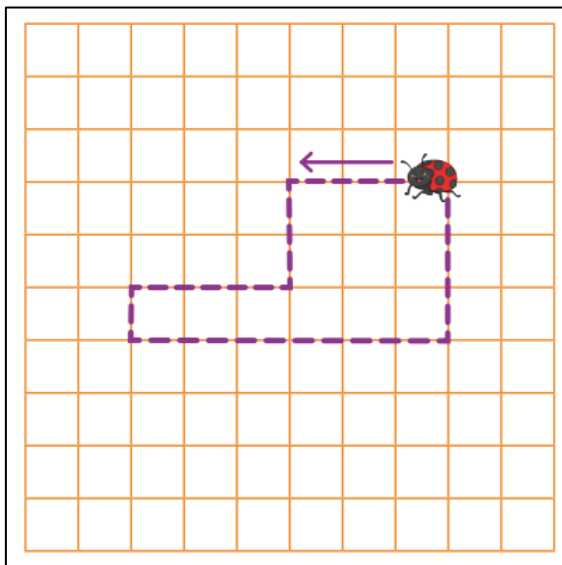
Top Tip: If you are finding this tricky to work out in your head, draw a ladybird or a butterfly on a piece of paper, cut it out and move it so that you can see the direction it has moved and the turns it has made.

Challenge Questions:

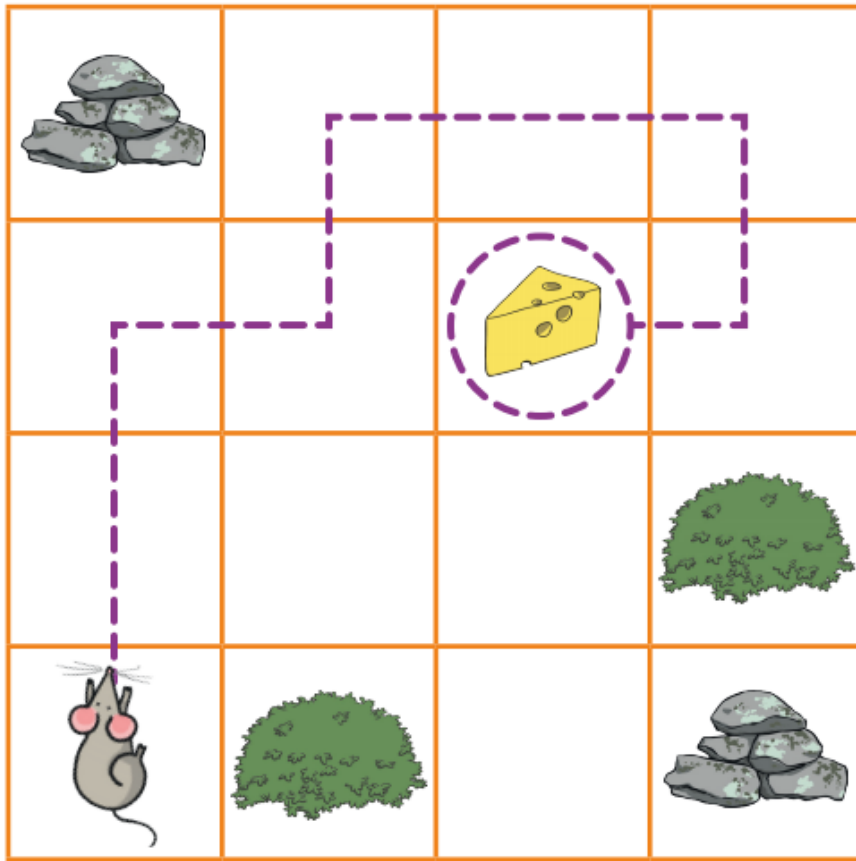
Remember all your new position and directional language:

up	down	forwards	backwards
left	right	clockwise	anticlockwise
full turn	quarter turn	half turn	three-quarter turn

1. The ladybird is going to move all around the shape and back to where it started. Can you describe the route that the ladybird takes?



2. Can you explain how the mouse got to the cheese?



Extra Challenge: Can you find another way for the mouse to get to the cheese?

Super Challenge:

On squared paper, draw shapes and describe the routes around the sides.

