

Unit II: Position and direction

Describing movement

→ pages 9–11

1. a) 2
b) 2
2. a) football
b) Children should have drawn a flower on the bottom shelf below the picture frame. They could have described its position in different ways, e.g. The flower is to the left of the book.
3. a) cylinder, cuboid (either way round)
b) cube, cuboid (either way round)
4. Children should have labelled the squares as follows:

3	9	7	or	2	8	6
8	6	4		7	5	3
5	2	1		4	1	9

5. Top row: rectangle, circle
Bottom row: triangle, square

Reflect

Children could have given different descriptions, e.g.
I could say that the star is to the left of the dog.
I could say that the star is above the ice cream.

Describing turns

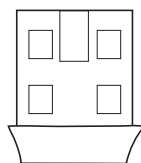
→ pages 9–11

1. Children should have circled the words:
a) clockwise
b) anticlockwise
c) clockwise
2. a) half turn
b) quarter turn
c) whole
3. Children should have matched images to descriptions as follows:
Top image → Half turn clockwise
Middle image → Quarter turn clockwise
Bottom image → Whole turn anticlockwise
4. Children could have circled either yes or no, but they should have recognised that the fly could have turned clockwise or anticlockwise. Children could have explained their answer in various ways, e.g.
No, because the fly could have made a three-quarter turn anticlockwise.

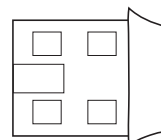
Reflect

Children should have drawn the picture rotated so that the door is: at the top; on the left; on the left:

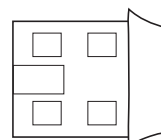
Half turn clockwise



Three-quarter turn anticlockwise



Quarter turn clockwise



Describing movement and turns

→ pages 12–14

1. Children should have put an X in the middle square of the top row.
2. Go 2 spaces forwards. Make a quarter turn clockwise.
Go 2 spaces forwards.
3. a) Children should have matched the diagrams to the instructions as follows:
Top diagram → Bottom set of instructions
Middle diagram → Top set of instructions
Bottom diagram → Middle set of instructions
b) Different instructions are possible, the most obvious being:
Quarter turn anticlockwise, forwards 1, quarter turn clockwise, forwards 1.
Forwards 1, quarter turn anticlockwise, forwards 1, quarter turn clockwise.
4. Tom is correct. Children could have explained their reasoning in different ways, e.g.

I started facing in one direction and made a quarter turn clockwise. I faced the start direction again and made a three-quarter turn anticlockwise. I ended up facing the same direction both times.

A whole turn is the same as 4 quarter turns. If you make a three-quarter turn anticlockwise, this leaves you with one quarter turn anticlockwise to get back to where you started. So, you could get to the same position by making a quarter turn in the opposite direction, which is clockwise.

Reflect

Answers will depend on the children's choice of turn. Children should be able to describe their partner's chosen turn in two ways by recognising that it is possible to reach any position by turning clockwise or anticlockwise, e.g.

Half turn clockwise








Half turn anticlockwise

Quarter turn anticlockwise

Three-quarter turn clockwise

Making patterns with shapes

→ pages 15–17

1. Children should have circled:
 - a)  (inverted triangle)
 - b)  (left-pointing triangle)
2. Children should have drawn:
 - a)  (large square)
 - b)  (triangle with right angle top left)
3. Children should have drawn:
 - a)  (two semicircles with arcs facing inward)
 - b)  (white triangle on left, black on right, right angles together at the base)
4. a) Two possibilities:
The semicircle turns a quarter turn clockwise.
The semicircle turns a three-quarter turn anticlockwise.
b) Two possibilities:
The triangle turns a half turn clockwise.
The triangle turns a half turn anticlockwise.
5. Children should have circled the fifth shape: 

Children could have explained how they recognised the odd one out in different ways, e.g.

In the pattern, all other squares are split with a diagonal line from the top left vertex to the bottom right vertex but this square is split using the other diagonal.

Reflect

Answers will vary, e.g.



End of unit check

→ pages 18–19

My journal

Some children may ask qualitative rather than mathematical questions, such as 'Does it have packaging?', or may not realise that the question must be answerable with either 'Yes' or 'No'. However, suitable questions would include:

It is in the top / bottom row?

Is it in the first / second / third / fourth column?

Is it in the left / right group of four?

Is it one space away from the apple?

Power play

The quickest route to a grey circle will depend on successive dice rolls. Children may need supervision in interpreting the dice rolls correctly.