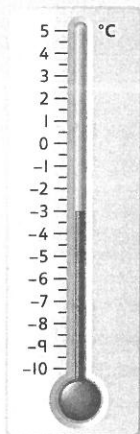


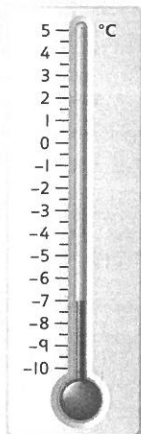
Negative numbers

Write $<$ or $>$ between the pairs of numbers.

1

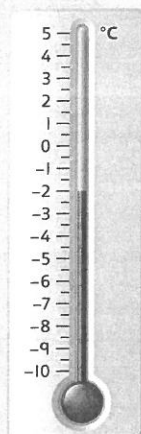


-3°C

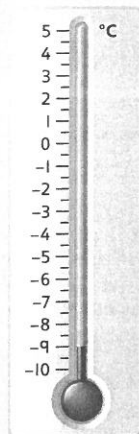


-7°C

2



-2°C



-9°C

3

-4°C

2°C

5

6°C

-6°C

4

-5°C

4°C

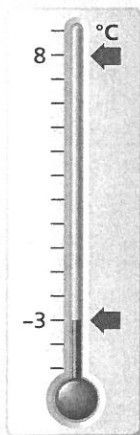
6

-12°C

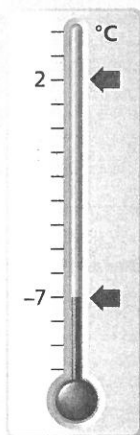
-9°C

Write the difference between these temperatures.

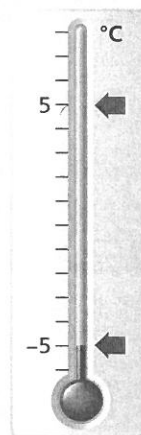
7



8



9



THINK

The temperature falls from $\square^{\circ}\text{C}$ to -10°C .
If it falls less than 4 degrees, what temperature
could it have been to begin with?



I am confident with ordering negative and positive numbers.

Compare these temperatures. Write $<$ or $>$ between each pair.

1 -7°C

-9°C

3 -1°C

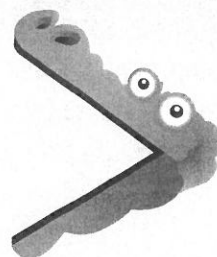
4°C

2 -6°C

-3°C

4 -8°C

2°C



Write these temperatures in order from coldest to hottest.

5 -6°C , -12°C , 5°C

8 17°C , -4°C , -1°C

6 14°C , 0°C , -7°C

9 7°C , 10°C , -10°C

7 21°C , -12°C , -2°C

10 -6°C , -1°C , 16°C

Find the difference between these temperatures.

11 -2°C and 4°C

13 -1°C and 13°C

12 -7°C and 3°C

14 -12°C and -3°C



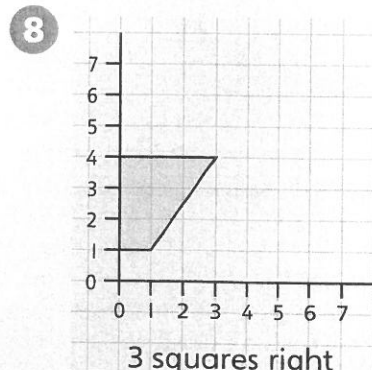
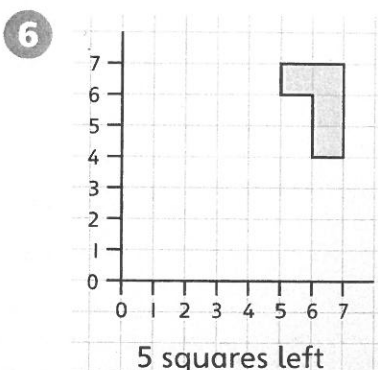
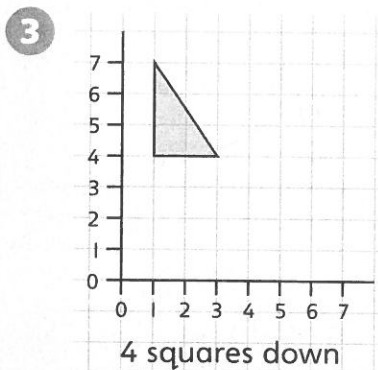
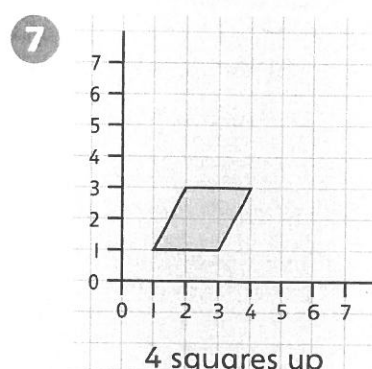
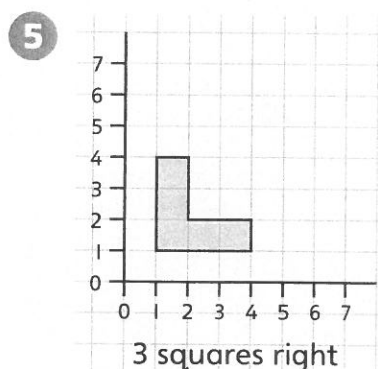
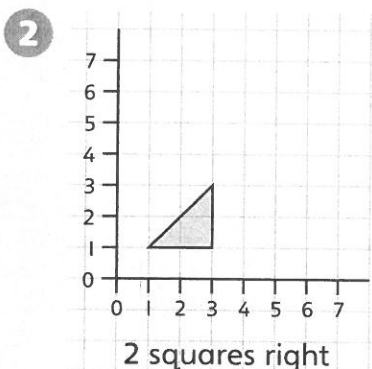
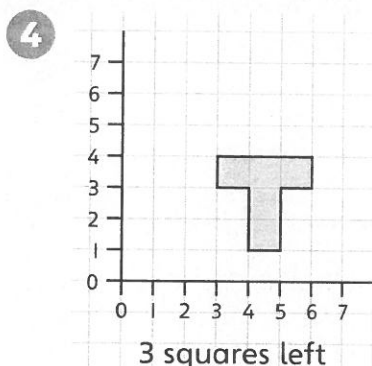
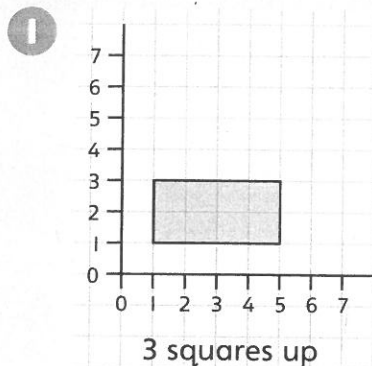
The temperature falls from $\square^{\circ}\text{C}$ to -10°C . If it starts below 0°C , how many different-sized whole number drops could there be? For example, it could drop from -3°C to -10°C , which is a drop of 7°C .



I am confident with ordering and comparing negative numbers.

Translations and reflections

Write the coordinates of each shape.
Follow the instructions. Write the new coordinates of the vertices.



THINK

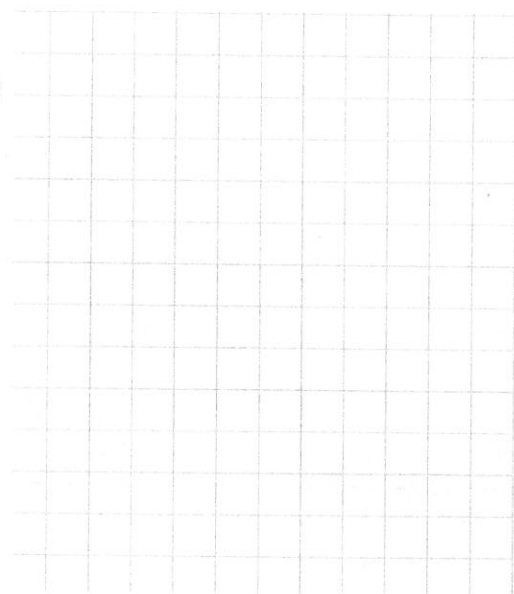
Draw a kite with the coordinates (2,1), (1,3), (3,3) and (2,4). Add 2 to all the y-coordinates and add 1 to all the x-coordinates. What happens to the kite?



I am confident with using coordinates and translating shapes.

Follow these instructions. What happens to the shapes?

- 1 Draw a coordinate grid on cm squared paper. Mark both axes with numbers from 0 to 12.
- 2 Mark the points (1,1), (2,4), (4,4) and (5,1) and join them. What shape does it make?
- 3 Add 3 to each of the y-coordinates given above. Write the four new pairs of coordinates.
- 4 Use a coloured pen or pencil to mark the new points on your grid and join them. What happens?
- 5 Add 2 to the x-coordinates of your answers to question 3.
- 6 Use a different coloured pen or pencil to mark on the new points and join them. Describe what happens to the shape now.



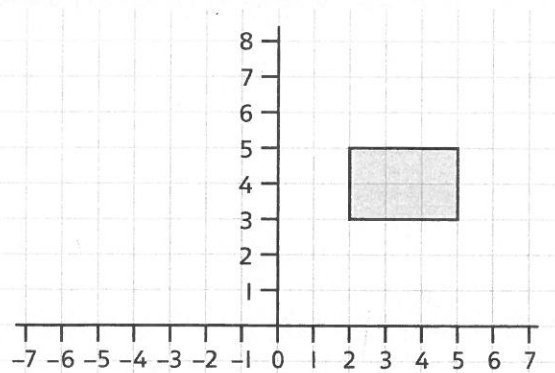
Write some rules explaining how to translate shapes. How do you move a shape up? How do you move a shape across?



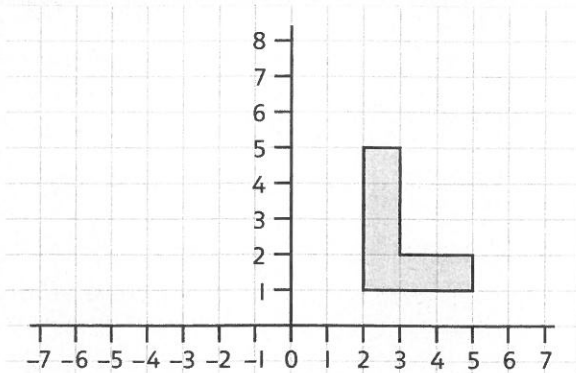
I am confident with translating shapes.

Copy these shapes onto squared paper. Reflect each shape in the y-axis. Write the new coordinates.

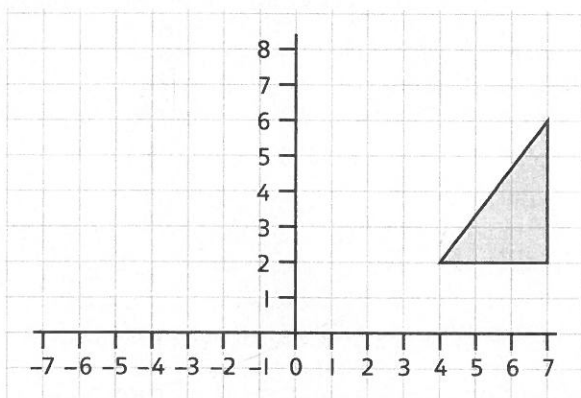
1



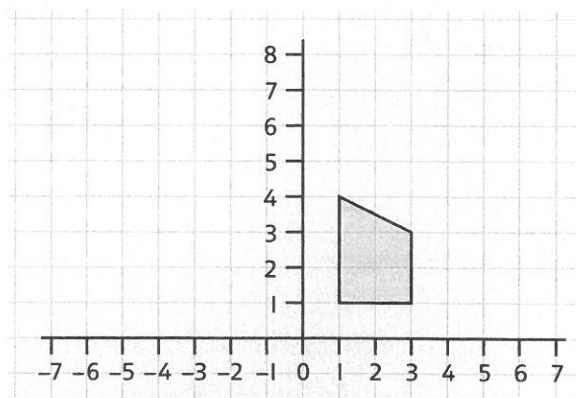
3



2



4

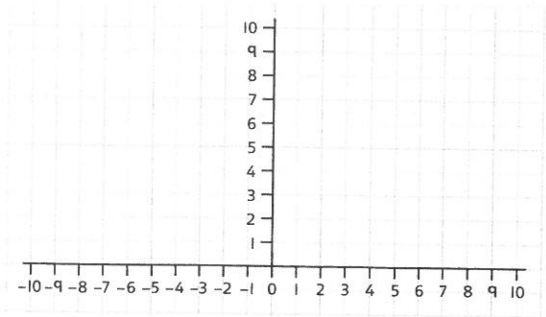


The coordinates of a square are (2,2), (2,1), (3,1) and (3,2). Write the coordinates of the new square when it has been reflected in the y-axis.

I am confident with reflecting shapes.

Follow the instructions to help you draw and reflect a polygon.

- 1 Draw a two-quadrant graph like this one.
- 2 Mark the positive and negative numbers along the x-axis.
- 3 Mark the y-axis with positive numbers going up.
- 4 Draw a polygon to the right of the y-axis, in the positive quadrant.
- 5 Write the coordinates of your polygon in a list.
- 6 Write a new list of coordinates where the x-coordinate is the negative value of the x-coordinate in your first list.
- 7 Plot these coordinates and draw the shape to the left of the y-axis, in the negative quadrant.
- 8 Use a mirror to check that your new shape is a reflection of your first shape.



Now try this challenge activity.

- 9 Draw a new graph with just one quadrant. Plot these points: (1, 1), (4, 1), (4, 5) and join them to create a right-angled triangle.
- 10 Draw a vertical line parallel with the y-axis which runs through the point (5, 0).
- 11 Reflect the shape in this line. Write the coordinates of the new shape.



Is there a relationship between the coordinates of the two shapes in the challenge activity?

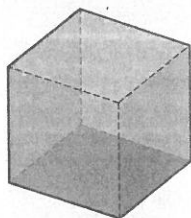


I am confident with drawing and reflecting polygons.

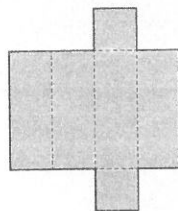
Identifying 3D shapes

Match each 3D shape to the net drawing and to the shape name.

1

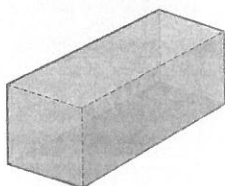


A.

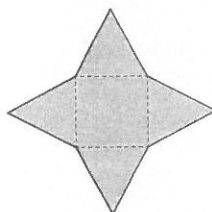


square-based
pyramid

2

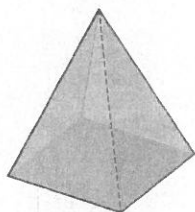


B.

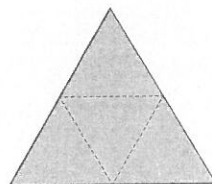


cube

3

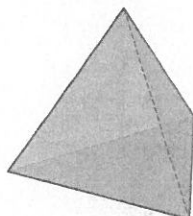


C.

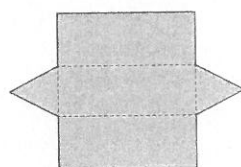


triangular
prism

4

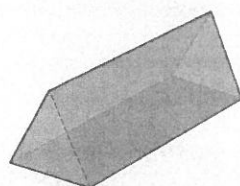


D.

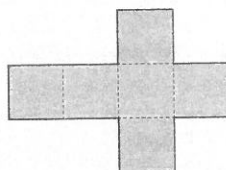


cuboid

5



E.



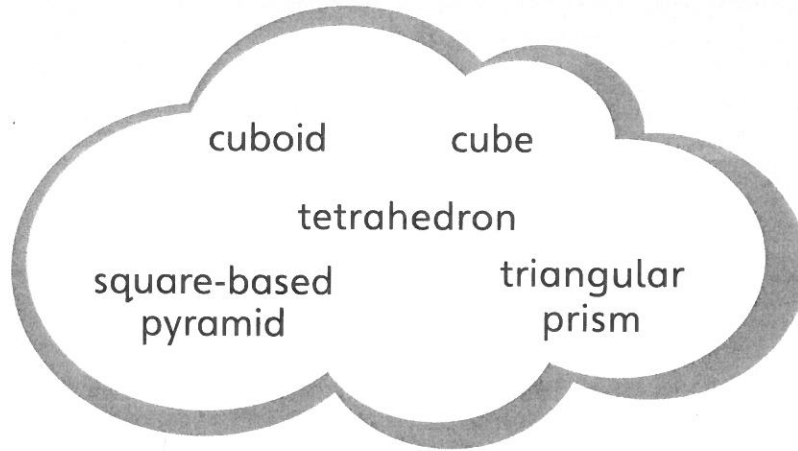
tetrahedron



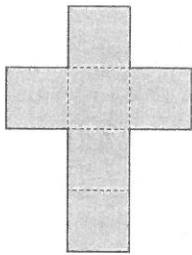
Draw a net of a cube that does not look like the one above.

I am confident with identifying 3D shapes.

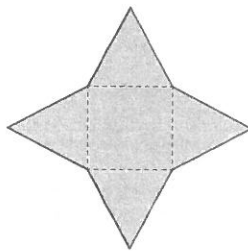
Write the shape each net will make. Choose from these shape names.



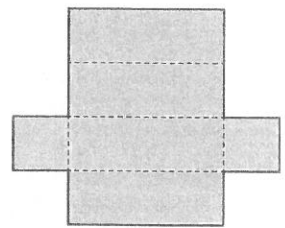
1



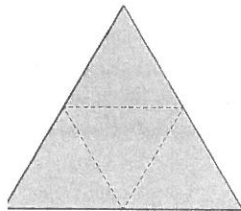
2



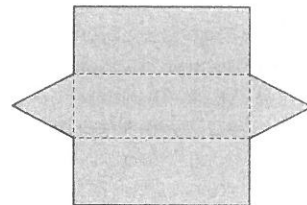
3



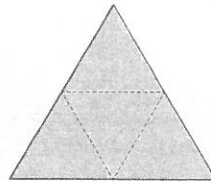
4



5



This is a net for a tetrahedron:



Draw another one.
How many more can you draw?



I am confident with identifying 3D shapes.

Column addition and subtraction

Perform these additions using the column method.

Choose to write these out as compact or expanded addition.

$$\begin{array}{r} \textcircled{1} \quad 35\,284 \\ + 12\,461 \\ \hline \end{array}$$

$$\begin{array}{r} 30\,000 \quad 5\,000 \quad 200 \quad 80 \quad 4 \\ + 10\,000 \quad 2\,000 \quad 400 \quad 60 \quad 1 \\ \hline \end{array}$$

$$\begin{array}{r} \textcircled{2} \quad 53\,164 \\ + 31\,263 \\ \hline \end{array}$$

$$\begin{array}{r} \textcircled{5} \quad 25\,674 \\ + 35\,251 \\ \hline \end{array}$$

$$\begin{array}{r} \textcircled{3} \quad 28\,341 \\ + 42\,025 \\ \hline \end{array}$$

$$\begin{array}{r} \textcircled{6} \quad 19\,875 \\ + 42\,312 \\ \hline \end{array}$$

$$\begin{array}{r} \textcircled{4} \quad 51\,963 \\ + 26\,320 \\ \hline \end{array}$$

$$\begin{array}{r} \textcircled{7} \quad 41\,759 \\ + 16\,421 \\ \hline \end{array}$$

$$\begin{array}{r} \textcircled{8} \quad 22\,221 \\ 17\,316 \\ + 3\,142 \\ \hline \end{array}$$

$$\begin{array}{r} \textcircled{9} \quad 31\,372 \\ 40\,601 \\ + 5\,414 \\ \hline \end{array}$$

$$\begin{array}{r} \textcircled{10} \quad 12\,921 \\ 23\,192 \\ + 4\,012 \\ \hline \end{array}$$



THINK

Write an addition of two 5-digit numbers where every digit is different. What is the largest total you can make?

I am confident with adding 5-digit numbers using column addition.

Perform these additions using the column method.

$$\begin{array}{r} 1 \quad 46\,825 \\ + 19\,041 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \quad 38\,421 \\ + 40\,593 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \quad 53\,296 \\ + 46\,345 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \quad 52\,319 \\ + 25\,920 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \quad 42\,861 \\ + 38\,412 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \quad 26\,139 \\ + 67\,408 \\ \hline \end{array}$$



$$\begin{array}{r} 7 \quad 17\,245 \\ 59\,652 \\ + 1\,031 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \quad 31\,632 \\ 37\,541 \\ + 5\,235 \\ \hline \end{array}$$

$$\begin{array}{r} 11 \quad 21\,480 \\ 64\,271 \\ + 17\,155 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \quad 62\,418 \\ 13\,646 \\ + 4\,101 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \quad 48\,217 \\ 12\,426 \\ + 33\,145 \\ \hline \end{array}$$

$$\begin{array}{r} 12 \quad 30\,240 \\ 45\,918 \\ + 27\,514 \\ \hline \end{array}$$



Write an addition of two 5-digit numbers where every digit is different. What is the largest total you can make? What is the smallest total you can make? Can you make 22 221 if one of the two numbers has 4 digits?



I am confident with adding 5-digit numbers using column addition.