Mathematics Mastery

Homework book

Summer

Year 4

This guide is for parents/carers and any adult working with the child.

The Year 4 homework book is aimed at parents and carers, to enable you to engage in maths with your child in a fun and practical way. There are ten activities, each linked to the units of work in the Year 4 programme of study.

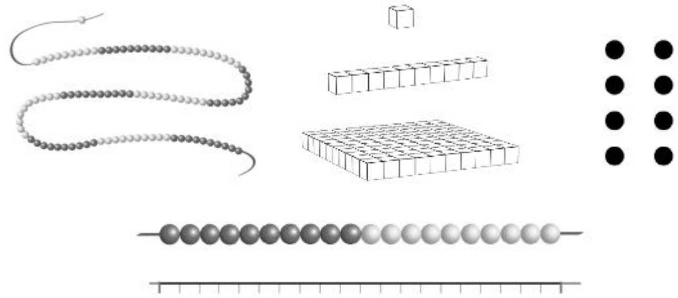
In order to support your child with the tasks, each piece of homework is accompanied by parental guidance. This guidance aims to provide an opportunity for you to understand the methods your child is being taught, which may differ from methods you are familiar with.

What is ‘Mastery’?

The ‘mastery approach’ to teaching mathematics is the underlying principle of Mathematics Mastery. Instead of learning mathematical procedures by rote, we want your child to build a deep understanding of concepts which will enable them to apply their learning in different situations. We do this by using three key principles:

Conceptual understanding

Your child will use multiple concrete and pictorial representations and make connections between them. A key part of a ‘deep understanding’ in maths is being able to represent ideas in lots of different ways.



34 864 - 25 423 = 9441

This is an ***equation***

We don’t round a number ‘up’ or ‘down’, we round it to the ***nearest multiple*** of 10, 100, 1000 etc.

Mathematical language

When asked to explain, justify and prove their ideas, your child is deepening their understanding of a concept. The correct mathematical vocabulary is taught from the outset and communication and discussions are encouraged.

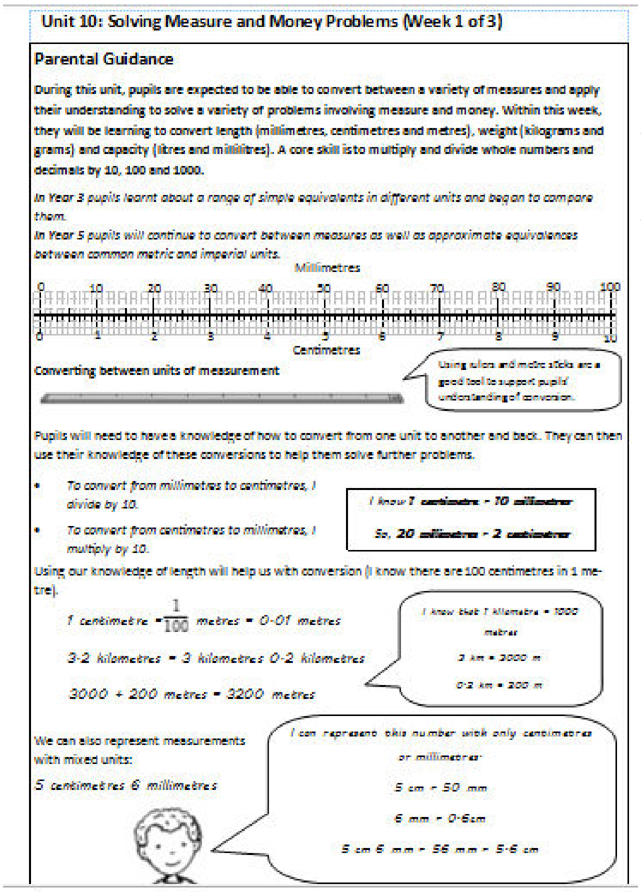
Mathematical thinking

Lots of opportunities are planned for your child to investigate open questions that require them to sort and compare, seek patterns and look for rules. Good questioning, both for and from your child, build a deeper understanding of maths.

What is the same? What is different?

Is there a rule? Is it always, sometimes or never true?

Parental guidance



Unit 10: Solving Measure and Money Problems (Week 1 of 3)

Parental Guidance

During this unit, pupils are expected to be able to convert between a variety of measures and apply their understanding to solve a variety of problems involving measure and money. Within this week, they will be learning to convert length (millimetres, centimetres and metres), weight (kilograms and grams) and capacity (litres and millilitres). A core skill is to multiply and divide whole numbers and decimals by 10, 100 and 1000.

In Year 3 pupils learnt about a range of simple equivalents in different units and began to compare them.
In Year 5 pupils will continue to convert between measures as well as approximate equivalences between common metric and imperial units.

Converting between units of measurement

Pupils will need to have a knowledge of how to convert from one unit to another and back. They can then use their knowledge of these conversions to help them solve further problems.

- *To convert from millimetres to centimetres, I divide by 10.*
- *To convert from centimetres to millimetres, I multiply by 10.*

I know 1 centimetre = 10 millimetres

So, 20 millimetres = 2 centimetres

Using our knowledge of length will help us with conversion (I know there are 100 centimetres in 1 metre).

1 centimetre $= \frac{1}{100}$ *metres = 0·01 metres*

3·2 kilometres = 3 kilometres 0·2 kilometres

3000 + 200 metres = 3200 metres

We can also represent measurements with mixed units:

5 centimetres 6 millimetres

Unit number and unit title

Key learning

Prior and future learning: where this objective fits into the sequence of learning over time.

A worked example and/or followed by key points to support your child.

On every parental guidance page the unit title is located at the top, followed by an overview of the key learning. In addition, you will see at the beginning of each unit where the key learning fits in with what your child has previously learnt, along with where the learning will be taken in subsequent years of study. It is important to understand that the principle of mastery does not encourage acceleration, and remember, **depth** of understanding is key to your child becoming a confident mathematician who can think flexibly.

Parent's and pupil's comments

Pupil's comments | **Parent's comments**

Pupil's comments	Parent's comments

Every activity has a space for parents and pupils to write some comments after it has been completed. This is an opportunity to comment on the result of the activity, if it was enjoyable and how your child found the maths.

You can find further information about the Mathematics Mastery programme online at **www.mathematicsmastery.org**. If you have any questions regarding this homework book please speak with your child's class teacher.

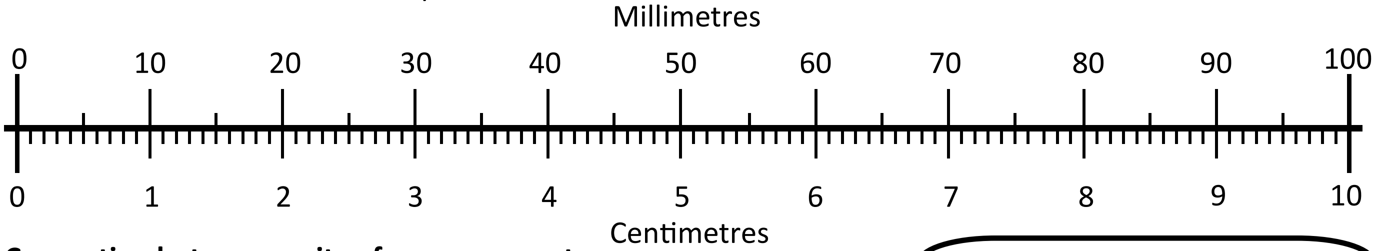
Unit 10: Solving Measure and Money Problems (Week 1 of 3)

Parental Guidance

During this unit, pupils are expected to be able to convert between a variety of measures and apply their understanding to solve a variety of problems involving measure and money. Within this week, they will be learning to convert length (millimetres, centimetres and metres), weight (kilograms and grams) and capacity (litres and millilitres). A core skill is to multiply and divide whole numbers and decimals by 10, 100 and 1000.

In Year 3, *pupils learnt about a range of simple equivalents in different units and began to compare them.*

In Year 5, *pupils will continue to convert between measures as well as approximate equivalences between common metric and imperial units.*



Converting between units of measurement

Using rulers and metre sticks are a good tool to support pupils' understanding of conversion.

Pupils will need to have a knowledge of how to convert from one unit to another and back. They can then use their knowledge of these conversions to help them solve further problems.

- *To convert from millimetres to centimetres, I divide by 10.*
- *To convert from centimetres to millimetres, I multiply by 10.*

*I know **1 centimetre = 10 millimetres**.*

*So, **20 millimetres = 2 centimetres**.*

Using our knowledge of length will help with conversion (I know there are 100 centimetres in 1 metre).

1 centimetre = $\frac{1}{100}$ *metres = 0·01 metres*

3·2 kilometres = 3 kilometres 0·2 kilometres

3000 + 200 metres = 3200 metres

I know that 1 kilometre = 1000 metres

3 km = 3000 m

0·2 km = 200 m

We can also represent measurements with mixed units:

5 centimetres 6 millimetres

I can represent this number with only centimetres or millimetres.

5 cm = 50 mm

6 mm = 0·6cm

5 cm 6 mm = 56 mm = 5·6 cm

Make Me a Match

Can you find the measurements that are equal to each other in the box below?

Fill in the table (see resource for 'Make Me a Match', page 23)

18 cm	460 g	20 cm	0·18 m
4·6 Litres	$\frac{1}{2}$ m	500 mm	0·46 kg
$\frac{1}{5}$ m	4·7 km	180 mm	4700 m
50 cm	18 mm	0·2 m	4600 ml

Pupil's comments

Parent's comments

Parental Guidance

During this unit, pupils are expected to be able to convert between a variety of measures and apply their understanding to solve a variety of problems involving measure and money. Within this week, they will be developing strategies in order to plan and solve problems involving measure and money.

Developing strategies to plan and solve problems

In order to solve problems, it is important to understand exactly what the problem is. To make sense of the numbers involved, pupils are encouraged to discuss and draw out the problem with the aid of concrete manipulatives and pictorial representations. These can include bars, number lines and diagrams.

Plain	Patterned
1.4 m	80 cm
1.4 m	80 cm
1.4 m	80 cm
1.4 m	80 cm
1.4 m	80 cm

Physical aids help to make the problem concrete and help to start to begin to solve it.

<u>The Problem</u>

Mr Hadfield sold 6 ribbons altogether. Some were plain (1.4 m); some were patterned (80 cm). Their total length was 6 metres.

How many **plain** ribbons did he sell?

How many **patterned** ribbons did he sell?

By using trial and improvement, pupils can use answers where they were not correct to help inform their next decision. This will help them to come to the solution with a clearer strategy.

1.4 m	1.4 m	1.4 m	1.4 m	80cm	80 cm

140 x 4 = 560 cm = 5·6 m

80 x 2 = 160 cm = 1·6 m

Total: 7·2 m

I think I should use more plain ribbons and fewer patterned as it gives me more chance to get something that might add to total 6·0 m.

My answer is too big...

1.4 m	1.4 m	80 cm	80 cm	80 cm	80 cm

140 x 2 = 280 cm = 2·8 m

80 x 4 = 320 cm = 3·2 m

2·8 metres + 3·2 metres = 6 metres

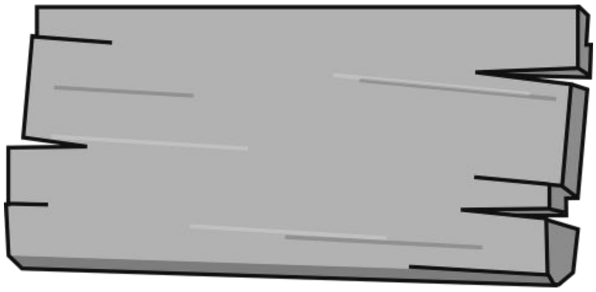
Try to encourage your child to explain their thinking and reasons for it in full sentences.

Wood Planks

Mr Peters is buying wood planks for the new school Woodwork Club. The shop sells two types of wood that are different lengths;

Pine Wood Planks: 1·6 metres

Oak Wood Planks: 70 cm



In total, Mr Peters buys **9 metres of wood.**

How many pine wood planks does he buy?

How many oak wood planks?

Hint: use the 'Wood Planks' resource sheet to help you solve the problem. See page 25.

What strategy will help you to solve this problem?

Is your answer too big or too small?

How can you improve upon your answer?

Extension:

At the end of the project, Mr Peters has 9 planks of wood left. In total length, they **measure more than 13 metres.**

What combination of pine and oak planks **could** he have?

Pupil's comments

Parent's comments

Parental Guidance

During this unit, pupils are expected to be able to convert between a variety of measures and apply their understanding to solve a variety of problems involving measure and money. Within this week, they will continue to develop strategies in order to plan and solve problems involving measure and money.

Developing strategies to plan and solve problems

When children are solving problems involving money, it is crucial that they maintain a grounding in place value. The pupils will have to use their knowledge of using money to convert the amounts into either pence or pounds.

Example: £5 + 20p = $\boxed{}$

5 plus 20 = 25,

So £5 + 20p must be £25!

Misconception!

20 pence = £0·20

So £5 + £0·20 = £5·20

£5 = 500 pence

So 500 + 20 pence = 520 pence

Pupils should use place value to help them convert between pounds and pence.

I know 20 + 20 + 5 + 5 = 50

Therefore, I don't need to use the 1p coin to make this amount.

I want to use as many £2 coins as I can until I can't use any more. Then I will use £1 coins until I can't use any more. Then 20p coins. This strategy will allow me to use the fewest coins.

Pupils will be familiar with a number of different approaches to help them to structure their problem solving. They should be encouraged to use concrete manipulatives and pictorial representations to help show their problem. With the problem 'Cash Flow' they may want to use a table to show what money they have used so far (found in resources page 27).

Pupils should be explaining their thought process when giving answers to a problem. The activity can be further adapted by altering the constraints a child can use to make the totals (e.g. amount of coins).

Cash Flow

Deidre works in a bank. Everyday, customers come into the bank and she counts out the correct amount of money. Today, she only has 5 denominations of money: £2 coins, £1 coins, 20 pence coins, 5 pence coins and 1 pence coins.

A customer would like: **£7.50**

How many different ways could Deidre make this total using the coins she has?

Show your working and try to work in a systematically.

You may wish to convert all of the money into the same unit first!

Can you use a clear strategy to help organise your problem solving?

£2   £1   20p   5p   1p

Further Thought:

What is the fewest number of coins that you can use?

How do you know that is the correct answer?

Another customer would like:

£3·73

Are there more or less ways to make this than £7·50? Explain your reasoning in full sentences.

Pupil's comments

Parent's comments

Unit 11: Shape and Symmetry (Week 1 of 3)

Parental Guidance

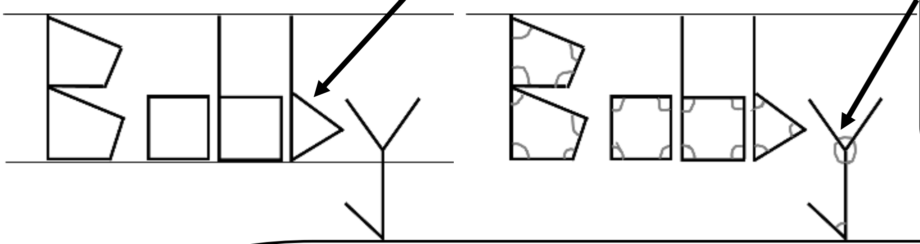
In this unit, pupils will identify and classify acute, right and obtuse angles. They will build on their knowledge of 2-D shapes including exploring quadrilaterals and different types of triangles. They will then move on to look at symmetry in shapes and complete symmetrical patterns. This week, pupils will have focused on identifying and investigating different angles using the terms acute, right and obtuse.

In Year 3, *pupils will have identified right angles and were introduced to acute and obtuse angles.*

In Year 5, *pupils will consolidate their knowledge of angles, drawing different angles and measuring them in degrees (°).*

Players will use a ruler to write their name using only straight lines.

They will then mark on the internal angles using three different colours: one colour to show acute angles, one colour to show right angles and another colour to show obtuse angles.



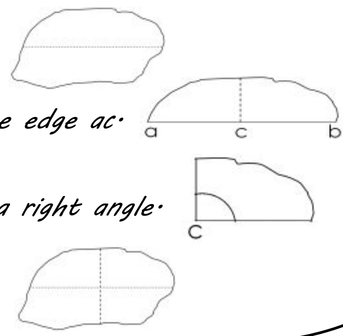
How to make a right angle checker using scrap paper.

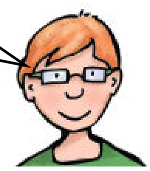
Fold a scrap piece of paper approximately in half.

Fold again so that the edge bc lies exactly along the edge ac.

You should now have this shape. The angle at c is a right angle.

When you open your shape it should look like this.

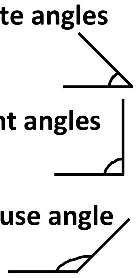




Players then tally up the each type of angle and then add them together for an overall total. The person with the most angles altogether wins.

Player 1

Type of Angle	**Tally**	**Frequency**
Acute	卌 II	7
Right	卌 卌 I	11
Obtuse	卌	5
Total	卌 卌 卌 卌 III	23



Acute angles Angles that are less than a right angle.

Right angles Angles that measure 90°.

Obtuse angle Angles that measure between 90° and 180°.

What’s in a name?

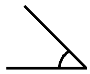
You will need:

A ruler, a pencil, three different coloured pencils, resource sheet see pages 28 and 29

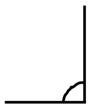
Instructions:

- Each player writes their name using only straight line segments.
- Use one colour to show each of the type of angles; acute, right and obtuse.
- Tally up for each type of angle.
- Find the total number of angles in each name.
- The player with the most angles wins.

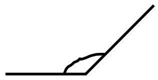
Acute angles Angles that are less than a right angle.



Right angles Angles that measure 90°.



Obtuse angle Angles that measure between 90° and 180°.

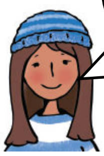


Player 1

Type of Angle	Tally	Frequency
Acute		
Right		
Obtuse		
Total		

Player 2

Type of Angle	Tally	Frequency
Acute		
Right		
Obtuse		
Total		



How does your total change if you include your surname?

Pupil’s comments

Parent’s comments

Unit 11: Shape and Symmetry (Week 2 of 3)

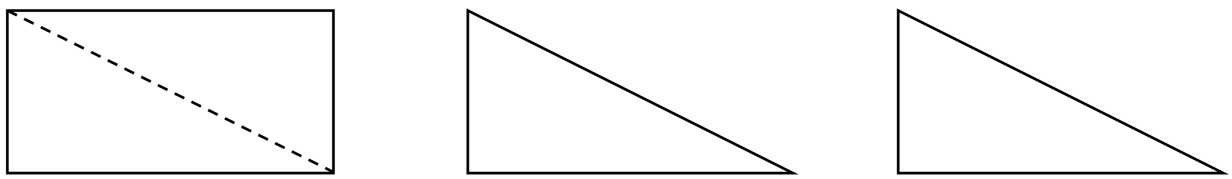
Parental Guidance

In this unit, pupils will identify and classify acute, right and obtuse angles. They will build on their knowledge of 2-D shapes including exploring quadrilaterals and different types of triangles. They will then move on to look at symmetry in shapes and complete symmetrical patterns. This week pupils will have focused on comparing and classifying quadrilaterals and started to draw them. They will also have begun to explore different types of triangles.

In Year 3, *pupils will have been introduced to the term quadrilateral and begun to explore them as a geometric shape.*

In Year 5, *pupils will extend their knowledge of quadrilaterals by identifying, describing and comparing different types of quadrilaterals.*

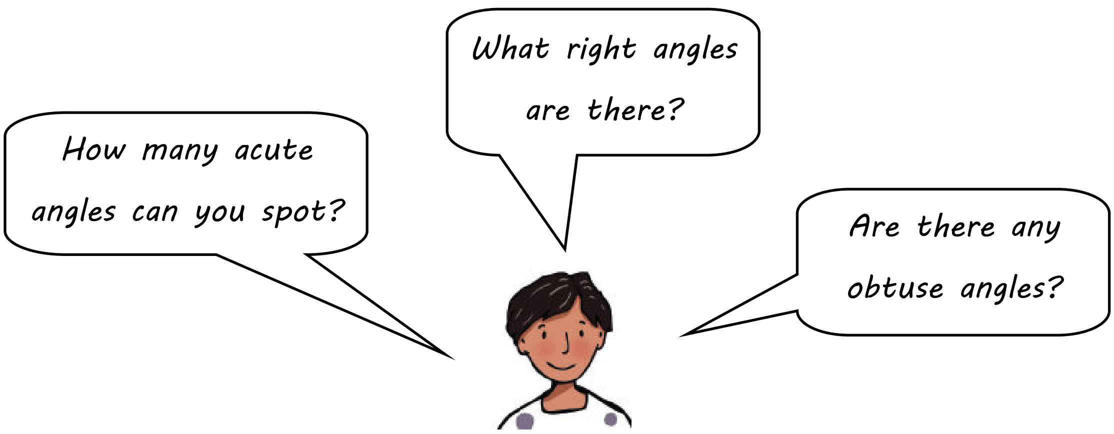
This weeks activity involves cutting a rectangle diagonally to create two triangles and using them to create different quadrilaterals.



The triangles can be flipped or rotated to fit together.

Your child can then draw the quadrilaterals they have created using the resource sheet (Page 33). To keep track of the quadrilaterals they have made, they will need to mark on the two triangles that make each quadrilateral.

You could ask your child some key questions to build on their learning of angles from last week.



Quadrilateral

Key vocabulary

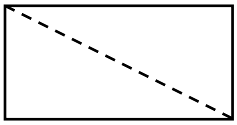
triangle square quadrilateral

I know… ….because…

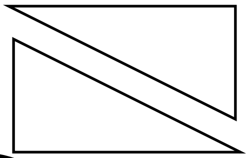
You will need:

A piece of A4 paper, scissors, resource sheet (see page 31 and 33).

Instructions:



- *Cut the piece of paper diagonally from one corner to the opposite corner.*
- *Using the two triangles how many quadrilaterals can you make using the two triangles edge to edge?*



1. Can the two triangles overlap to form a quadrilateral? If not, why not?

2. Does it work the same with a square? Why? Why not?

Pupil's response for question 1

Pupil's response for question 2

Pupil's comments

Parent's comments

Unit 11: Shape and Symmetry (Week 3 of 3)

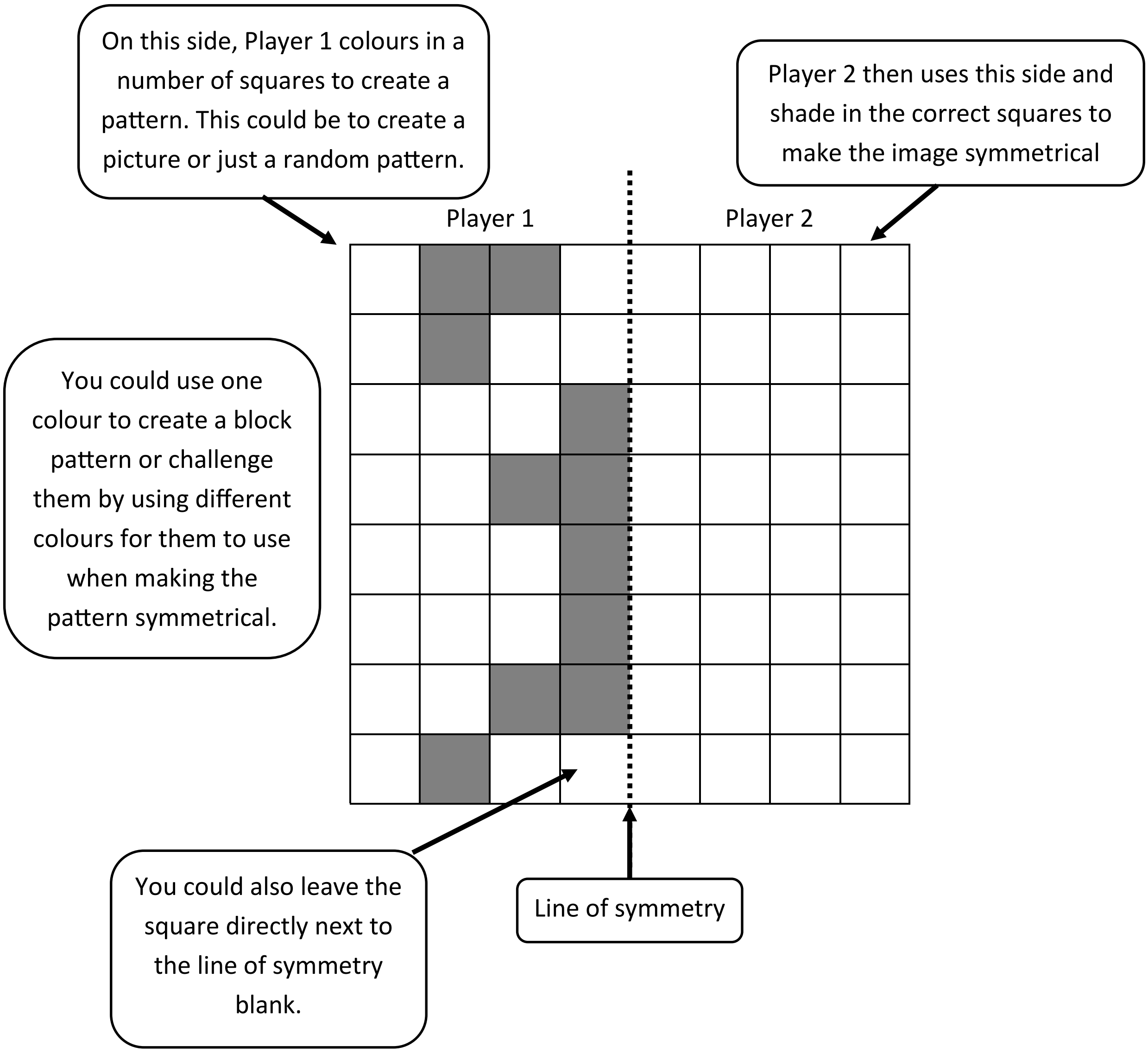
Parental Guidance

During this unit, pupils will identify and classify acute, right and obtuse angles. They will build on their knowledge of 2-D shapes including exploring quadrilaterals and different types of triangles. They will then move on to look at symmetry in shapes and complete symmetrical patterns. This week, pupils will have focused on identifying lines of symmetry in 2-D shapes and will have completed patterns along a lime of symmetry.

In Year 3, *pupils will have been introduced to the term symmetry in relation to 2-D shapes.*

In Year 5, *pupils will consolidate their knowledge of symmetry and use this to describe the properties of 2-D shapes.*

This week's activity involves creating a pattern and then the other player uses the line of symmetry to reflect the pattern. It would be ideal for the parent to create a pattern first.



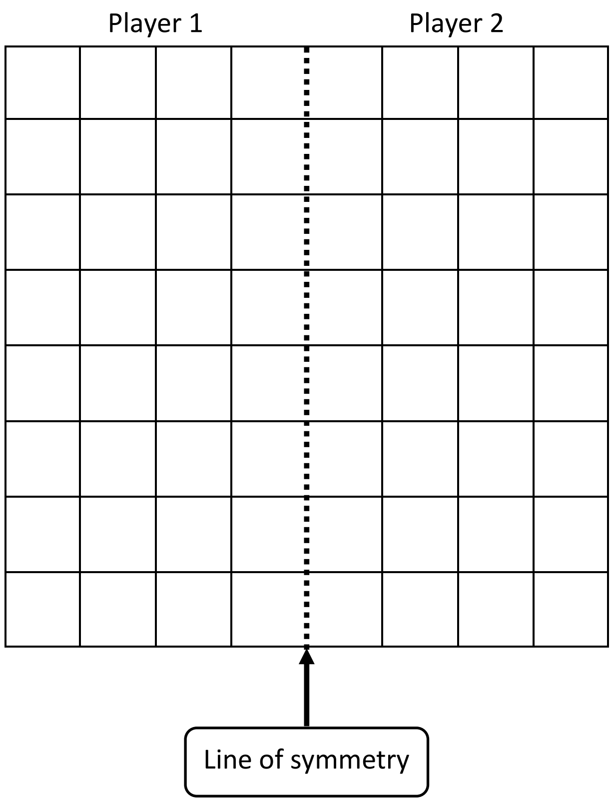
Pattern Builder

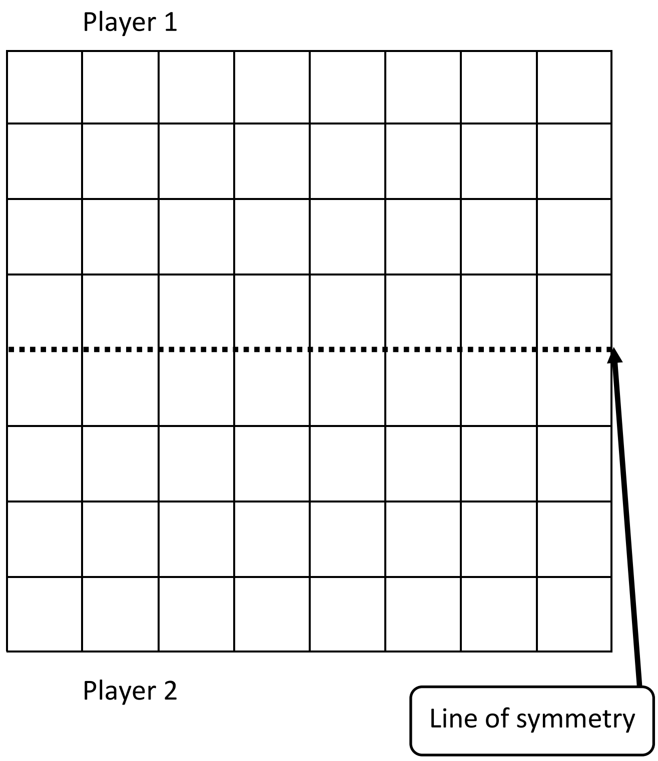
You will need:

Different coloured pencil crayons

Instructions:

- Take it in turns to design a pattern on one side of the line.
- Your partner then has to complete the pattern to make it symmetrical.
- Swap over and repeat.





Pupil's comments

Parent's comments

Unit 12: Position and Direction (Week 1 of 1)

Parental Guidance

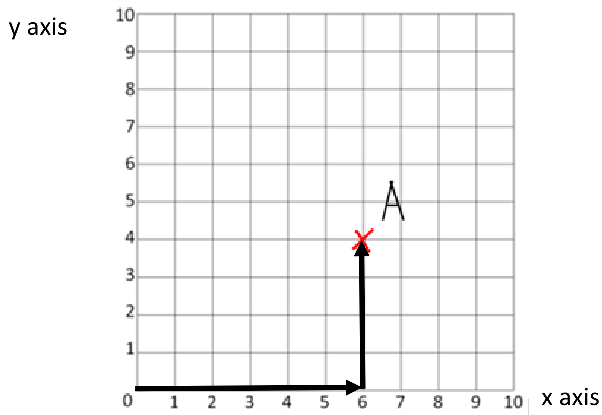
During this unit, pupils will be first introduced to coordinates and translations. Pupils will plot and read coordinates in the first quadrant doing this to also draw sides to complete different types of triangles. Pupils will then translate points in the first quadrant.

In Year 3, *pupils named geometric shapes and looked at their properties including identifying pairs of perpendicular and parallel lines, and started to explore quadrilaterals. They also identified right angles and were introduced to acute and obtuse angles, and will have started to look at completing symmetrical figures.*

In Year 5, *pupils will be measuring and drawing angles in degrees and will be introduced to reflex angles.*

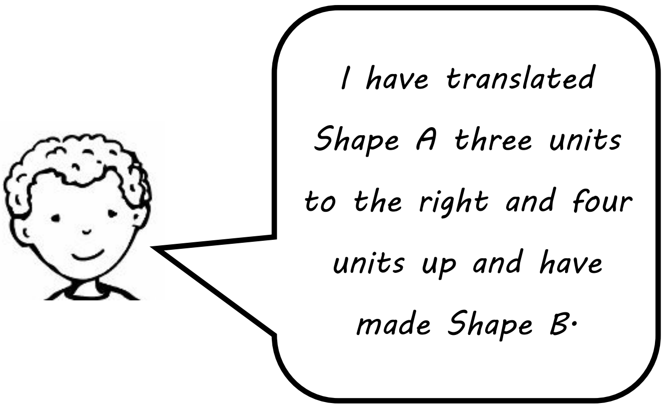
<u>What is a coordinate?</u>

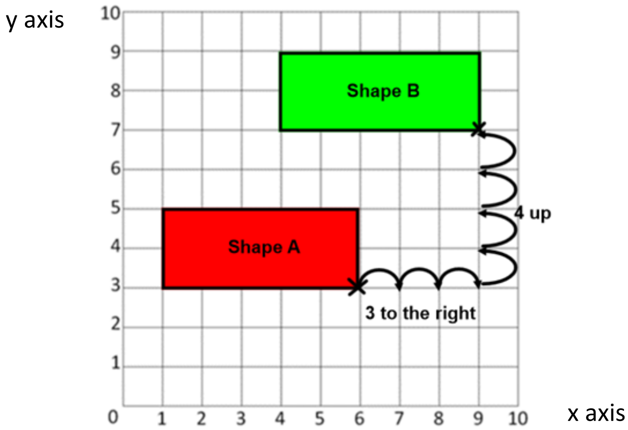
Coordinates are a set of values that show an exact position. On maps and graphs it is common to have a pair of numbers to show where a point is: the first number (on the x axis) shows the distance along, and the second number (the y axis) shows the distance up or down. For example; Point A is found at (6, 4) 6 units across to the right and 4 units up.



<u>What is a translation?</u>

Translation is where you move a shape into a different position, without changing its size. This is shown on the image below. Shape A has been translated three units to the right and four units up to become Shape B. Following the path of one vertex shows this move.



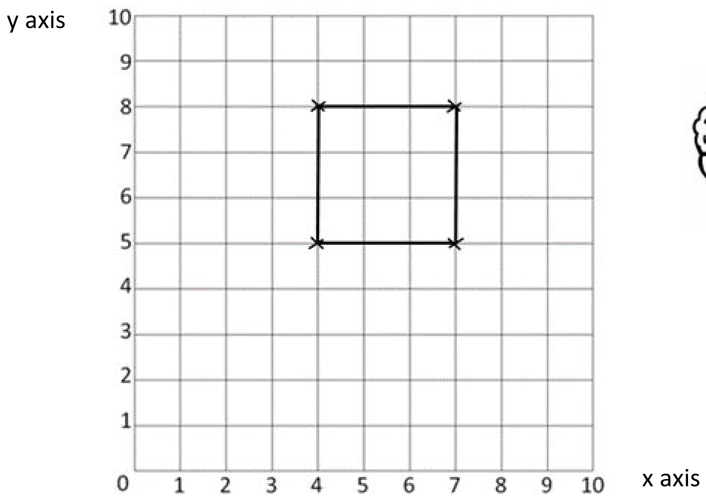


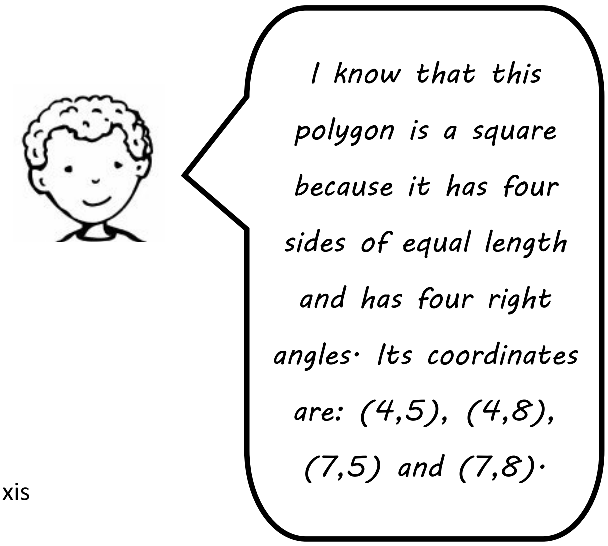
What's your coordinate?

You will need: Two different coloured pencils, a ruler, Resource sheet 1A (see page 35), Resource sheet 1B (see page 37) and Resource Sheet 2 (see page 39).

Instructions for Task One:

- You will need to play this game with a partner
- Label yourselves Player A and Player B
- Each player takes turns in choosing a polygon from Resource sheet 1B
- Partner A must read out the coordinates of the shape to Player B and Player B must then plot the coordinates onto their quadrant found on Resource sheet 1A
- Join up your completed shape with a ruler
- Once you have completed your shape, you need to talk to your partner to describe and name the shape (see example below in speech mark). Complete three shapes each and write your description of one shape, in a full sentence, in the pupil comment box below.





Instructions for Task Two:

- Using Resource sheet 2, follow the instructions to plot the coordinates and then translate the shape using the instructions given.

Pupil's comments

Parent's comments

Unit 13: Reasoning with patterns and sequences (Week 1 of 2)

Parental Guidance

This two-week unit is an opportunity for pupils to explore number patterns and sequences. The content includes coverage of Year 4 objectives for Roman numerals to 100 and negative numbers, to ensure that they are fully confident in these areas before progressing in Year 5.

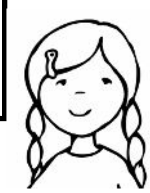
In Year 3, *pupils were first introduced to Roman numerals to 12, through the context of time.*

Pupils will not have previously been taught negative numbers formally, however may have skip counted in negative numbers or have been introduced to them in Maths Meetings in Year 4.

Pupils will have met the notation for squared (^{2}) when learning about area, and this link should be made when introducing square numbers.

In Year 5, *pupils will build on their knowledge of Roman numerals, being introduced to them up to 1000, and reading years in Roman numerals. Pupils will continue to count forwards and backwards using negative numbers, but will also be expected to interpret them in context. Pupils will consolidate the Year 5 objective first introduced in this unit, to recognise and use square numbers, and the notation for squared (^{2}).*

The ancient Romans invented a set of symbols to represent the number system; these are called Roman numerals.



What is a Roman numeral?

1 = I
2 = II
3 = III
4 = IV
5 = V
6 = VI
7 = VII
8 = VIII
9 = IX

After you reach the number 10, a variety of different symbols are used to represent larger numbers. Here are some examples: 10 = X, 20 = XX, 30 = XXX, 40 = XL, 50 = L, 60 = LX, 70 = LXX, 80 = LXXX 90 = XC, 100 = C

I saw some Roman numerals when I visited Rome on holiday. This symbol represents the number 8

King Henry VIII was an important historical figure in the Tudor times too.

Decode those numerals! (Task One)

You will need:

A range of different coloured pencils or pens

Instructions:

Match the Roman numeral to the correct number and colour/shade them both in the same colour.
Continue until your grid is complete.

XC	15	LIX	100	IX
2	XXX	XV	III	5
XL	40	97	XXI	XLIII
L	V	43	74	XII
4	90	LXX	70	XCVII
85	LXV	65	IV	12
II	C	LXXIV	LXXXV	59
50	9	30	21	3

Task Two: Fill in the missing Roman numerals in the sequences below and then write the rule to explain the sequences. For Question 4, can you come up with your own sequence and explain the rule?

1) XIV, XVI, ____ , XX, ____ , ____ The rule is: ____________

2) ____ , XLIX, LIV, LIX, ____ , LXIX The rule is: ____________

3) C, XCI, LXXXII, ____ , ____ , ____ The rule is: ____________

4) ____ , ____ , ____ , ____ , ____ The rule is: ____________

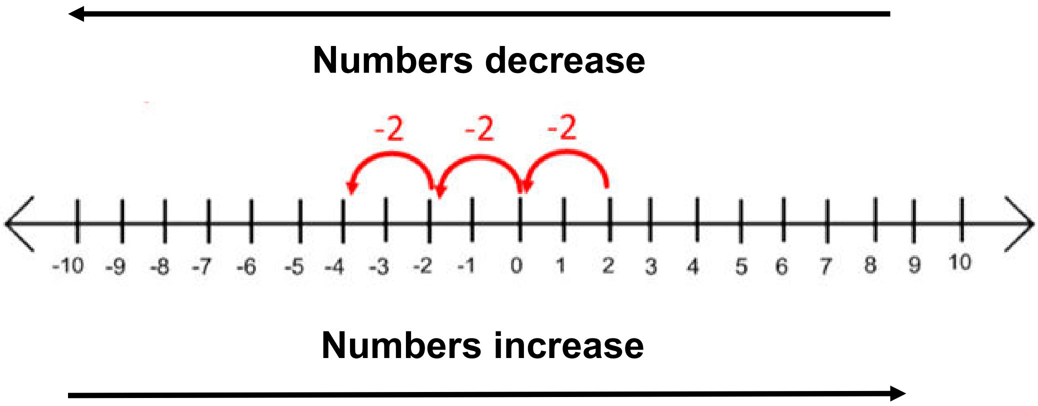
Pupil's comments

Parent's comments

Unit 13: Reasoning with patterns and sequences (Week 2 of 2)

Parental Guidance

During this unit, pupils will have explored: number sequences which include both positive and negative numbers in sequences, using a number line with sequences, identifying the term in a sequence and the rule to explain the sequence.

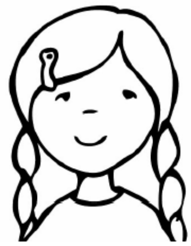


Here is my number sequence:

-20, -14, __ , -2, 4, ___, 16

Is the sequence increasing or decreasing? What are the missing terms? What is the rule for this sequence?

The sequence is increasing. The missing terms are -2 (negative two) and 10. The rule for this sequence is add 6.



Negative numbers are all around us! I have seen negative numbers used in a lift, for recording the temperature and even at the bank.

Where have you seen negative numbers?

Which way to go?

You will need: *A small counter, a pencil, two dice, a partner and Resource sheet 1A See page 40 and 1B see page 41.*

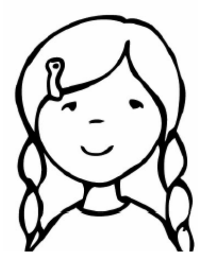
Instructions for Game One (Resource sheet 1A):

First, label yourselves Player A and Player B. Player A will be known as ‘positive’ and Player B will be known as ‘negative’. Next, place the counter on zero (0). Player A will move the counter from left to right and Player B will move the counter from right to left. Take turns to throw the dice and move your counter the number of steps, left or right. Player A will win the game if they reach 15 and Player B will win the game if they reach –15.

Instructions for Game Two (Resource sheet 1B):

This time you will be using a number line with intervals of 2. Set up the game as before, but this time Player A and Player B take it in turns to roll two dice and add the numbers together to decide on how many spaces to move either left or right. To win the game, Player A must reach 20 and Player B must reach –20.

Is it better to play a game where you have to reach the end exactly, or where you can go over the end? Why?



Pupil’s comments

Parent’s comments

Unit 14: 3-D shape (Week 1 of 1)

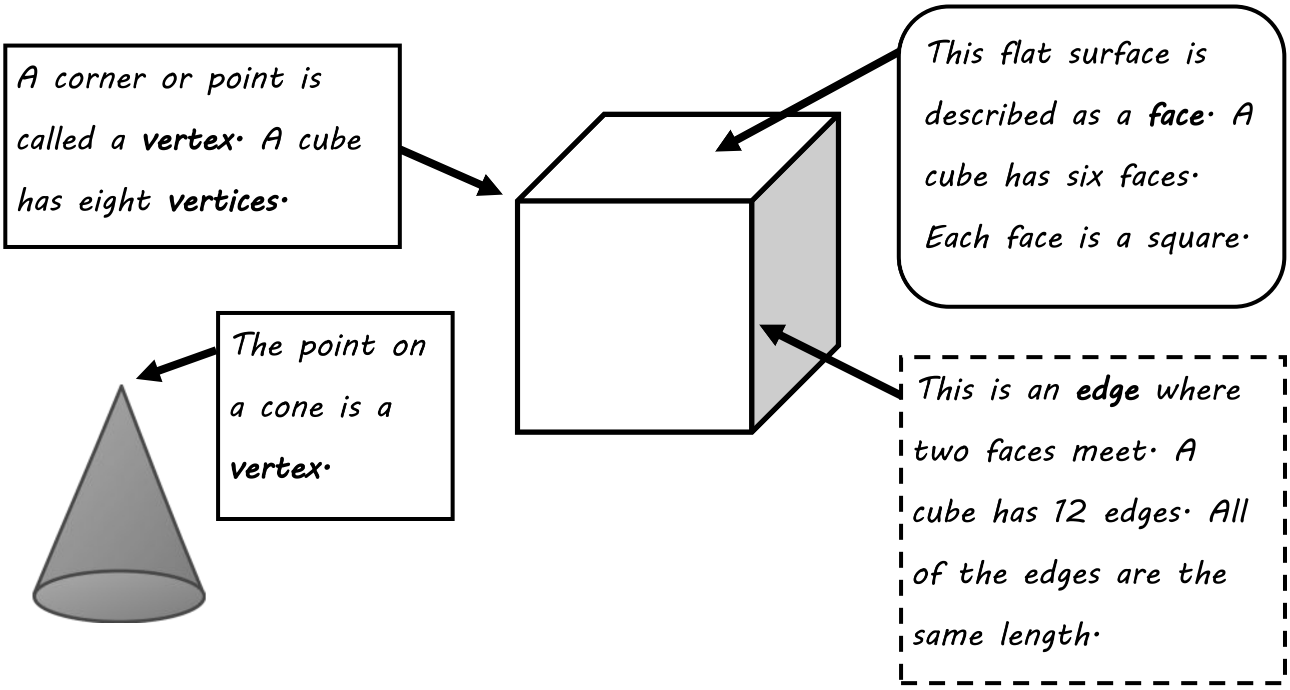
Parental Guidance

During this unit, pupils will recap and consolidate their knowledge of 3-D shapes and their properties. They will begin to link 3-D shapes to their 2-D representations and try to build them.

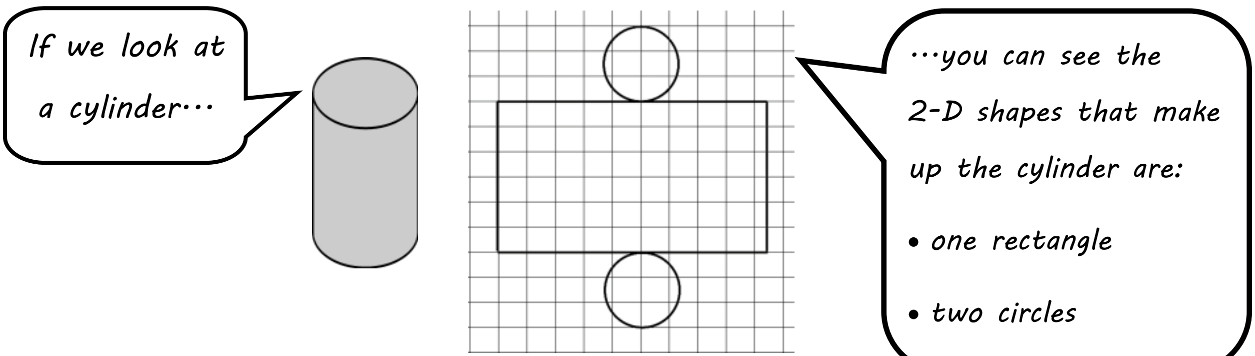
In Year 3, *pupils will have recognised a range of 3-D shapes in different orientations and described them using their properties. They will have built 3-D shapes using a range of modelling materials.*

In Year 5, *pupils will extend their knowledge of 3-D shapes using 2-D representations and then describe and build them using nets.*

This weeks activity involves using clues about the properties of some common 3-D shapes and then searching for and drawing an object in their home that matches the description. They could also draw the 3-D shape in the box on the resource sheet.



You can develop your child's thinking further by asking them what 2-D shape each of its faces are within a 3-D shape.



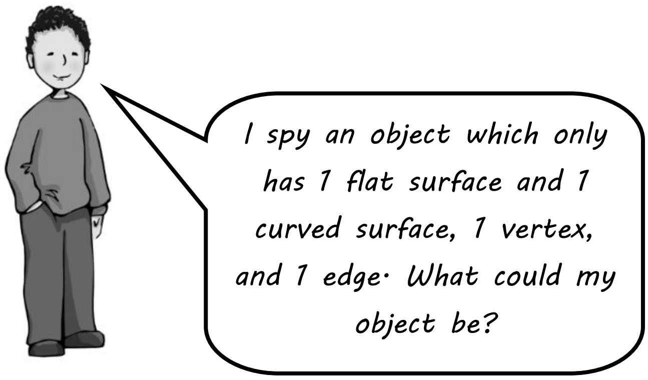
I-Spy

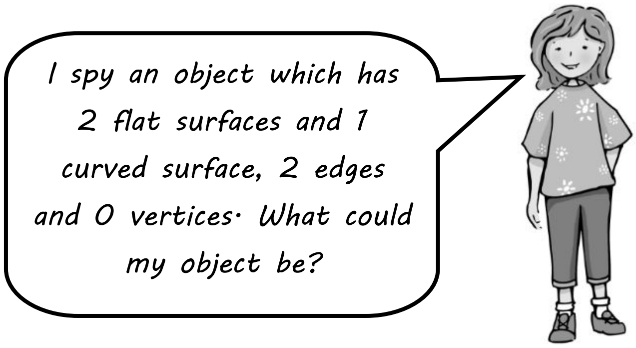
You will need:

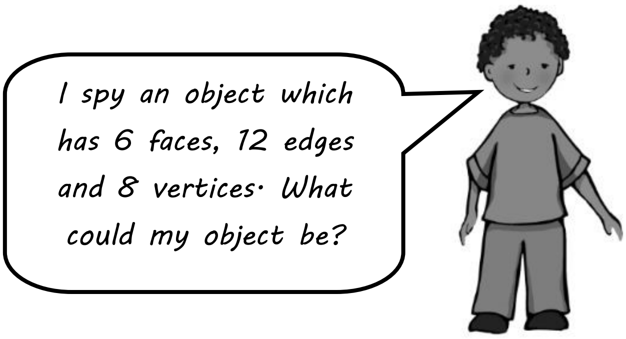
Objects from around your house, a keen pair of eyes, resource sheet (see page 42).

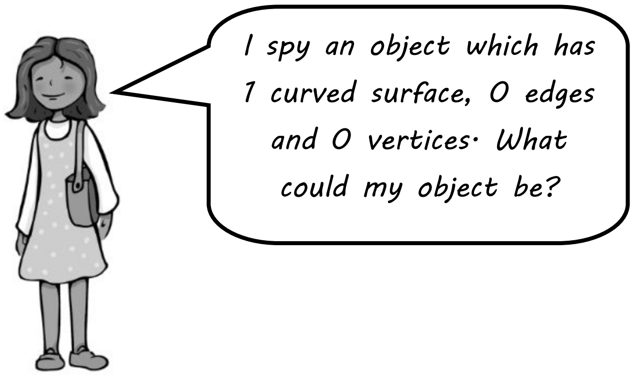
Instructions:

- Read the I spy clues then search your house for an object that matches each clue.
- Have a go at drawing the object or 3-D shape in the box on the resource sheet.









Pupil's comments

Parent's comments

Resource for 'Make me a Match'

Write the matching measurements that you find in the boxes below.

	1	2	3
Example Set	420 cm	4·2 m	4200 mm
First Set			
Second Set			
Third Set			
Fourth Set			
Fifth Set			
Sixth Set			

You may want to use this grid to help you:

Thousands	Hundreds	Tens	Ones		tenths	hundredths	thousandths
1000	100	10	1		0.1	0.01	0.001

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Resource for 'Wood Planks'

These blocks can be cut out and moved around to help you solve the problem.

PINE PLANKS	OAK PLANKS
1.6 m	70 cm
1.6 m	70 cm
1.6 m	70 cm
1.6 m	70 cm
1.6 m	70 cm
1.6 m	70 cm
1.6 m	70 cm
1.6 m	70 cm
1.6 m	70 cm
1.6 m	70 cm

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Resource for 'Cash Flow'

Use this table to help you to find combinations of coins that will total £7.50.

An example has been done for you.

							Total £7·50
Example	Number of Coins	2	3	2	2	0	
	Value	£4·00	£3·00	£0·40	£0·10	£0·00	£7·50
1·	Number of Coins						
	Value						
2·	Number of Coins						
	Value						
3·	Number of Coins						
	Value						
4·	Number of Coins						
	Value						
5·	Number of Coins						
	Value						

Resource for What's in a Name?

Use the space below to write your names.

Player 1

Player 2

Resource for What's in a Name?

Use the space below to write your names.

Player 1

Player 2

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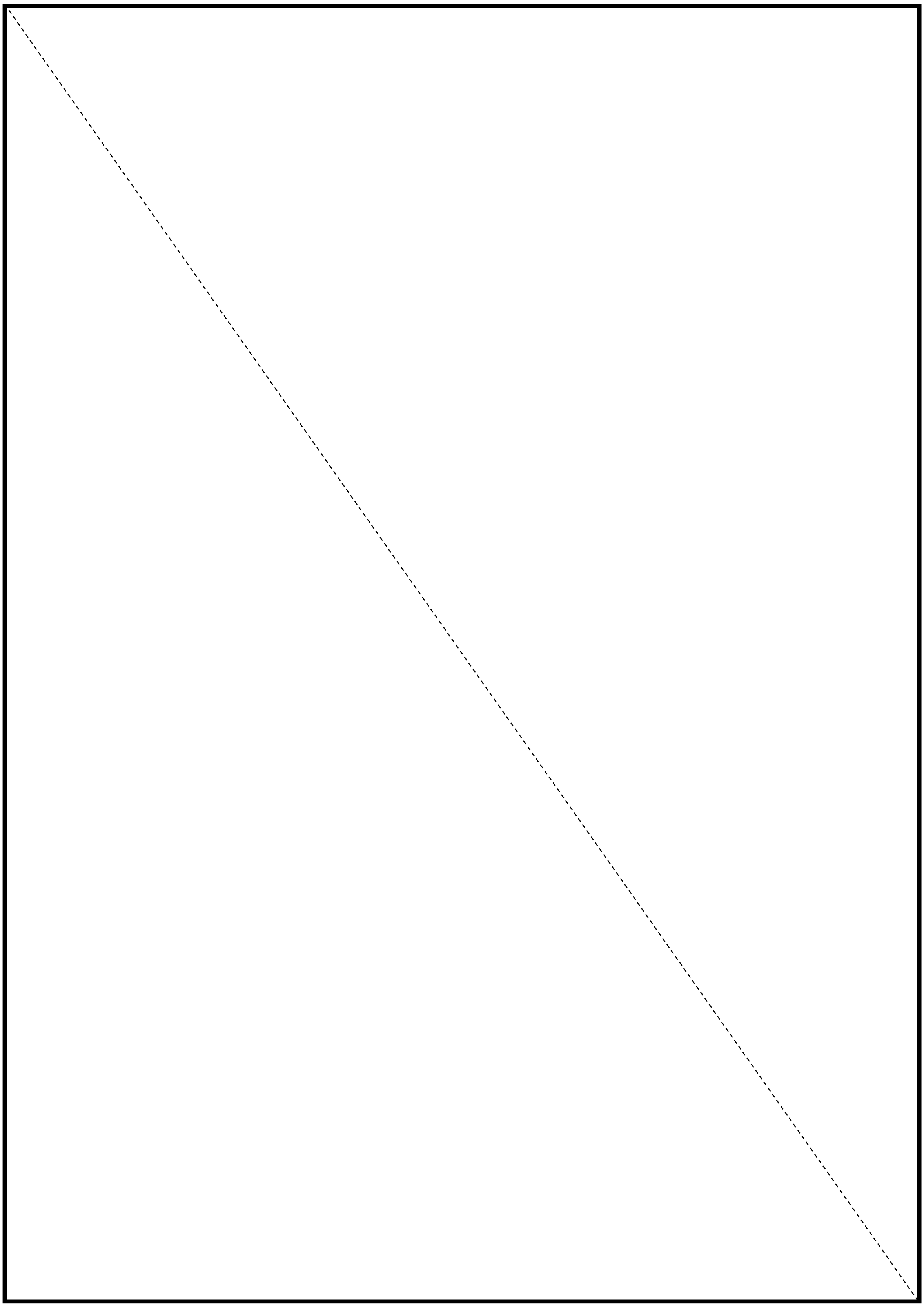
Resource for Quadrilateral

Cut out the rectangle and then cut along the dotted line to create two triangles.



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Resource for Quadrilateral

Use the dotted grids to draw the quadrilaterals.

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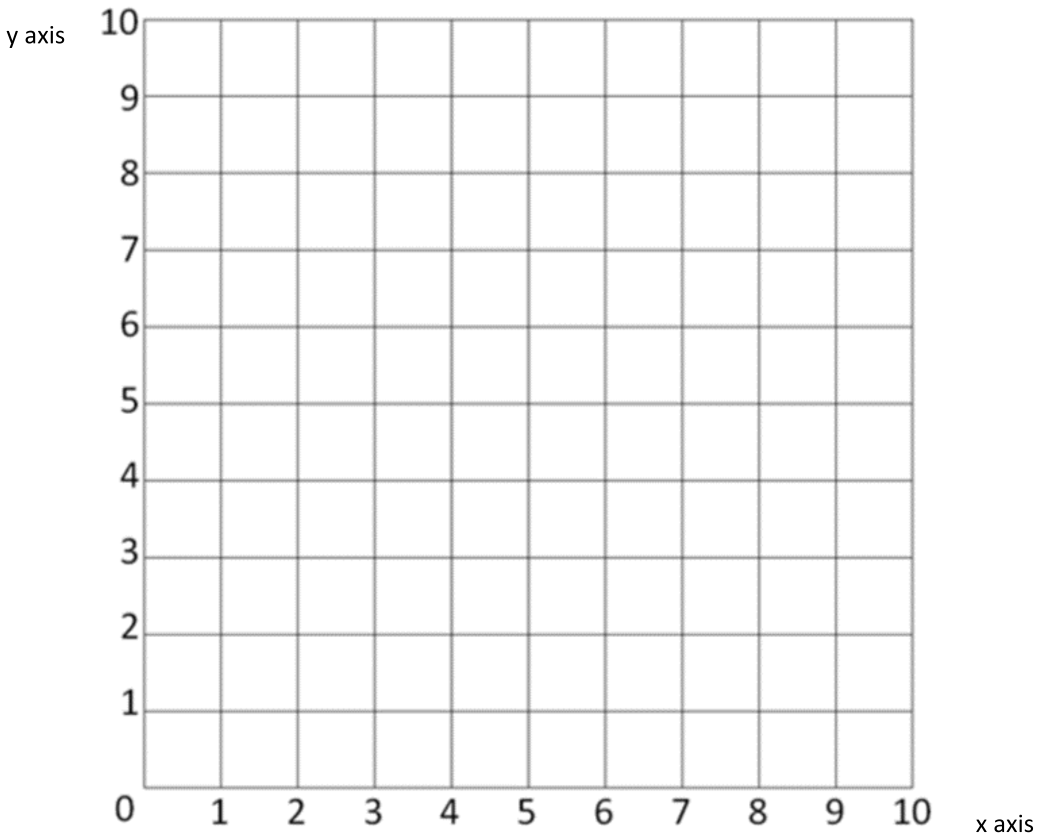
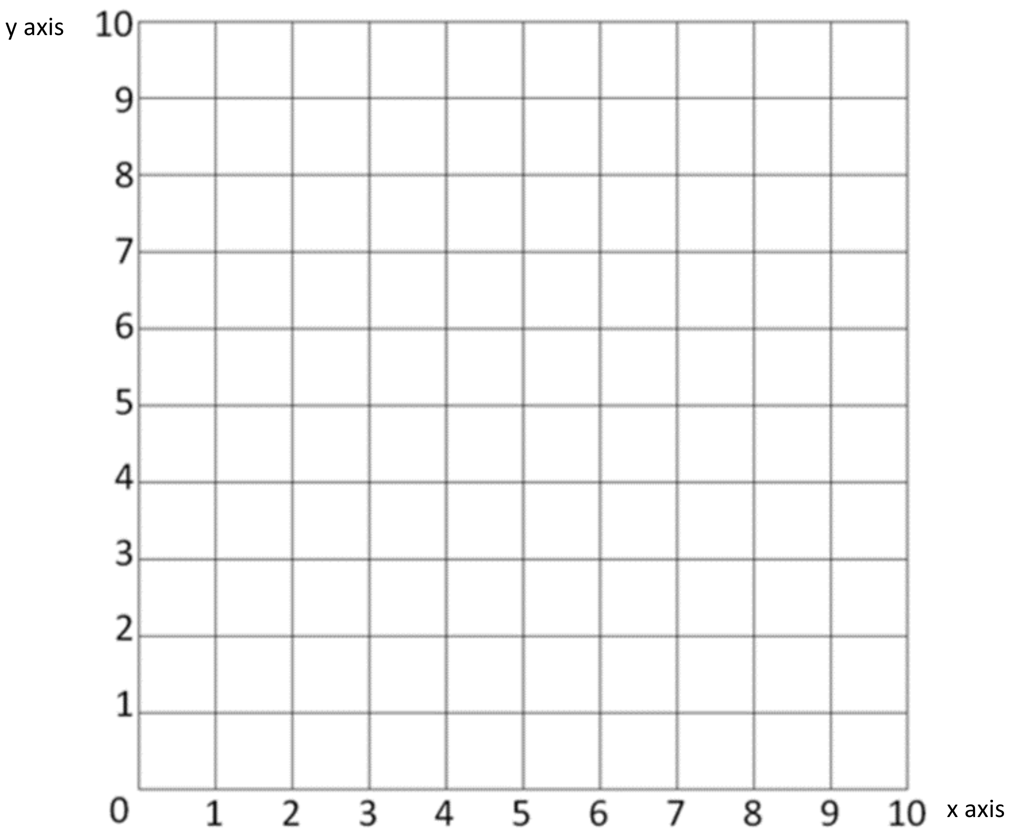
Resource sheet 1A For: What's your coordinate?

Instructions: You may wish to cut this page in half to have your quadrants to play.

Player A:



Player B:



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Resource sheet 1B For: What's your coordinate?

Instructions: You may wish to cut out the following box of coordinates for your activity.

Polygons to choose from:

Rectangle (5,7), (5,9), (9,7), (9,9)

Scalene Triangle (0,8), (4,7), (2,9)

Pentagon(7,1), (7,2), (8,3), (9,1), (9,2)

Isosceles triangle (0,0), (3,0), (3,3)

Equilateral Triangle (5,4), (6,6), (7,4)

Square (1,4), (1,6), 3,4), (3,6)

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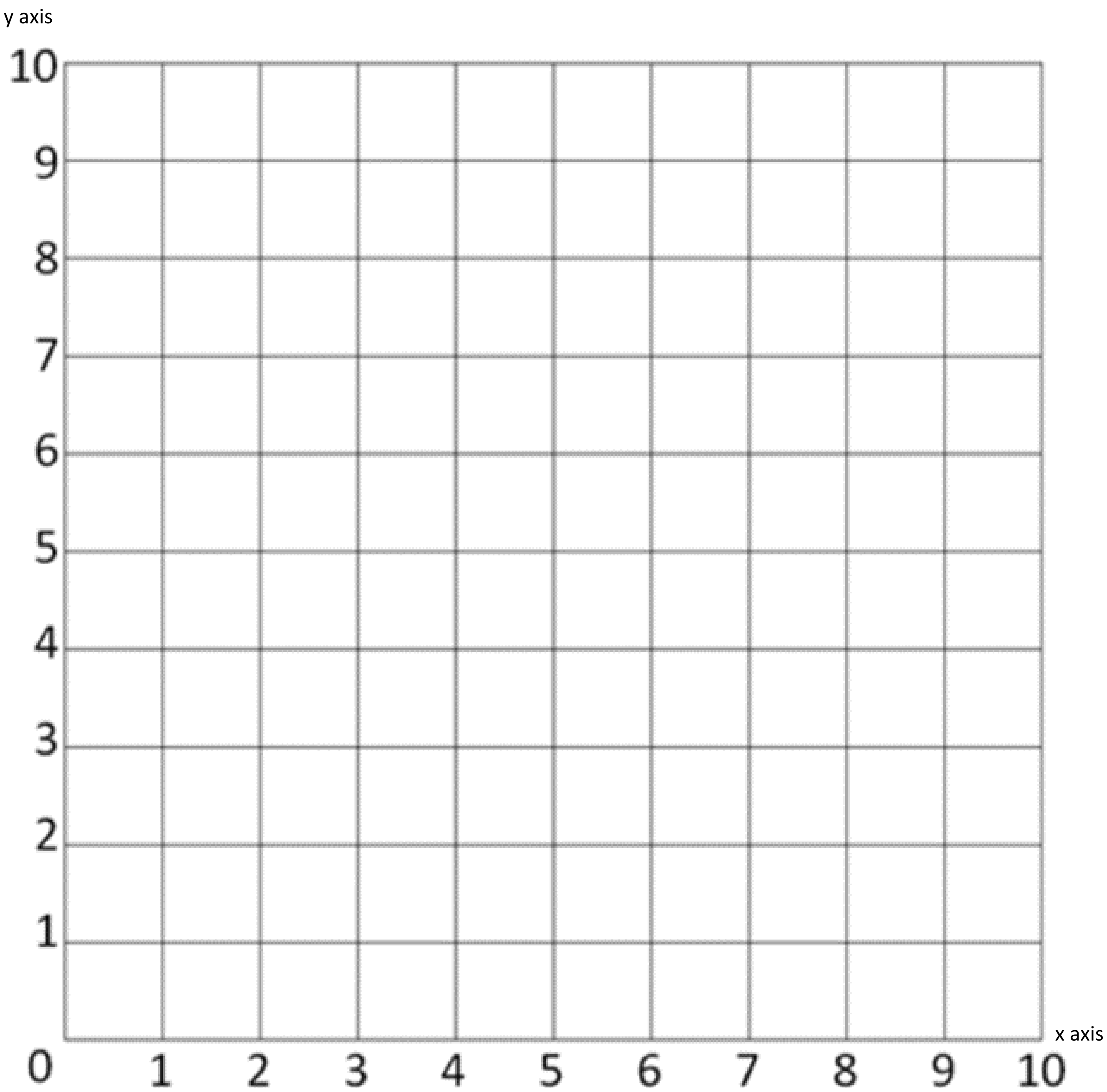
Resource sheet 2 For: What's your coordinate?

Instructions:
Plot the following coordinates onto the quadrant below:
(1, 3), (3,1) and (3,5)

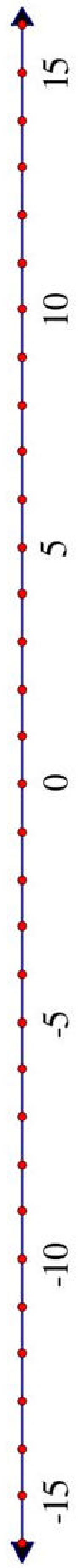
What is the name of the shape? ___________________________________

Now translate this shape 6 units to the right and 2 units up. Write in the new coordinates for your shape below:

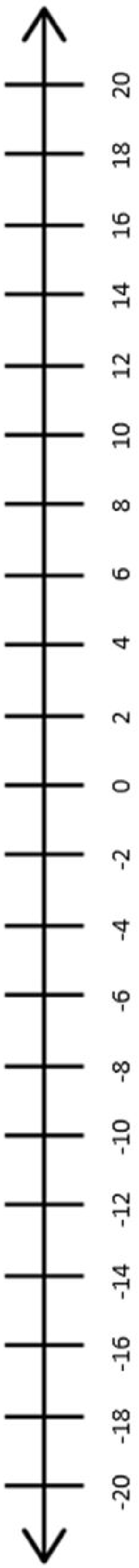
Translated shape: (,) (,) (,)



Resource 1A For: Which way to go?



Resource 1B For: Which way to go?



Resource Sheet for 'I-Spy'

Read the I spy clues and search your house for an object that matches each clue. Have a go at drawing the shape or object in the box.

I spy an object which only has 1 flat surface and 1 curved surface, 1 vertex, and 1 edge. What could my object be?

3-D shape: ______________________

Object: ______________________

I spy an object which has 2 flat surfaces and 1 curved surface, 2 edges and 0 vertices. What could my object be?

3-D shape: ______________________

Object: ______________________

I spy an object which has 1 curved surface, 0 edges and 0 vertices. What could my object be?

3-D shape: ______________________

Object: ______________________

I spy an object which has 6 faces, 12 edges and 8 vertices. What could my object be?

3-D shape: ______________________

Object: ______________________

What 2-D shapes are the faces for your objects?

Notes pages

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