Greater Depth

Activity Book 3

Name: _____

Choose one of the superhero Roman numerals.

- Can you say the number in figures?
- Can you compare two of the numbers?
- Can you order the numbers?

MMII

MCMLXXXIII

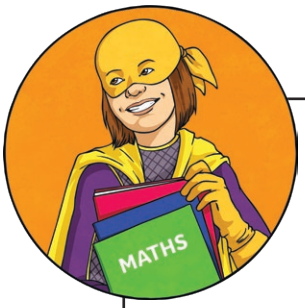
MMX

MCMXCIX

MMXIX

MMXXIV

Extra Challenge: Create your own superhero Roman numeral and challenge a friend to say the number in figures.



Look carefully at these problems involving reading and writing Roman numerals.

- What do we have to do to answer the question?
- What important information do we have to identify?

1. Put these Roman numerals in order from smallest to greatest.

CCLV	CDXI	CCXXXIX	CCXLVI	CCLIX

smallest greatest

2. Use the symbols <, > and = to compare these pairs of Roman numerals.

CCLIV		256
MMXI		2,011
DCCCLII		842

3. At the end of a film, the year is given in Roman numerals.

The End
MMXV

Write the year of the film in figures: ____

Have a go at solving these problems.

1. Put these Roman numerals in order from smallest to greatest.

CCCXLIX	CCCXLI	CDIX	CCCXXXVI	CCCLXXIV

smallest greatest

2. Use the symbols <, > and = to compare these pairs of Roman numerals.

CDLXX		484
DCLVI		646
DCCXI		711

3. At the end of a film, the year is given in Roman numerals.

The End

MCMXXIV

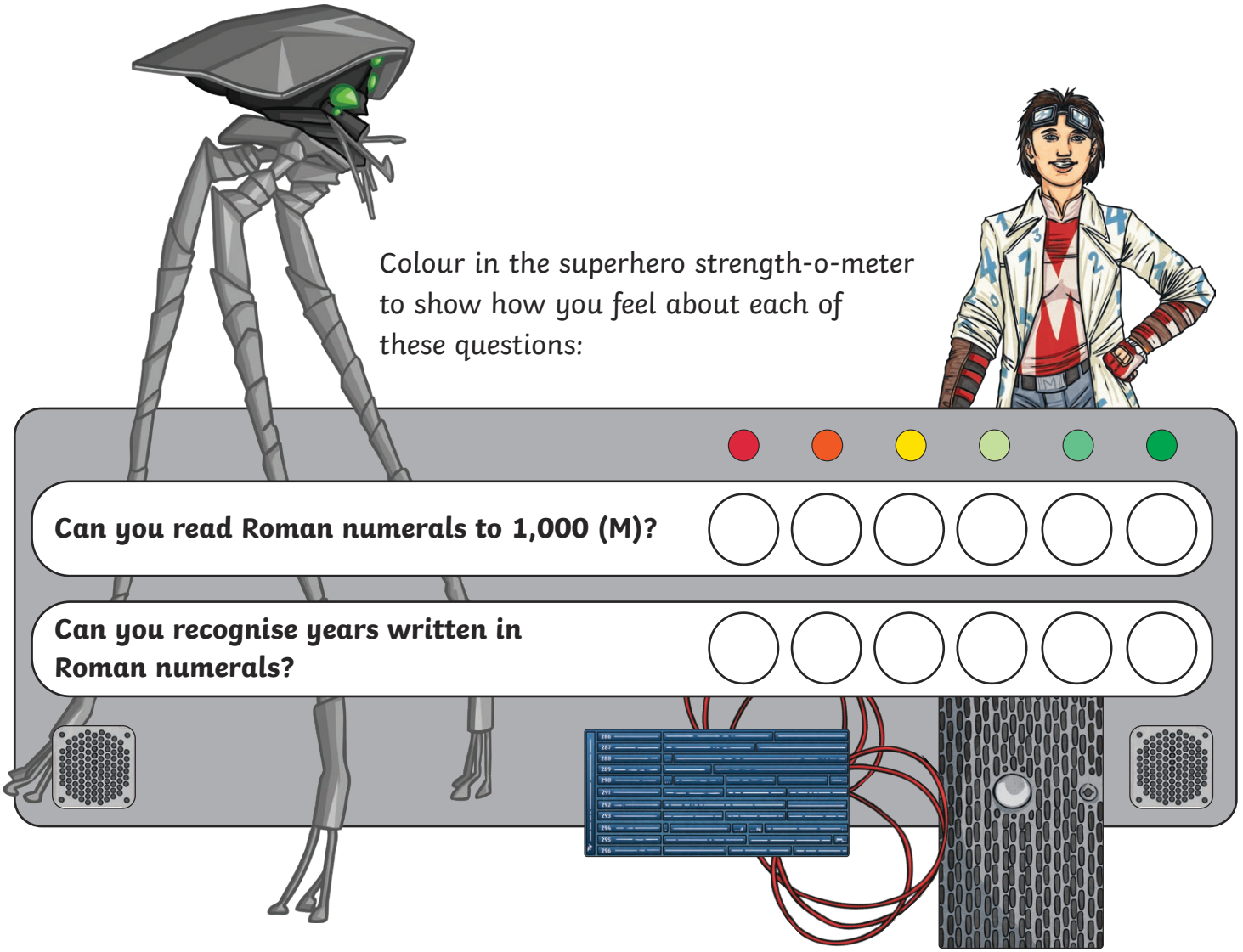
Write the year of the film in figures:

Look at this incorrectly completed SATs question.

- What is the important information to identify?
- How is it best to work out the answer?
- What advice would you give to the child who completed this question?

Write the number 759 in Roman numerals.

CCCCCCCLVIIII



Colour in the superhero strength-o-meter to show how you feel about each of these questions:

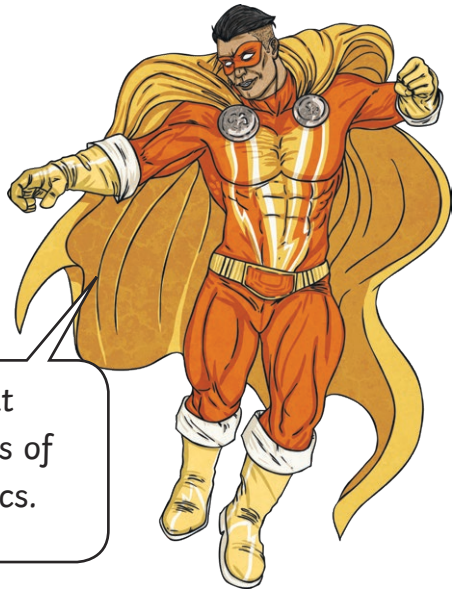
Can you read Roman numerals to 1,000 (M)?

Can you recognise years written in Roman numerals?

Calculate how much money each superhero spends on new gadgets.

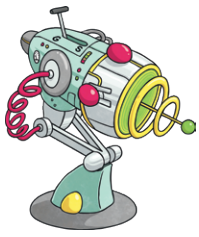
- What method will you use to solve the problem?
- How will you check you have the correct answer?

I bought six night-vision cameras.

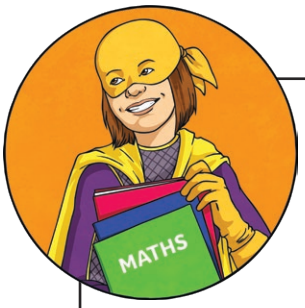


I bought seven pairs of x-ray specs.

I bought nine pairs of super-speed boots.

 shrink laser £58.56	 x-ray specs £15.08	 walkie-talkie £58.56
 spy drone £11.48	 night-vision camera £61.84	 super-speed boots £49.99

Extra Challenge: Write your own superhero word problem for a friend to solve.



Look carefully at these multi-step problems involving multiplication and division.

- What do we have to do to answer the question?
- What important information do we have to identify?

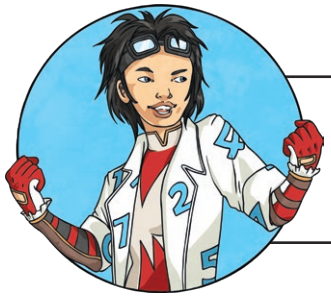
1. Ellie goes to a cafe to buy some lunch. She spends one quarter of her lunch money on a drink costing £1.20 and a sandwich costing £2.45. How much lunch money did she have to begin with?

2. Andy stops a runaway lorry from crashing using his super-strength. The lorry was carrying 83 crates of oranges. Each crate had 8 boxes of 36 oranges. How many oranges was the lorry transporting altogether?

3. A shop prints superhero T-shirts. They use this method to work out the price of printing a design.

   Price = (74p × number of colours) + £2.58

   What is the price of printing a T-shirt with 3 colours?



Have a go at answering these questions.

1. Ellie goes to a cafe to buy some lunch. She spends one fifth of her lunch money on a drink costing £1.15 and a sandwich costing £2.37. How much lunch money did she have to begin with?

2. Andy stops a runaway lorry from crashing using his super-strength. The lorry was carrying 67 crates of oranges. Each crate had 6 boxes of 29 oranges. How many oranges was the lorry transporting altogether?

3. A shop prints superhero T-shirts. They use this method to work out the price of printing a design.

   Price = (87p × number of colours) + £3.83

   What is the price of printing a T-shirt with 3 colours?

Look at this incorrectly completed SATs question.

- What is the important information to identify?
- How is it best to work out the answer?
- What advice would you give to the child who completed this question?

Daisy buys 28 packs of superhero stickers. There are 12 stickers in each pack. Her friend gives her another 60 stickers. Each page of Daisy's sticker book has space for 9 stickers.

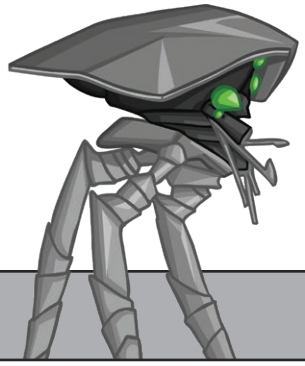
How many complete pages do the stickers fill?

Show your method

$28 \times 12 = 336$

$336 \div 9 = 37 \text{ r } 3$

37 pages



Colour in the superhero strength-o-meter to show how you feel about each of these questions:

Can you use written calculation methods where appropriate?

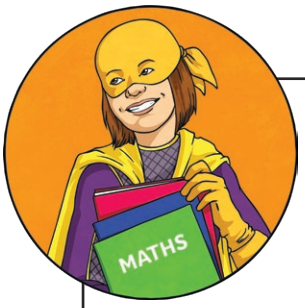
Can you solve multi-step problems in contexts, deciding which operations and methods to use and why?

Look at these superhero fractions, decimals and percentages.

- Can you find the matching pairs?
- For each matching pair, can you give the missing equivalent?

$\frac{3}{8}$	0.09
40%	37.5%
0.84	9%
$\frac{2}{5}$	$\frac{21}{25}$

Extra Challenge:
Can you put the fractions, decimals and percentages in order from smallest to greatest?



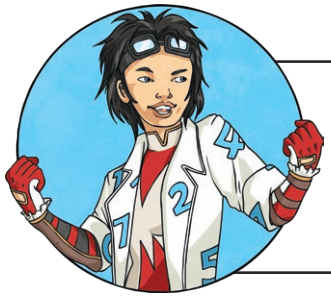
Look carefully at these SATs questions involving fraction, decimal and percentage equivalents.

- What do we have to do to answer the question?
- What important information do we have to identify?

1. In each row, circle the value that is greater.

$1\frac{3}{5}$	1.55
$1\frac{2}{3}$	1.6
$1\frac{19}{100}$	1.9
$1\frac{7}{10}$	1.67

2. A rescue centre has dogs, cats and hamsters. 0.1 of the animals are hamsters and $\frac{3}{5}$ of the animals are cats. What percentage of the animals are dogs?



Have a go at solving these problems.

1. In each row, circle the value that is greater.

$1\frac{4}{5}$	1.81
$1\frac{1}{3}$	1.4
$1\frac{23}{100}$	1.2
$1\frac{2}{10}$	1.18

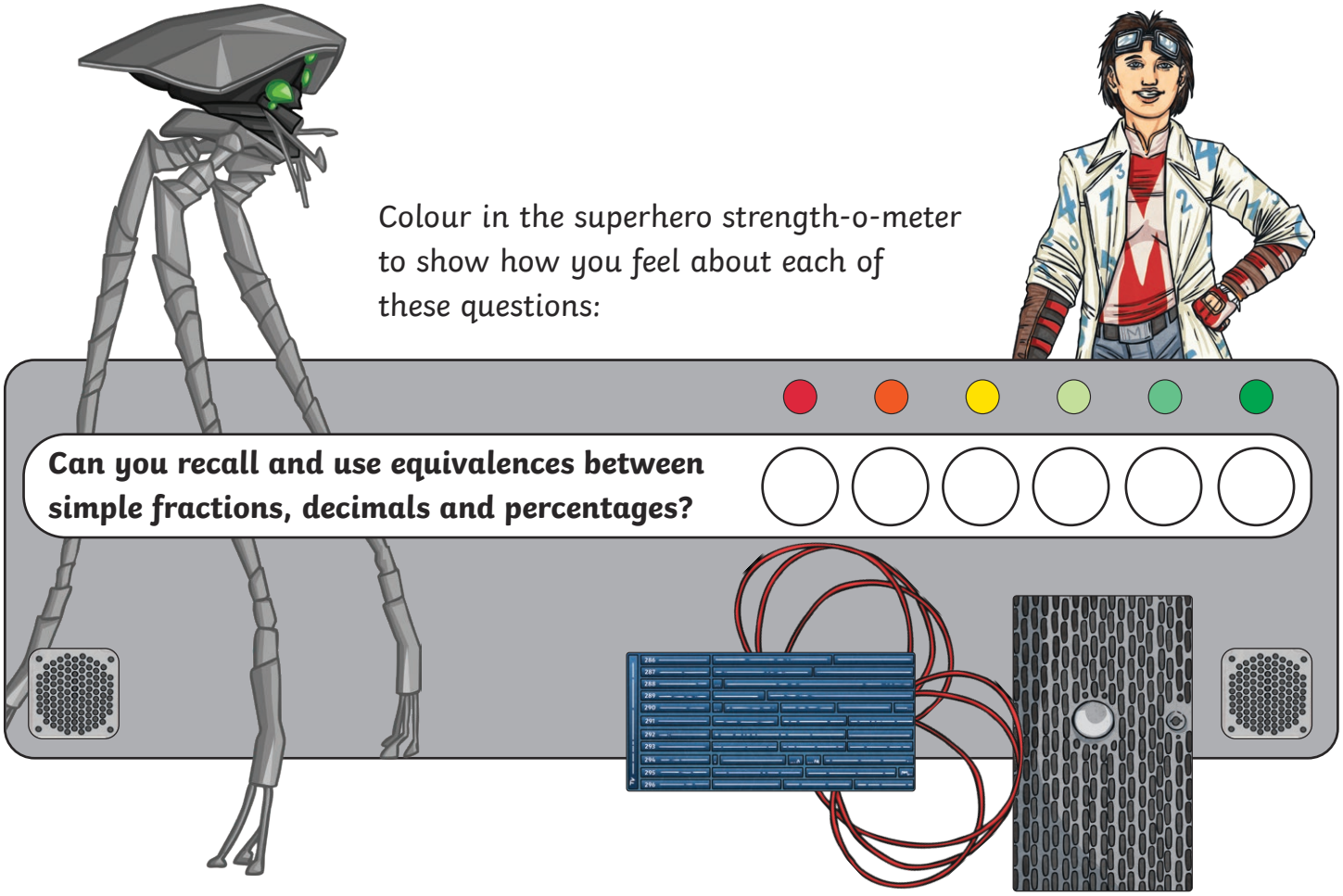
2. A rescue centre has dogs, cats and hamsters. 0.25 of the animals are hamsters and $\frac{1}{8}$ of the animals are cats. What percentage of the animals are dogs?

Look at this incorrectly completed SATs question.

- What is the important information to identify?
- How is it best to work out the answer?
- What advice would you give to the child who completed this question?

1. Match the calculation to the correct fraction or percentage equivalent.

0.21 + 0.48	$1\frac{19}{100}$
0.41 + 0.49	69%
0.56 + 0.63	$\frac{9}{10}$

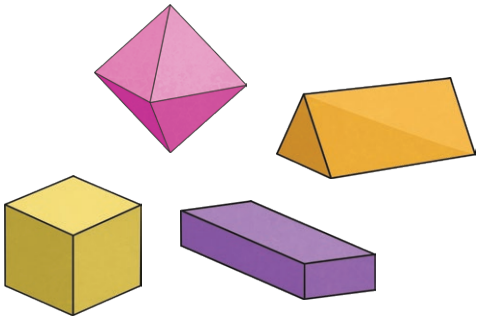


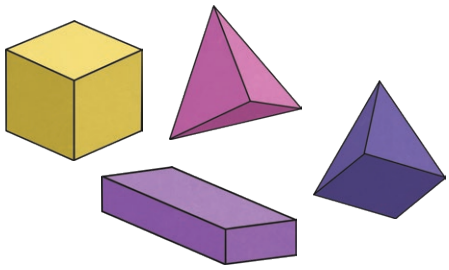
Colour in the superhero strength-o-meter to show how you feel about each of these questions:

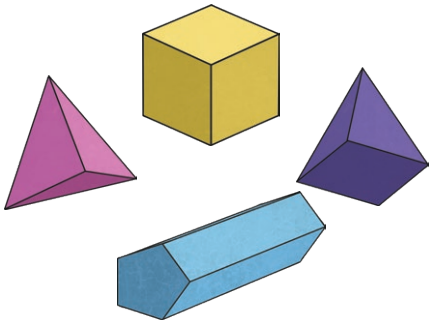
Can you recall and use equivalences between simple fractions, decimals and percentages?

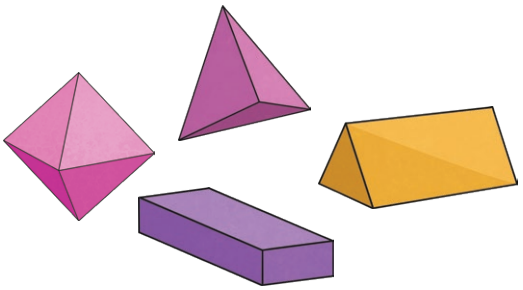
Look carefully at the groups of 3D shapes.

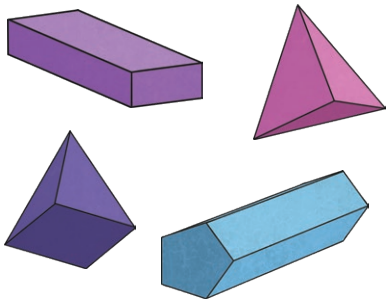
One player must secretly choose one of the groups. Can the other players find out which group they are thinking of by asking yes/no questions describing the properties of the shapes in the group?

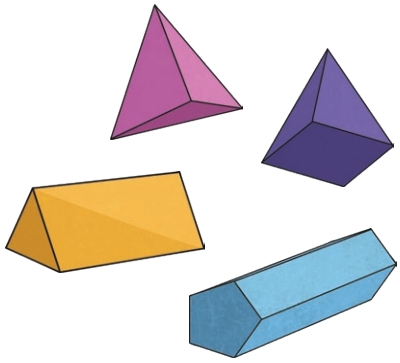




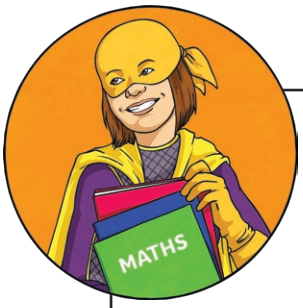








Extra Challenge: Choose a 3D shape. Your partner can ask yes/no questions about its properties. How many questions will it take for them to guess it?

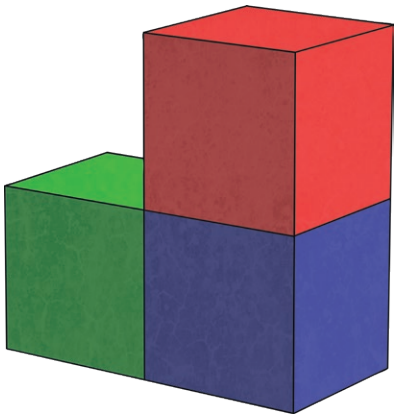


Look carefully at these SATs questions involving describing the properties of 3D shapes and shape nets.

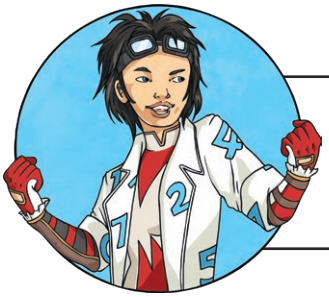
- What do we have to do to answer the question?
- What important information do we have to identify?

1. How many faces does this cube model have?

faces

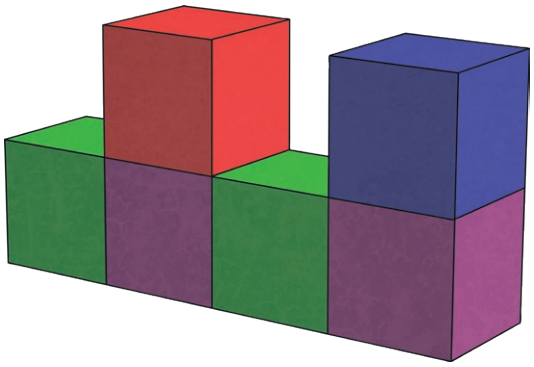


2. Complete the 2D shape net which will correctly fold to make the cube model.



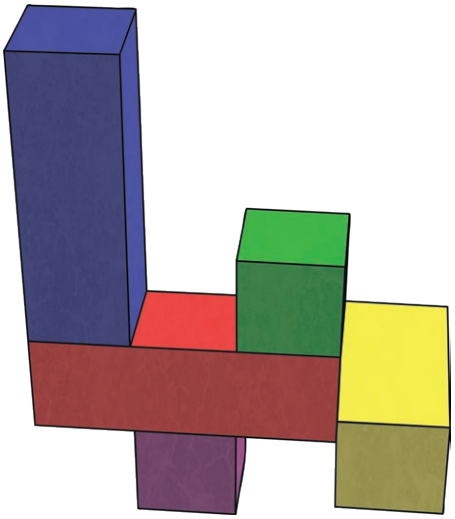
Have a go at solving these problems.

1. How many faces does this cube model have?



faces

2. Look at this cube model. Draw the view of this cube model from above.

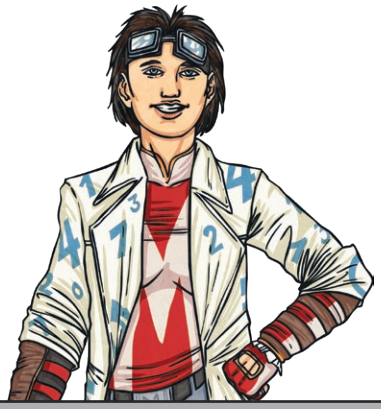


Look at this **incorrectly** completed SATs question.

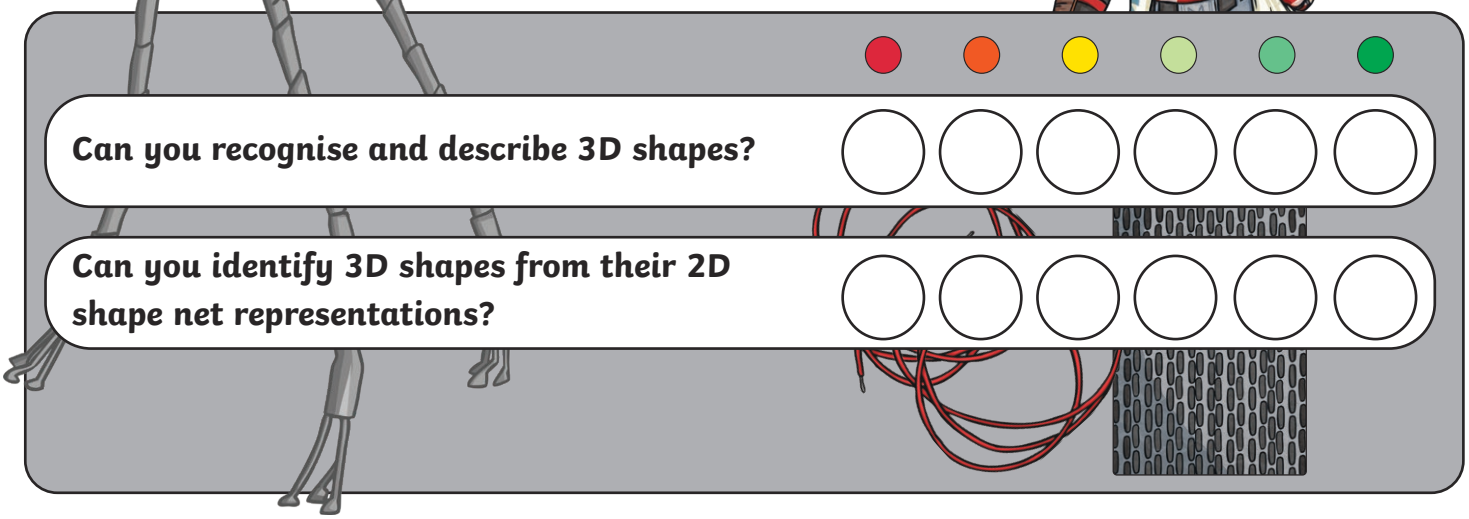
- What is the important information to identify?
- How is it best to work out the answers?
- What advice would you give to the child who completed this question?

How many fewer edges does an octahedron have than an octagonal prism?

An octahedron has 10 edges and an octagonal prism has 24 edges so the octahedron has 14 fewer edges.



Colour in the superhero strength-o-meter to show how you feel about each of these questions:



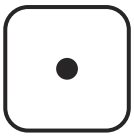
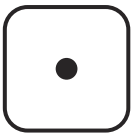
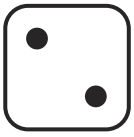
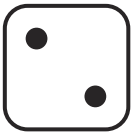
Can you recognise and describe 3D shapes?

Can you identify 3D shapes from their 2D shape net representations?

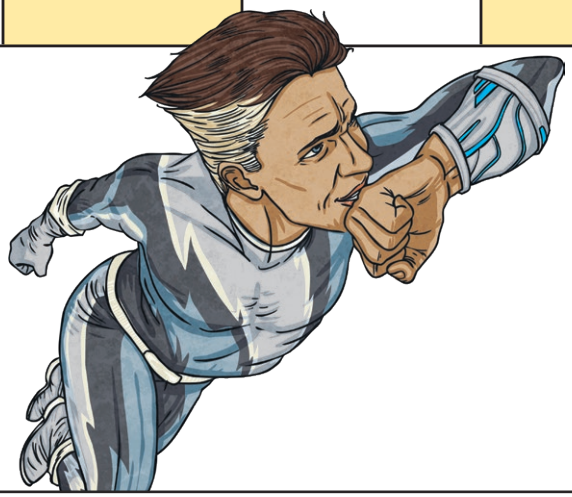
Play this fun, superhero game to practise solving problems involving reading and writing digital 24-hour clocks.
You will need a dice.

Instructions:

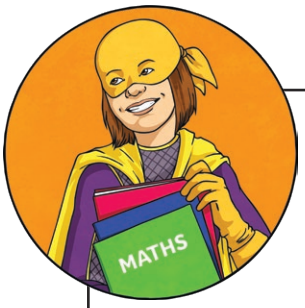
- On your turn, roll the dice twice to select data from both columns of the superhero's timetable. Roll 1 will let you know which lesson your hero will be attending and the time that it starts. Roll 2 will let you know what time the lesson ends.
- Calculate the time duration of the lesson in minutes and find the same answer on the game board.
- Colour in or write your initials on that square to claim it.
- The first player to claim three squares in a row or column wins.

Roll 1	Superhero Lesson	Start Time	Roll 2	Finish Time
	Flying	13:17		15:03
	Running	13: 27		15:13
	Gadgets	13: 37		15:23
	Stealth	13:47		15:33
	Target	13:57		15:43
	Jumping	14:07		15:53

106 minutes	116 minutes	126 minutes	136 minutes	146 minutes	156 minutes
96 minutes	86 minutes	76 minutes	66 minutes	56 minutes	106 minutes
116 minutes	136 minutes	156 minutes	86 minutes	66 minutes	126 minutes
106 minutes	76 minutes	146 minutes	96 minutes	106 minutes	116 minutes
56 minutes	106 minutes	146 minutes	156 minutes	86 minutes	66 minutes



Extra Challenge: Choose your own start time and finish time in the 24-hour clock for superhero lessons and challenge a friend to calculate the time duration in minutes.



Look carefully at these SATs questions involving reading and interpreting information in a timetable.

- What do we have to do to answer the question?
- What important information do we have to identify?

1. Ugo is trying to capture a jewel thief.

   He knows that the jewel thief caught the train to Sea View Cove at 12:25.

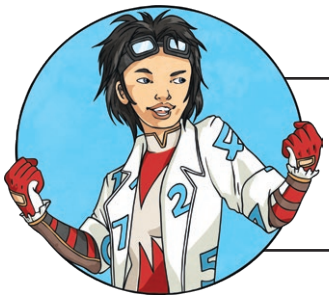
   Ugo caught the jewel thief eighty-seven minutes after the thief's train arrived at Sea Cove. What time did Ugo catch the thief?

Leaves Sunny Town	Arrives Sea View Cove
12:01	15:22
12:25	15:56
13:31	16:53
14:01	17:26
14:31	17:53

2. Here is a timetable to show when the superheroes have different skill lessons.

Time	Mon	Tue	Wed	Thu	Fri
13:32 – 14:19	Flying	Running	Gadget	Stealth	Target
14:33 – 15:07	Running	Gadget	Stealth	Target	Flying
15:18 – 15:51	Gadget	Stealth	Target	Flying	Running

   What is the **total** time in hours and minutes for **running**?



Have a go at answering these questions.

1. Ugo is trying to capture a jewel thief.

   He knows that the jewel thief caught the train to Sea View Cove at 12:33.

   Ugo caught the jewel thief seventy-eight minutes after the thief's train arrived at Sea View Cove. What time did Ugo catch the thief?

Leaves Sunny Town	Arrives Sea View Cove
12:08	15:17
12:33	15:48
13:47	16:37
14:09	17:20
14:28	17:55

2. Here is a timetable to show when the superheroes have different skill lessons.

Time	Mon	Tue	Wed	Thu	Fri
13:29 – 14:35	Flying	Running	Gadget	Stealth	Target
14:47 – 15:09	Running	Gadget	Stealth	Target	Flying
15:13 – 15:58	Gadget	Stealth	Target	Flying	Running

   What is the **total** time in hours and minutes for **gadget** practice?

Look at this **incorrectly** completed SATs question.

- What is the important information to identify?
- How is it best to work out the answers?
- What advice would you give to the child who completed this question?

1. Here is part of a timetable.

River Bridge	16:09	16:29
Kings Dale	16:17	16:37
Ford Haven	16:31	16:51
Queens Place	16:40	17:00
Sea View	16:52	16:12

How many minutes does it take the 16:17 bus from Kings Dale to reach Sea View in seconds?

35
x 60
300
180
480

480 seconds

Colour in the superhero strength-o-meter to show how you feel about each of these questions:

Can you complete, read and interpret information in timetables?

Can you solve problems involving reading and writing digital 12- and 24-hour clocks?