

Dereham Church OF England Infant and Nursery Academy- Mathematics

	Year group: 2	Area/topic: Mathematics- Position and direction
	Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise)	

Prior learning	Future learning
In the language of position, direction and motion, including: left and right, top, middle and bottom, on top of, in front of, above, between, around, near, close and far, up and down, forwards and backwards, inside and outside	Children will use this knowledge to support them to find perimeter and lengths when in year 3.

What pupils need to know or do to be secure	
Key knowledge and skills	Possible evidence
Language of position	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.

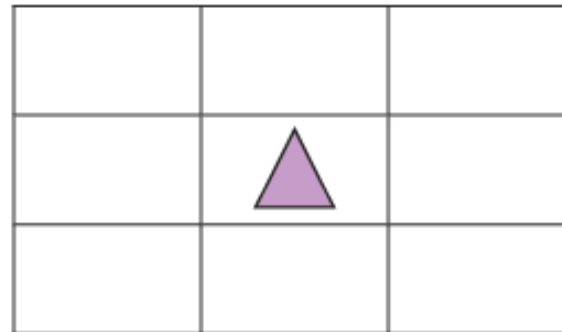
Look at the people and things around you in the classroom.

Complete the table.

In front of me	Behind me	To the left of me	To the right of me

Follow the instructions.

- Draw a square above the triangle.
- Draw a circle below the triangle.
- Draw a rectangle to the left of the triangle.
- Draw another triangle to the right of the square.



Describe movement

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



 Kim	 Mo	
		 Ron

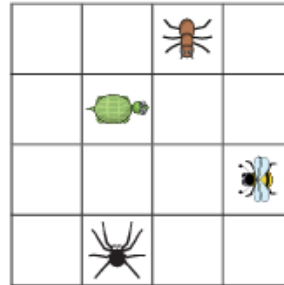
- Mo is directly above Max.
- Sam is directly below Max.
- Jo is to the right of Max.

Complete the sentence.

Sam is to the left of _____

Take the children into the playground. In pairs, they take turns to give instructions for their partner to get from one place to another. Tell them that they need to use the words forwards, backwards, left and right, together with the number of steps.

Use arrows to show the movement on the grid.

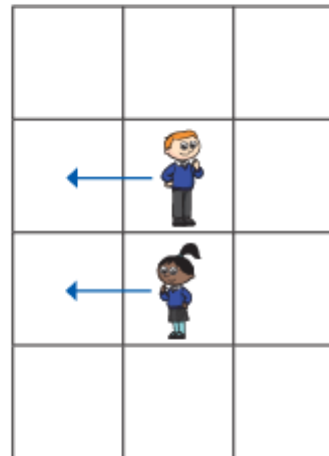


- Tiny moves 1 square backwards.
- The ant moves 2 squares forwards.
- The bee moves 3 squares forwards and then 1 square backwards.
- The spider moves 2 squares right.

Ron and Sam both move 1 square to their left.



Tiny draws arrows to show where they move to.



Do you agree with Tiny?

Explain your answer.

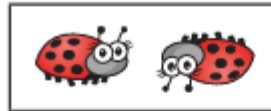
Draw arrows to show where Ron and Sam move to.



Describe 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.



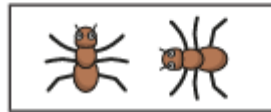
full turn



quarter turn
clockwise



half turn
anticlockwise



quarter turn
anticlockwise

Ask children to pick an object and take it in turns with a partner to turn the object. Children should describe the turns using the language full turn, half turn, quarter turn, three-quarter turn.

Describe movement and turns

Jo is describing turns.



It does not
matter which way
I turn for a
half turn.

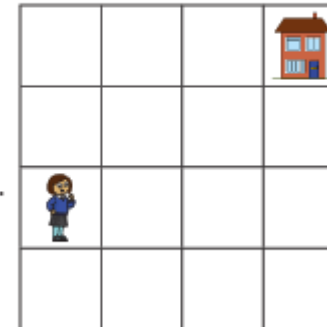
Do you agree with Jo?

Explain your answer.



Follow the instructions to draw Kim's way home.

- Go forwards 1 square.
- Turn left.
- Go forwards 2 squares.
- Make a quarter turn clockwise.
- Go forwards 2 squares.



Sam and Mo are walking home.



Which way should Sam turn?

Which way should Mo turn?

What do you notice?

Shape patterns with turns

Tell children to go on a walk around the school or the playground, recording their journey. They then describe their journey to a partner and see if they can recreate the route. They must include the words clockwise and anticlockwise.



If I make a quarter turn clockwise I will be facing the same direction as if I make a three-quarter turn anticlockwise.

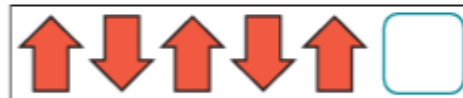
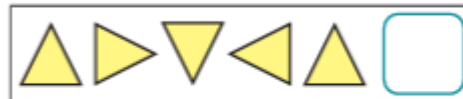
Is Tiny correct?

Explain your answer.

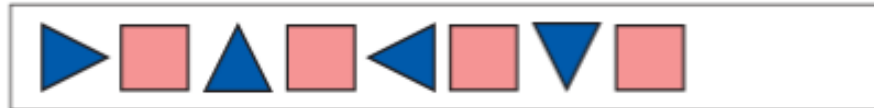


The patterns are made by turning the shape each time.

Choose the missing shapes.



Draw the next two shapes in each pattern.



How can you describe the patterns?

How many different patterns can you make with this shape?



Spot the mistake in the pattern.



Draw the correct shape.

Key vocabulary	
Left, right, above, below, between, forwards, backwards, turn, half, quarter, facing, grid, repeating, next,	
Common misconceptions	Books linking to this area
Children may confuse left and right. Children may think that there is only one way to describe position. Children may not use mathematical language to describe position. Children may find it more difficult to describe position using images than they do in practical contexts. Children need to think about which way an object is facing to work out both forwards/backwards and left/right, which can be challenging. Children may confuse clockwise and anticlockwise. Children may find it more difficult to describe a turn than to make it.	Pattern bugs by Trudy Harris The greatest gymnast of all by Stuart J Murphy
Memorable first hand experiences	Opportunities for communication
Children will be given the opportunity to go on a journey around the school. They will then be asked to describe the route and recreate it with a partner. On the field children will have the opportunity to give directions to a friend Bee bots could be used	Completing sentence stems provided by White Rose Reasoning their ideas and thinking Partner and group work

DCINA Reasonable adjustments for pupils with SEND

<i>Communication and Interaction</i> <i>Use a range of visual aids</i> <i>Give clear instructions one at a time</i> <i>Repetition</i> <i>Provide simple instructions</i> <i>Pre teach vocabulary</i> <i>Use working wall where modelling is displayed</i> <i>Give children thinking time</i> <i>Model task</i>	<i>Cognition and Learning</i> <i>Check understanding regularly</i> <i>Allow rest breaks</i> <i>Give thinking time</i> <i>Colour code signs that could be confusing</i> <i>Work checklists</i> <i>Break down tasks into small steps</i> <i>Give opportunities for over-learning</i>
<i>Social, Emotional and Mental health</i> <i>Allow access to a quiet and calm space</i> <i>Give child a special role to increase self esteem</i> <i>Provide a visual support- what to do if you are stuck</i> <i>Provide a movement break</i> <i>Seat pupil by more confident peer</i> <i>Now and next board</i> <i>Sand timers</i> <i>Movement breaks</i> <i>Break down tasks into small steps</i>	<i>Sensory and Physical</i> <i>Consider carpet space position</i> <i>Reduce background noise</i> <i>Provide a range of manipulatives- dienes may be too small</i> <i>Appropriate seating</i> <i>Wobble boards</i> <i>Writing slope</i> <i>Enlarge text</i> <i>Variety of writing tools available</i>