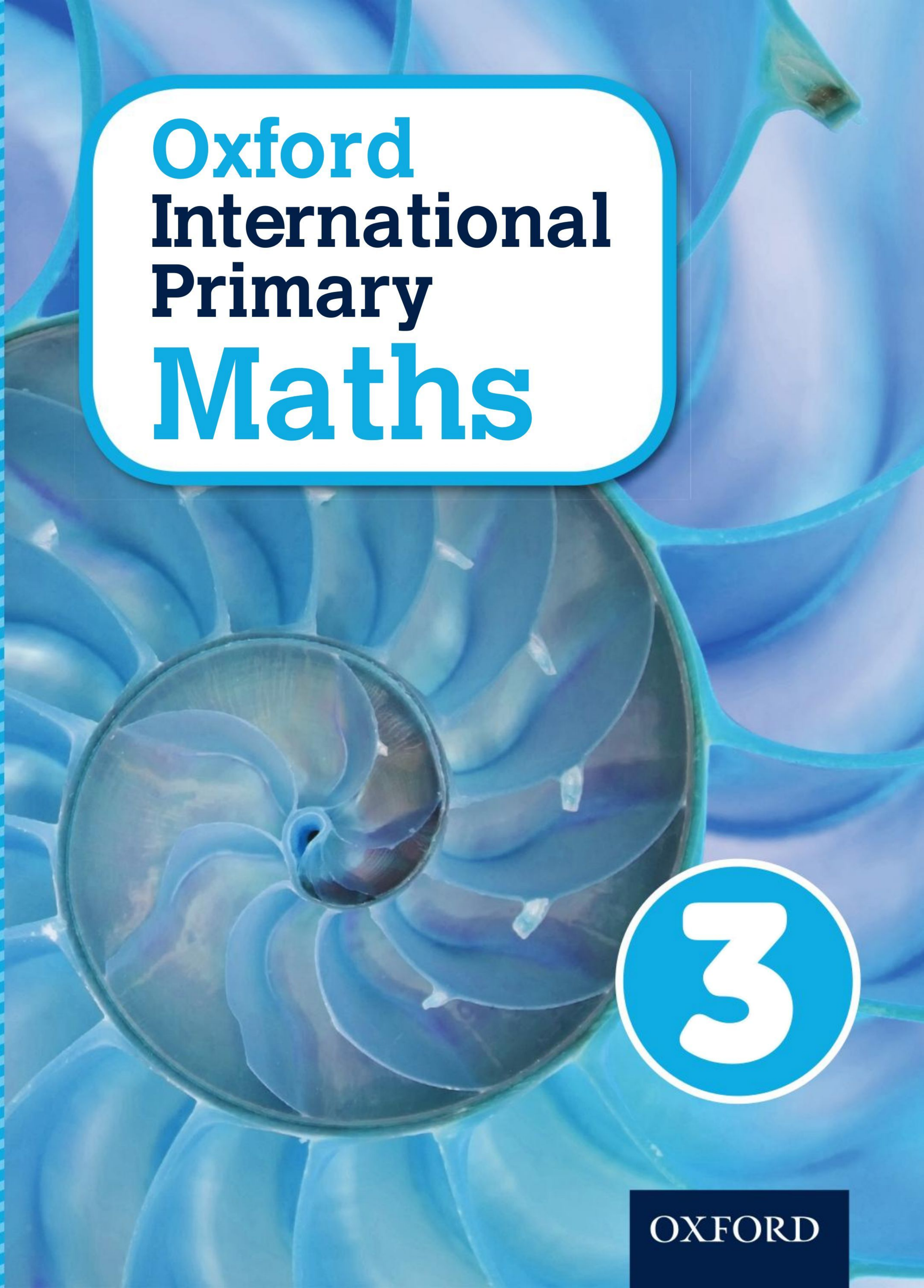
Oxford International Primary Maths



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1 Number and Place Value

Engage

How long would **1000** beans be if we put them end to end?

I think I could fit **1000** beans on my desk.

I think **1000** beans on top of each other would be as tall as me.

No – they would be much bigger than that.

I think they would be smaller than that.

I think **1000** beans would fit around the classroom.

1A Place value

Discover

Place Value Game

Shuffle a set of 0–9 **digit** cards.
Pick a card and write the digit in one of the columns.
Replace the card and pick again.
Write this digit on the same row as the first, but in one of the blank boxes.
Repeat until you have completed the row.

	Thousands	Hundreds	Tens	Units
Largest Number				
Smallest Number				
Number closest to 1000				
Number closest to 5000				
Number closest to 9000				

When you have finished the game, complete the table below.

My largest number was	
The largest possible number with my digits was	
My smallest number was	
The smallest possible number with my digits was	
My number closest to 1000 was	
The closest number to 1000 possible with my digits was	
My number closest to 5000 was	
The closest number to 5000 possible with my digits was	
My number closest to 9000 was	
The closest number to 9000 possible with my digits was	

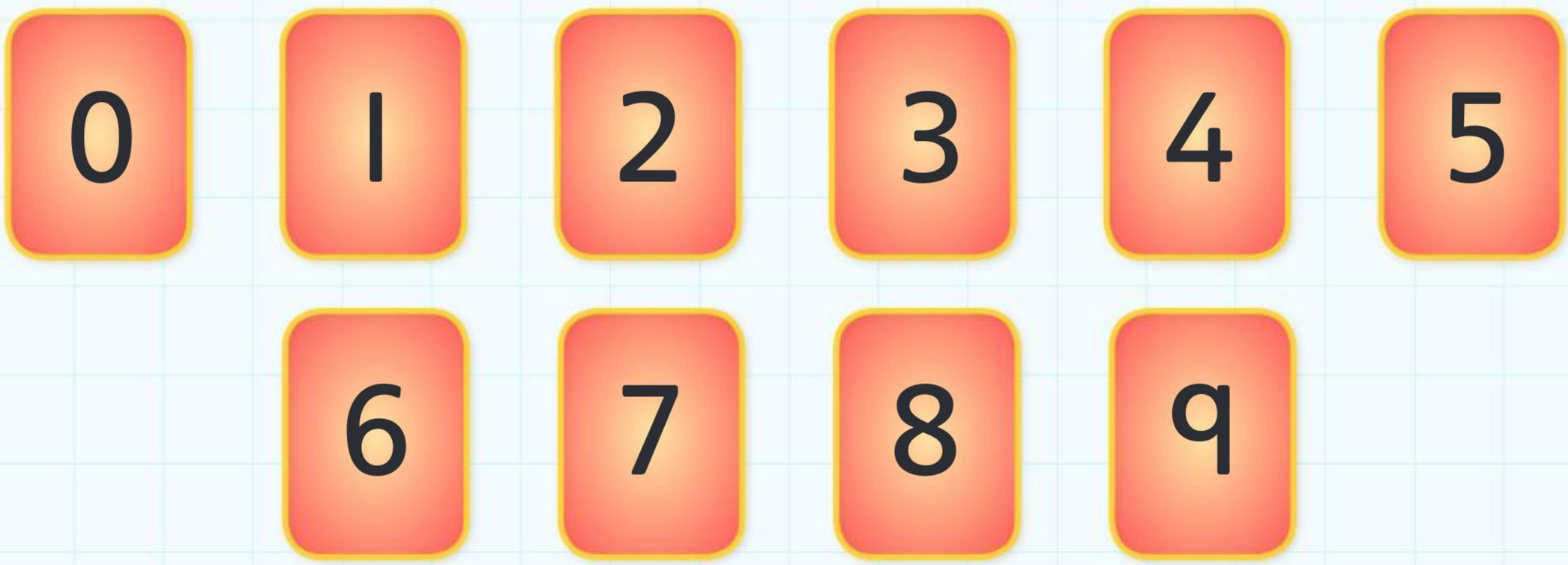
1A Place value

Explore

1. Use the 100 square below.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Pick 2 cards from a set of 0–9 digit cards.



Use these to make a **two-digit number**. Colour this in red on the 100 square.

In blue, colour the number that is **one more** than the **first**.

In yellow, colour the number that is **ten more** than the first.

In orange, shade the number that is **one less** than the first.

In green, colour the number that is **ten less** than the first.

Repeat for 10 different numbers.

Look at the shading on this grid.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Write down what you notice about the patterns on the 100 square.

If you add 1 to a number, you move_____ on the **hundred** square.

If you add 10 to a number, you move_____ on the hundred square.

If you subtract 1 from a number, you move_____ on the hundred square.

If you subtract 10 from a number, you move_____ on the hundred square.

2. Use your set of 0–9 digit cards. Pick 3 cards to make a **three-digit number**. Write this in the left hand column.

- Add 100 to this number and write it in the next column.
- Add 10 to your new number and write this in the next column.
- Add 1 to this number and write it in the final column.

My number	add 100	add 10	add 1
527	627	637	638

3. Use a calculator for this activity. In the first 8 rows write down any two-digit number and then multiply it by 10. In the second 8 rows write down any three-digit number, and then multiply it by 10. Examples have been done for you.

	Thousands	Hundreds	Tens	Units
Example: My number 47			4	7
47 × 10 =		4	7	0
My number				
× 10 =				

My number				
× 10 =				
My number				
× 10 =				
My number				
× 10 =				
Example: My number is 328		3	2	8
328 × 10 =	3	2	8	0
My number				
× 10 =				
My number				
× 10 =				
My number				
× 10 =				
My number				
× 10 =				

1B Estimation and rounding

Discover

My number is **48**

It has **4** in the tens column. This is worth **40**

It is **50** when you round it to the nearest ten

It is even

It is in the **4** times table

Make any two-digit number. Write it below.
Write down 5 facts about this number, as in the example above.

Pick another two-digit number. Write it below.
Write down 5 facts about this number.

Pick any three-digit number. Write it below.
Write down 5 facts about this number.

Pick a different three-digit number. Write it below.
Write down 5 facts about this number.

1B Estimation and rounding

Explore

Use a set of 0–9 digit cards. Pick 3 different cards. Write the 3 digits below.

Use these digits to make 6 three-digit numbers. Place the numbers on the number line using an arrow.

Now write your numbers in **order** in the table below

My number	Rounded to nearest 10	Rounded to nearest 100
359	360	400
741	740	700

1C Number sequences

Discover

Find 14 on the 100 square and colour it in. Count on in 4s.
Colour all these numbers in.

Do you finish on 100?

Think! You want to finish on 100. What numbers can you start on?

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Find 92 on the 100 square and colour it in. Count back in 5s.
Colour all these numbers in.

Do you finish on zero?

You want to finish on zero. List all the numbers you could start on.

Choose a **single-digit number** and count on in 3s. On the 100 square below, colour each square in your pattern. Describe the pattern below the grid.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Choose any number that has 9 in the tens column. Count backwards in 4s. On the 100 square below, colour each square in your pattern. Describe the pattern below the grid.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1C Number sequences

Explore

Choose any number between 1 and 6 and shade the number on the grid below.

Count on in 2s from the number. Shade all these in red.

Count on in 3s from the number. Shade all these numbers in blue.

Count on in 4s from the number. Shade all these numbers in yellow.

Count on in 5s from the number. Shade all these numbers in green.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Use the 100 square below.

Choose any number between 1 and 6.

Use your answer to make a two-digit number with 9 in the tens column (so if you choose a 4, your starting number is 94).

Count back in 2s from the number. Shade all these numbers in red.

Count back in 3s from the number. Shade all these numbers in blue.

Count back in 4s from the number. Shade all these numbers in yellow.

Count back in 5s from the number. Shade all these numbers in green.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Connect

How many sweets in a jar?

How many sweets do you think there are in the jar?

Explain how you estimated your answer

I think there are about _____ *sweets because* _____

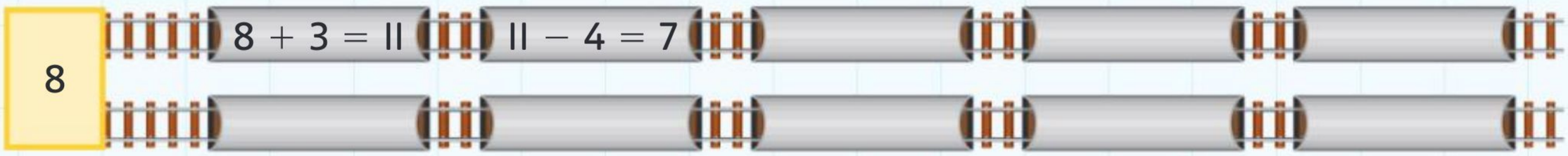
_____.

How many sweets do you think there are in 10 jars?

1 Number and place value

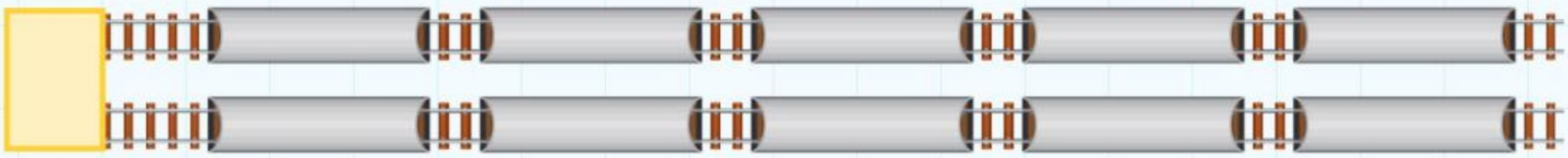
Review

1. Complete this number track by counting on or counting back in 2s, 3s, 4s, or 5s. Try to make the final answer the same as the starting number.



2. Complete this number track by counting on or counting back in 1s, 10s, or 100s. Try to make the final answer the same as the starting number.

3. Make up a number track of your own.



4. Use a set of 0–9 digit cards. Pick 3 different cards and make a three-digit number. Write the number here:

Complete the sentences below.

My number has _____ in the **units** column

My number has _____ in the **tens** column. This is worth _____

My number has _____ in the **hundreds** column. This is worth _____

My number is **1 more** than _____

My number is **1 less** than _____

My number is **10 more** than _____

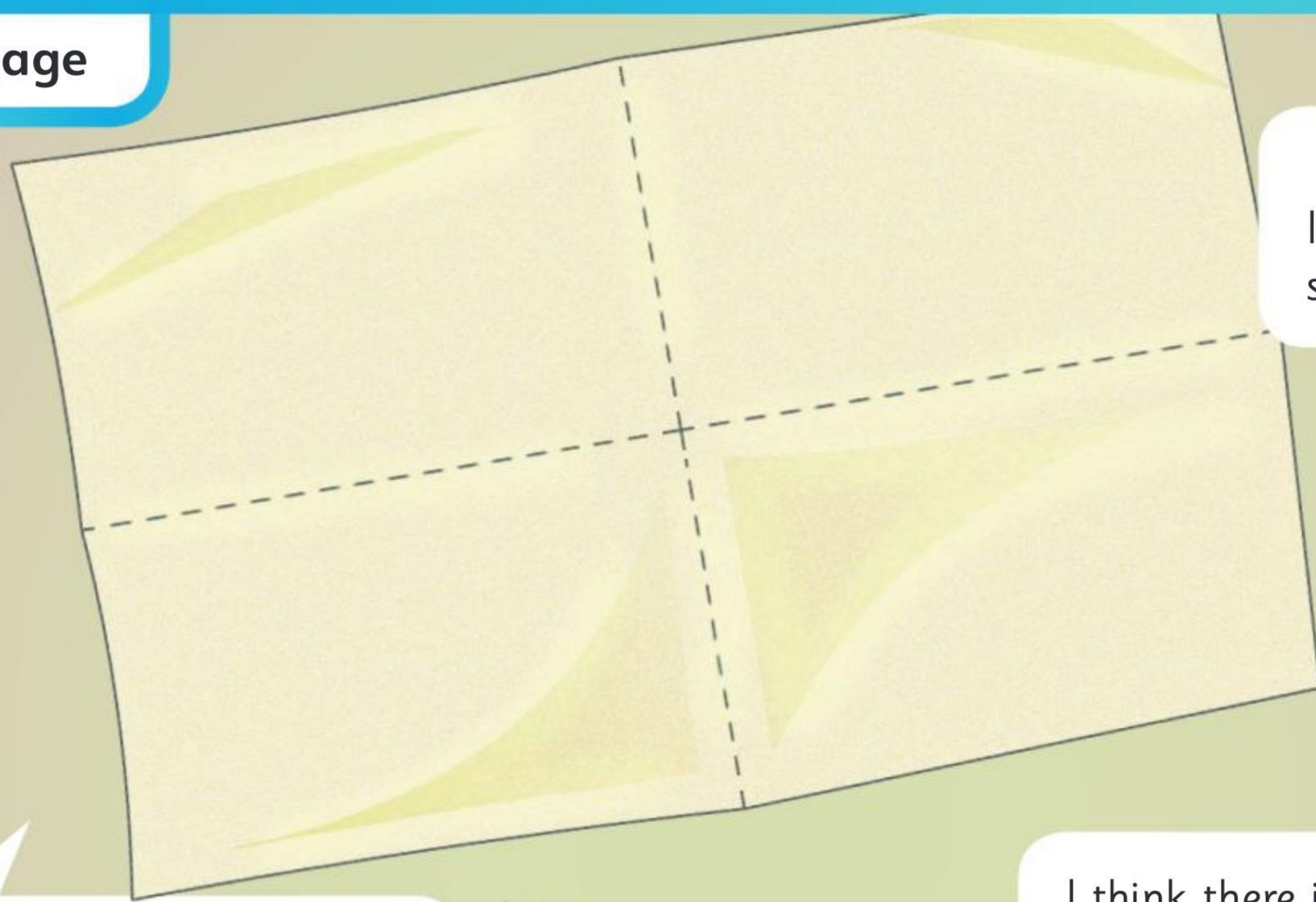
My number is **10 less** than _____

My number is **100 more** than _____

My number is **100 less** than _____

2 Fractions and Decimals

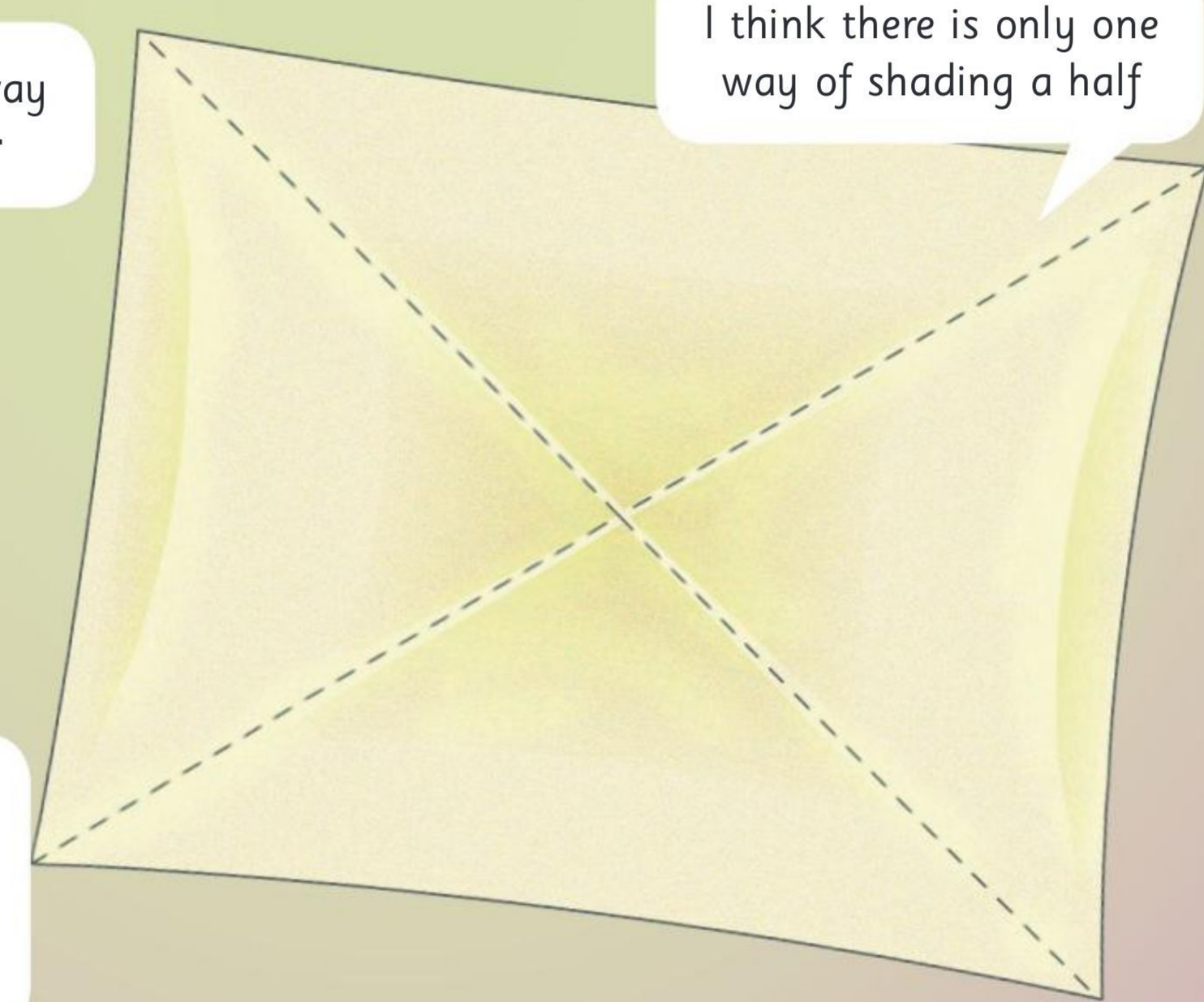
Engage



I can think of lots of ways of shading a **half**

No – there's only one way of shading a **quarter**

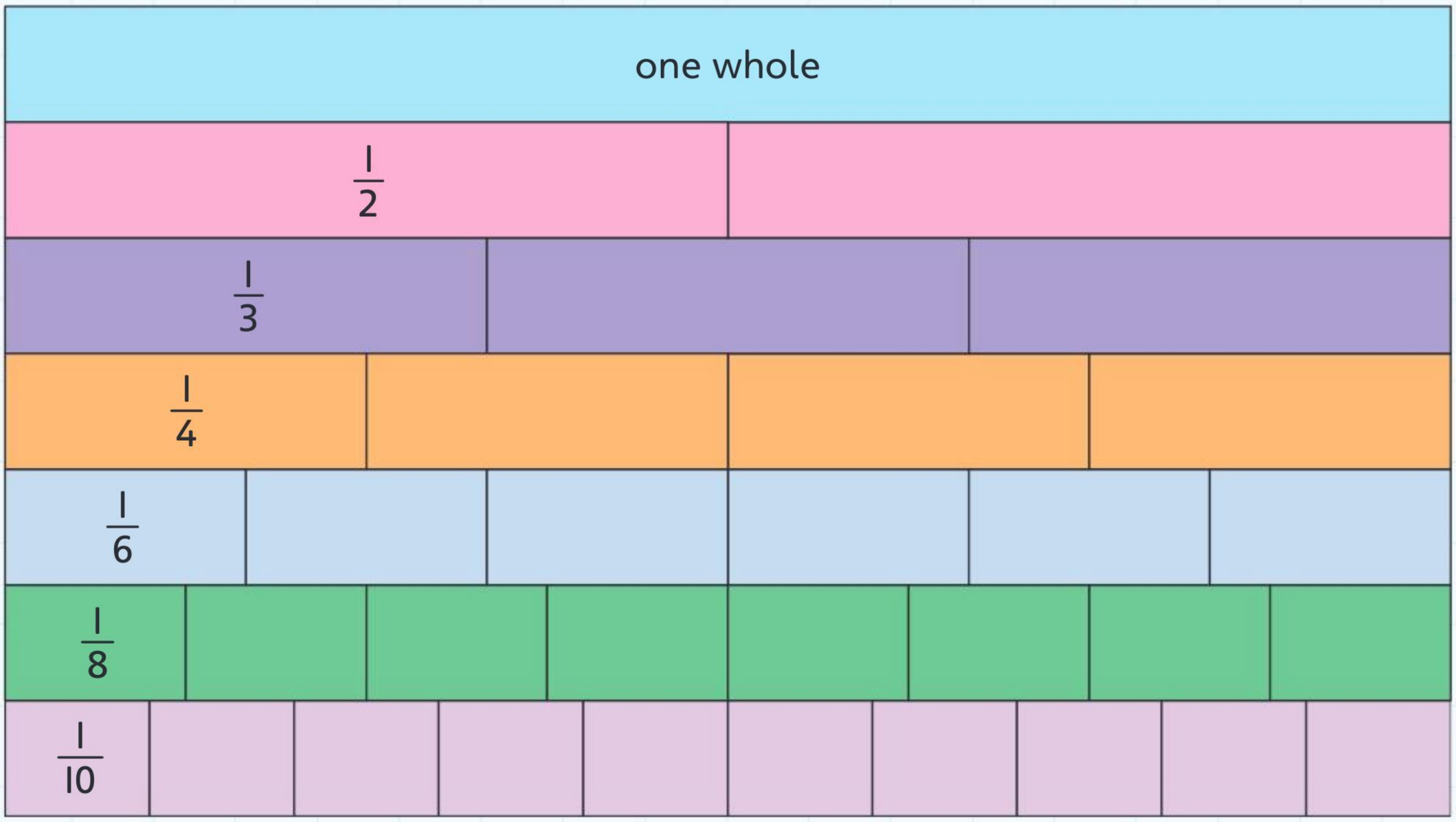
I think there is only one way of shading a half



There should be two ways of shading a half and four ways of shading a quarter

2A Halves and equivalent fractions

Discover



1. Write down all the **fractions** you can see which are **equivalent** to $\frac{1}{2}$.

$\frac{1}{2}$ = _____ = _____ = _____ = _____

2. Write down anything you notice about these fractions.

3. a) Take a piece of square paper and fold it in **half**.
Draw it here and label each half.

b) Fold it in half again. Draw it here and label the quarters.

a)

b)

4. Fold it in half again. Draw it here and label the eighths.

2A Halves and equivalent fractions

Explore

Complete this table by halving.

Two numbers have been done for you.

Number	Even or Odd	Half the number
10		
12	Even	6
15		
19	Odd	$9\frac{1}{2}$
25		
30		
33		
36		
39		
40		

Complete these sentences with 'odd' or 'even':

If I **halve** an even number, the answer is _____

If I halve an odd number, the answer is _____

Complete this sentence:

A method for halving an odd number is _____

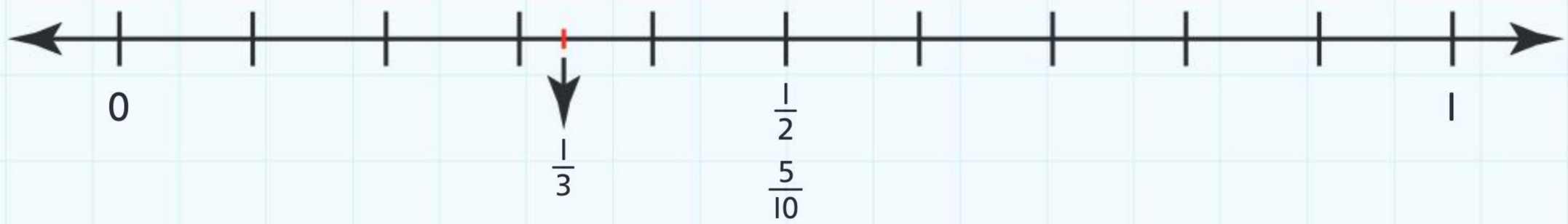
_____

2B Finding fractions of shapes and numbers

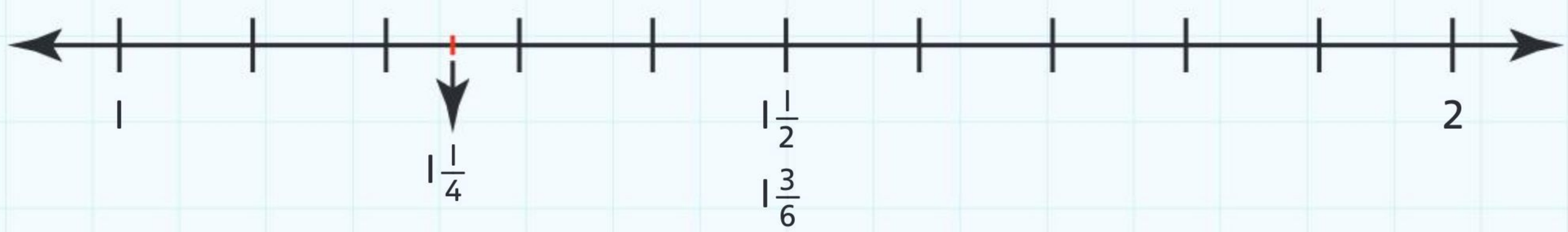
Discover

1. Write down 5 fractions between 0 and 1.
They should all have a different denominator.

Place them on this number line:



2. Write down 5 fractions between 1 and 2. Place them on this number line:

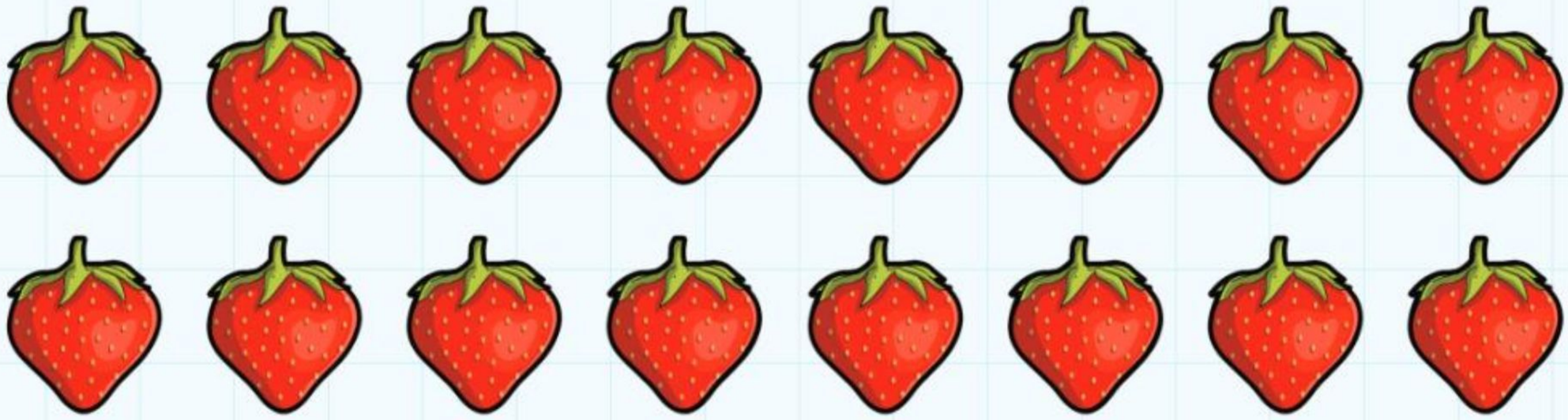


3. Write down 5 fractions between 0 and 2. Place them on this number line:

2B Finding fractions of shapes and numbers

Explore

1. I have 16 strawberries.

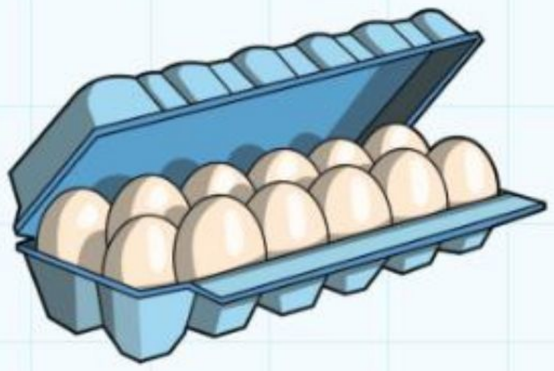


$\frac{1}{2}$ of 16 strawberries is _____

$\frac{1}{4}$ of 16 strawberries is _____

$\frac{1}{8}$ of 16 strawberries is _____

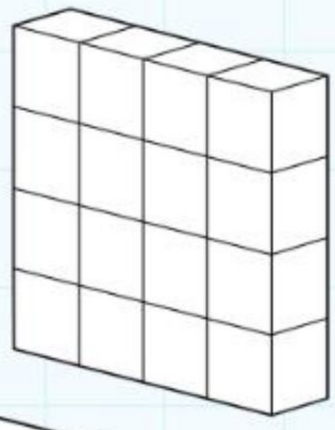
2. I have 12 eggs. I use $\frac{1}{4}$ of the eggs.



How many eggs have I used? _____

How many eggs are left? _____

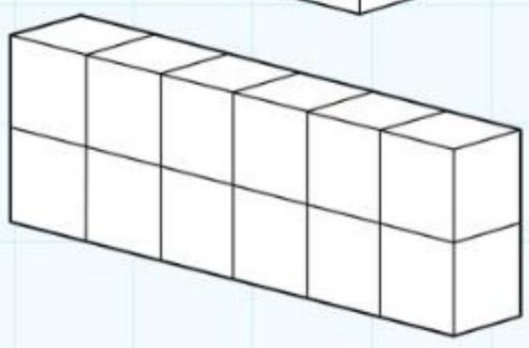
3. There are 16 tiles on the wall. $\frac{1}{8}$ are blue, $\frac{1}{2}$ are green, $\frac{1}{4}$ are yellow, and the rest are red.



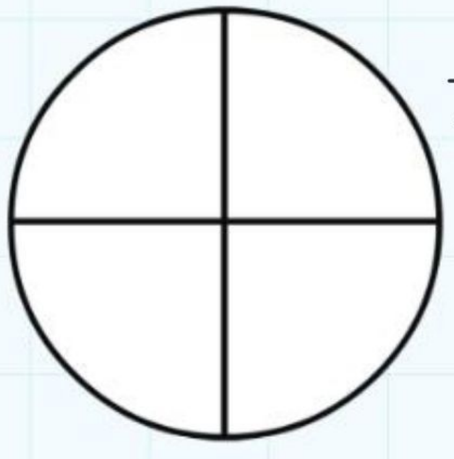
Shade the wall to show the tiles of each colour.

What fraction of the tiles are red? _____

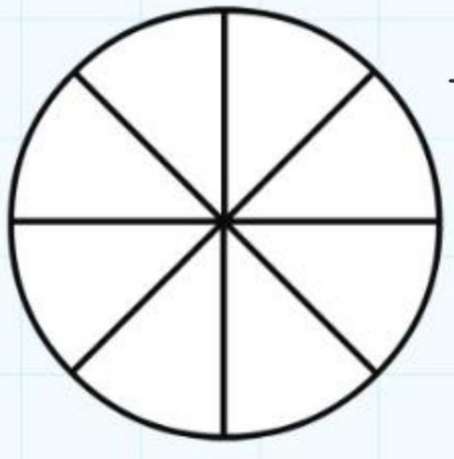
4. Shade the tiles of this grid using 4 different colours. Write what fraction of the grid is shaded in each colour. _____



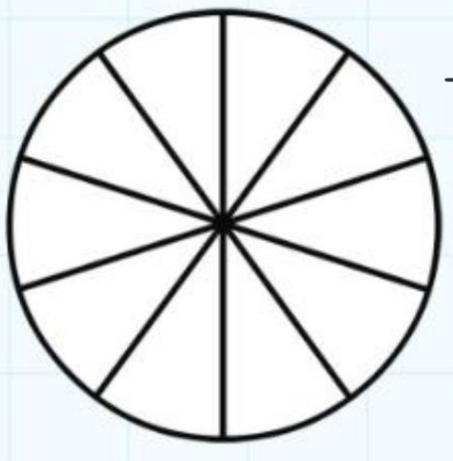
5. In the circles below, shade in the following fractions



$\frac{3}{4}$

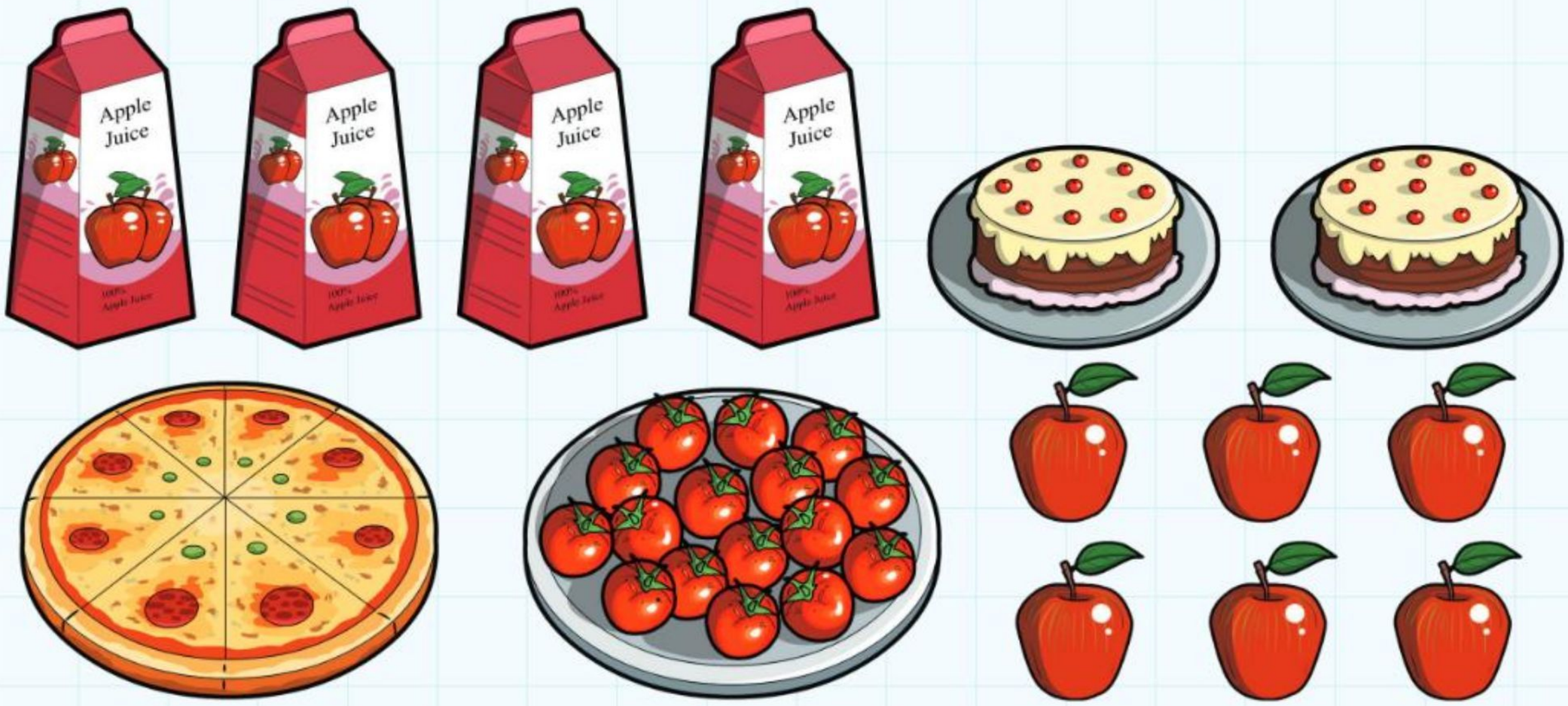


$\frac{3}{8}$



$\frac{7}{10}$

Connect



1. You and a friend are going to share this picnic. How will you share it out equally?

2. There will be 4 of you at a picnic. You each wish to eat the same amount of food. How will you share it equally this time?

3. Make up your own picnic. It should be easy to share between 10 people.

We will take _____ cartons of juice.

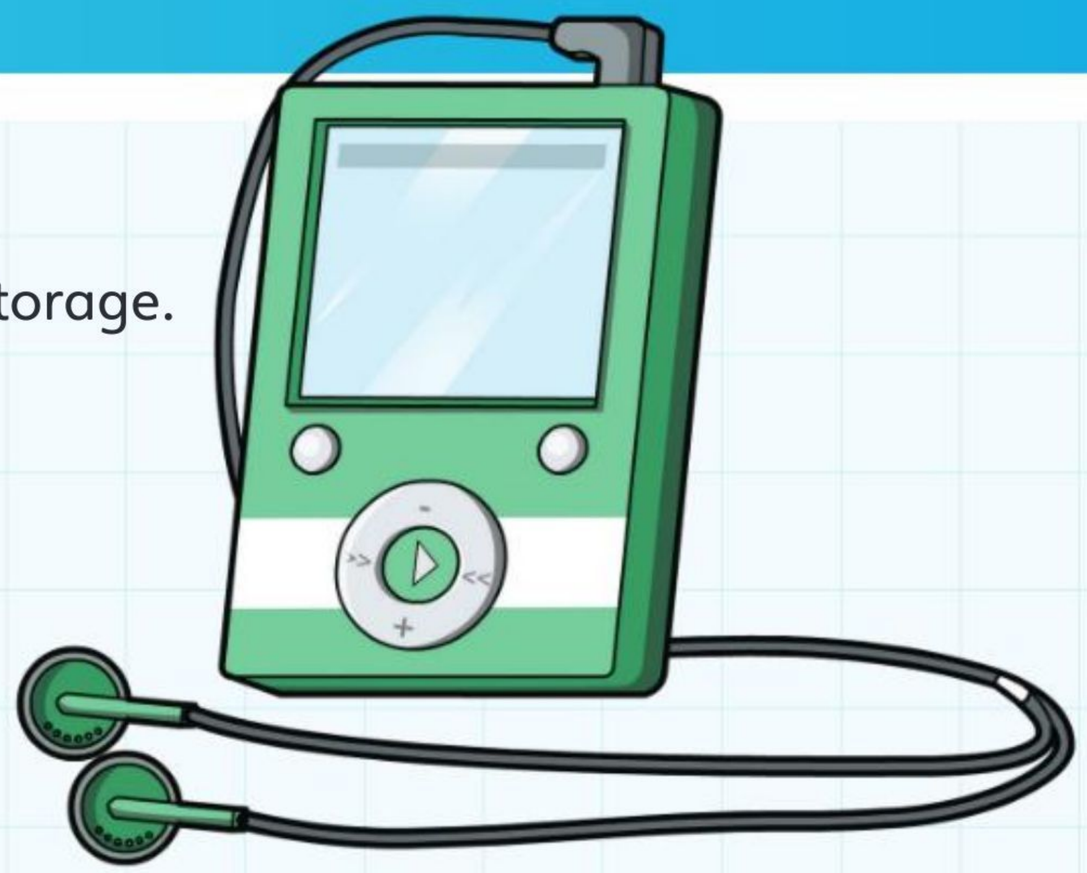
We will take _____ pizzas divided into _____.

We will take _____ apples.

We will take _____ cakes.

We will take _____ tomatoes.

Review



Your media player has 32 gigabytes of storage.

Songs = 1 gigabyte

Podcasts = 3 gigabytes

Apps = 4 gigabytes

Games = 6 gigabytes

Movies = 10 gigabytes

Using a diagram or a number line, draw three different ways that you could fill your media player so there is no empty storage.

Songs	Podcasts	Apps	Games	Movies

What fraction of space is taken up by each type of media?
Write it down.

3 Mental Calculation

Engage

Guess my number

3A Mental strategies for addition and subtraction

Discover

1. How many ways can I make 20?

For example, one student has written:

$5 + 15 = 20$

$3 + 4 + 13 = 20$

$1 + 1 + 1 + 2 + 15 = 20$

Work with a partner to find out all the different ways that you can make 20 by adding numbers.

Make sure you have all of them. Then write them down below. Write them down in a way that shows you have all the different ways of making 20.

2. The statements below are about any two numbers that add together to make 100.

Complete the table by circling the correct phrase in the 'Answer' column.

One has been done for you.

Statement	Answer	Example
The digits in the 'tens' column will be different.	Always true Sometimes true Never true	45 + 55 = 100 50 + 50 = 100
Both of the numbers will have a 0 in the units column.	Always true Sometimes true Never true	
If one of the numbers has 5 in the units column, then the other number will also have 5 in the units column.	Always true Sometimes true Never true	
The digits in the 'units' column will be different.	Always true Sometimes true Never true	
Someone gives me a number between 1 and 99. There is only one number which I can add to it to make 100.	Always true Sometimes true Never true	
The units digits will add to 10.	Always true Sometimes true Never true	

3A Mental strategies for addition and subtraction

Explore

1. How many **addition** calculations can you make using the digits 1, 2, 3, and 4?

   You should just use two, two-digit numbers in each calculation.

   You can only use each number once in each calculation.

   For example, 12 + 34 = 46 and 31 + 24 = 55

   Which calculation gives you the largest **sum**?

   Which calculation gives you the smallest sum?

2. How many **subtraction** number sentences with positive answers can you make using the digits 1, 2, 3, and 4?

   You should just use two, two-digit numbers in each calculation.

   You can only use each number once in each calculation.

   For example, 43 − 21 = 22 gives a positive answer, but 12 − 34 would give a negative answer.

   Which calculation gives you the largest sum?

   Which calculation gives you the smallest sum?

3. I know that 40 + 50 = 90, so I also know that:

400 + 500 = 900

400 + 50 = 450

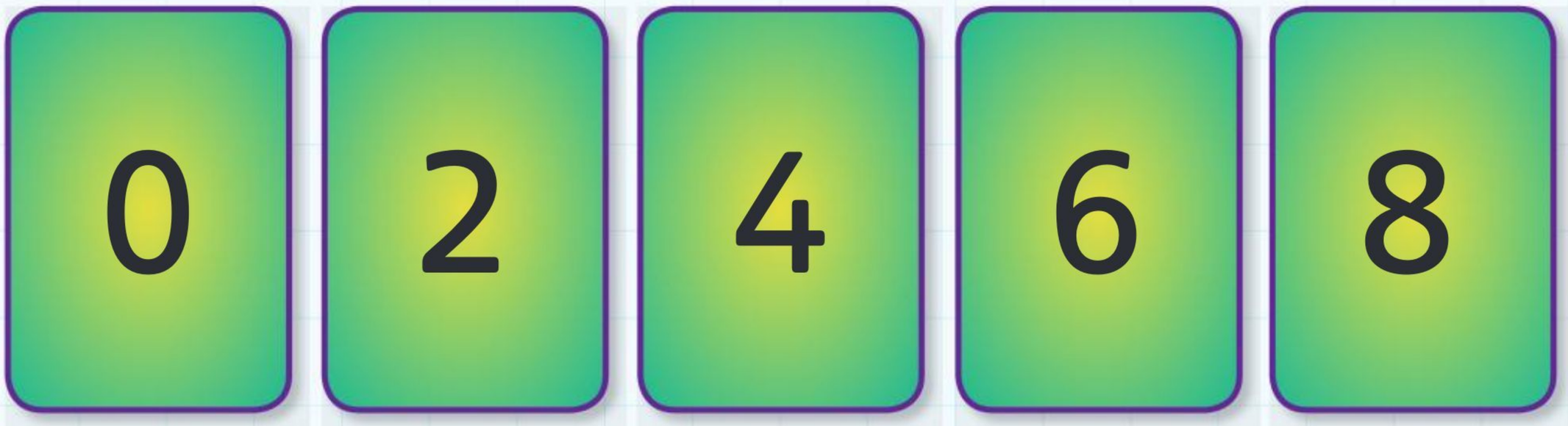
40 + 500 = 540

Complete this table in the same way:

40 + 50 = 90	400 + 500 = 900	400 + 50 = 450	40 + 500 = 540
10 + 70 =			
60 + 30 =			
50 + 10 =			
90 + 20 =			
60 + 70 =			
30 + 20 =			
50 + 50 =			

3B Mental strategies for multiplication and division

Discover



1. Use your set of digit cards to make a two-digit number

Write the following **multiplication** and **division** facts about this number.

For example, if we make 42:

- 42 is **double** 21
- 42 is **half** 84
- 42 is **divisible** by 2
- 42 is divisible by 3
- 42 is not divisible by 4
- 42 is not divisible by 5
- 42 is not divisible by 10

Now try five more two-digit numbers:

Number: _____

- _____ is double _____
- _____ is half _____
- _____ is/is not divisible by 2
- _____ is/is not divisible by 3
- _____ is/is not divisible by 4
- _____ is/is not divisible by 5
- _____ is/is not divisible by 10

Number: _____

- _____ is double _____
- _____ is half _____
- _____ is/is not divisible by 2
- _____ is/is not divisible by 3
- _____ is/is not divisible by 4
- _____ is/is not divisible by 5
- _____ is/is not divisible by 10

Number: _____

- _____ is double _____
- _____ is half _____
- _____ is/is not divisible by 2
- _____ is/is not divisible by 3
- _____ is/is not divisible by 4
- _____ is/is not divisible by 5
- _____ is/is not divisible by 10

Number: _____

- _____ is double _____
- _____ is half _____
- _____ is/is not divisible by 2
- _____ is/is not divisible by 3
- _____ is/is not divisible by 4
- _____ is/is not divisible by 5
- _____ is/is not divisible by 10

Number: _____

- _____ is double _____
- _____ is half _____
- _____ is/is not divisible by 2
- _____ is/is not divisible by 3
- _____ is/is not divisible by 4
- _____ is/is not divisible by 5
- _____ is/is not divisible by 10

Complete the sentences

- A number is divisble by 2 if

  _____

- A number is divisble by 3 if

  _____

- A number is divisble by 4 if

  _____

- A number is divisble by 5 if

  _____

- A number is divisble by 10 if

  _____

3B Mental strategies for multiplication and division

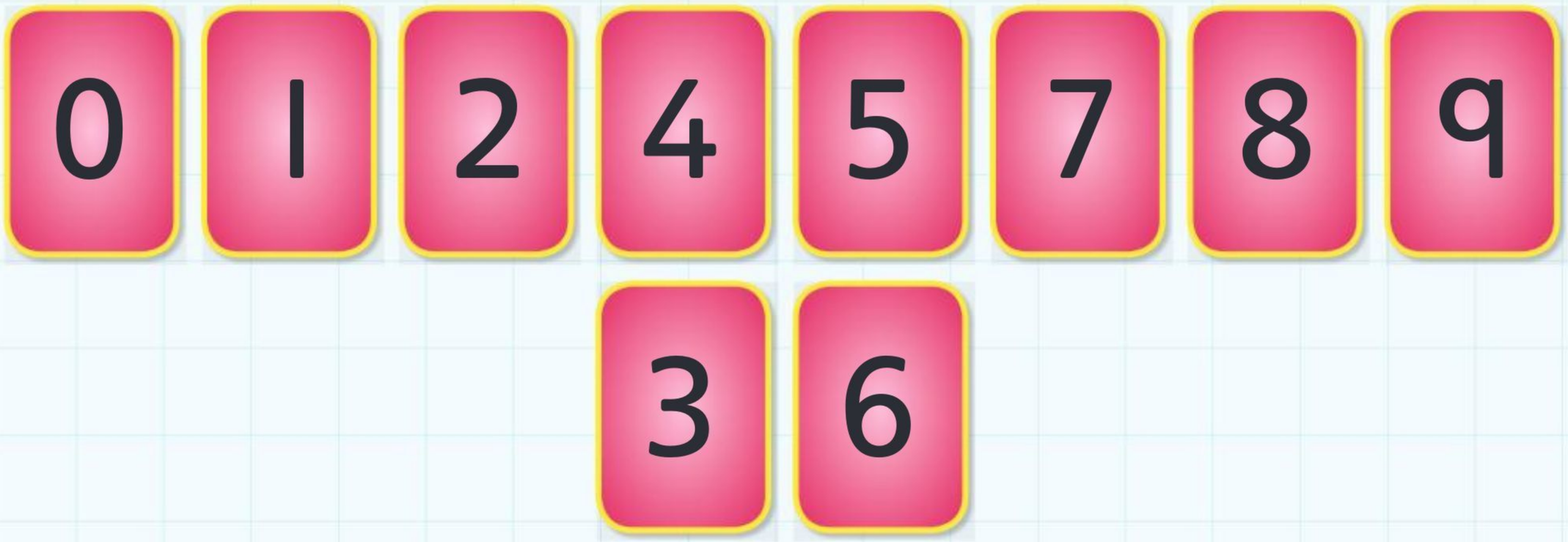
Explore

1. Use a set of 0–9 digit cards.

   Pick any 2 cards to make a two-digit number.

   Place the number in all the possible rows in this table.

   Replace the cards and repeat until you have 20 different numbers.



Multiples of 2	36
Multiples of 3	36
Multiples of 4	36
Multiples of 5	
Multiples of 10	
Not a multiple of 2, 3, 4, 5, or 10.	

2. Circle true or false next to each statement

250 is divisible by 10	True/False
250 is divisible by 2	True/False
384 is divisible by 5	True/False
384 is divisible by 2	True/False
491 is divisible by 2	True/False
491 is divisible by 10	True/False
645 is divisible by 5	True/False
645 is divisible by 2	True/False
700 is divisible by 5	True/False

3. Make up your own True/False sentences for your partner.

You must know the answers and be able to give a reason for each one.

	True/False
	True/False
	True/False
	True/False
	True/False
	True/False
	True/False
	True/False
	True/False
	True/False

4. Complete the following tables:

Number	Double the number
10	20
15	
25	
	60
45	
	100
65	
	140
	150
85	
90	
	200

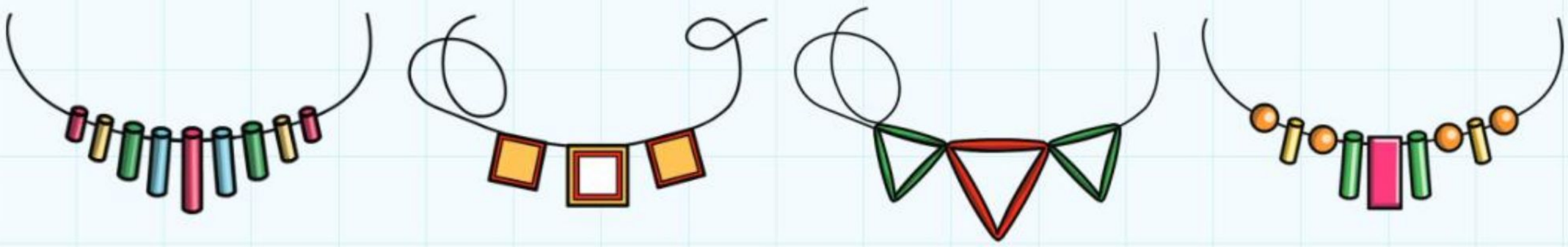
Number	Double the number
100	200
150	
250	
	600
450	
	1000
650	
	1400
	1500
850	
900	
	2000

What do you notice about the answers in the 2 tables?

3 Mental calculation

Connect

You are making jewellery out of craft straws and paper triangles.



You are making necklaces like the one in the second picture. You have 27 straws.
How many can you make?

You are making necklaces using paper triangles and squares. You have 36 straws.

Below, show 2 different designs for a necklace which uses all 36 straws.

You are making necklaces using triangles, squares and regular pentagons.
You have 50 straws.
Show 3 different designs for a necklace which uses all 50 straws.

3 Mental calculation

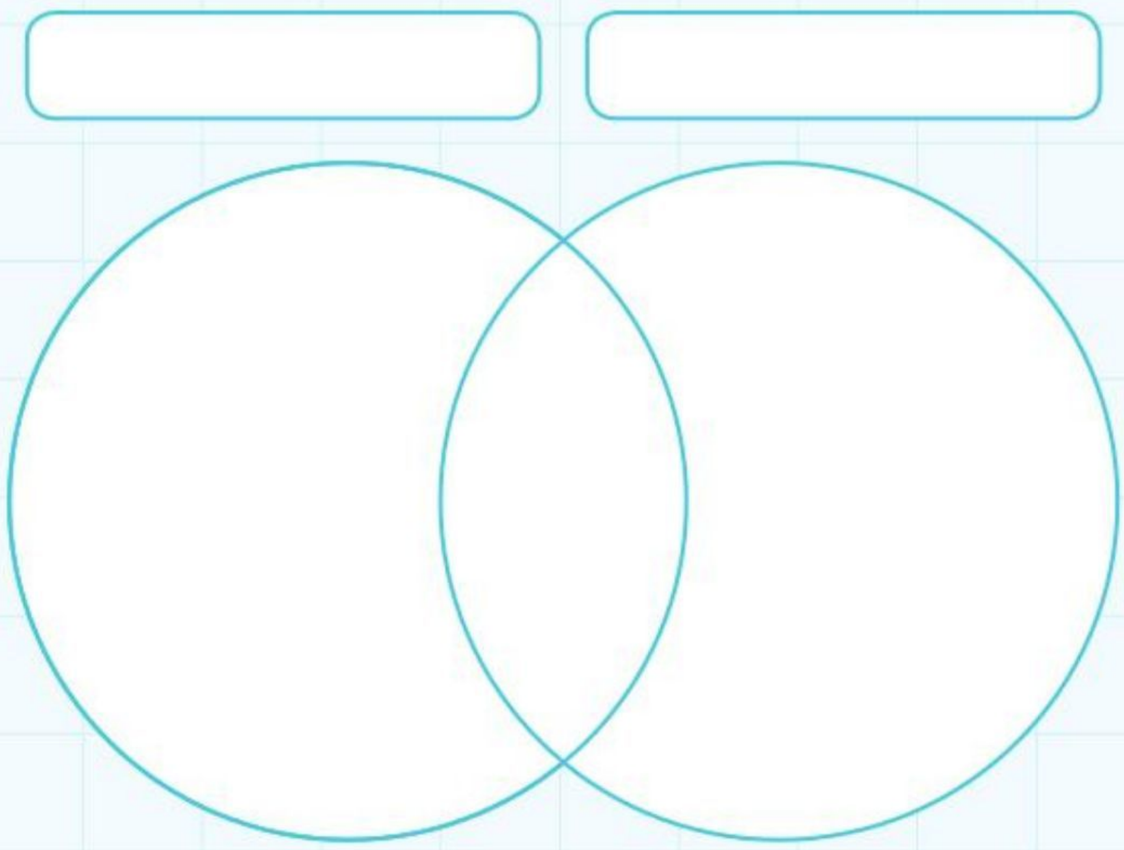
Review

Use the Venn diagrams below.

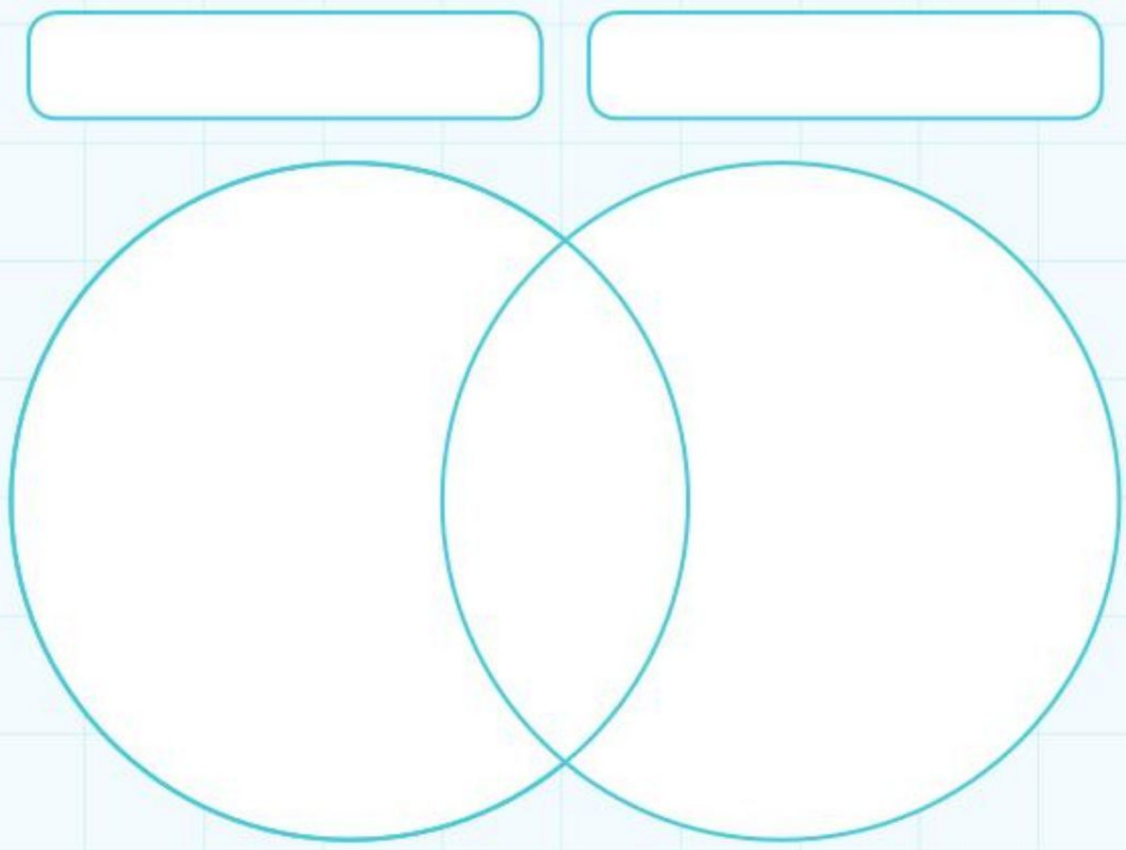
Sort these numbers in two different ways:

7, 39, 87, 4, 28, 66, 99, 72, 60, 30, 15, 55, 95, 19, 27, 34, 100, 12

First way



Second way



Complete this Carroll diagram with numbers of your own:

	Multiples of 4	Multiples of 10
Multiples of 5		
Multiples of 3		

4 Addition and Subtraction

Engage

We can add and subtract.

I know what 100 + 36 is...

I can **add** multiples of 10 together

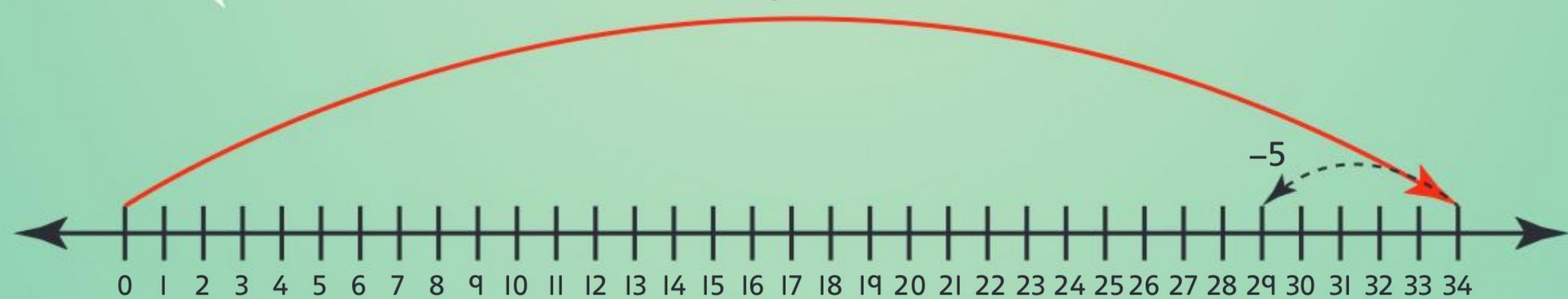
I know how to use a ruler to help me add and subtract

$$3 + 5 + 7 + 5 + 4 = ?$$

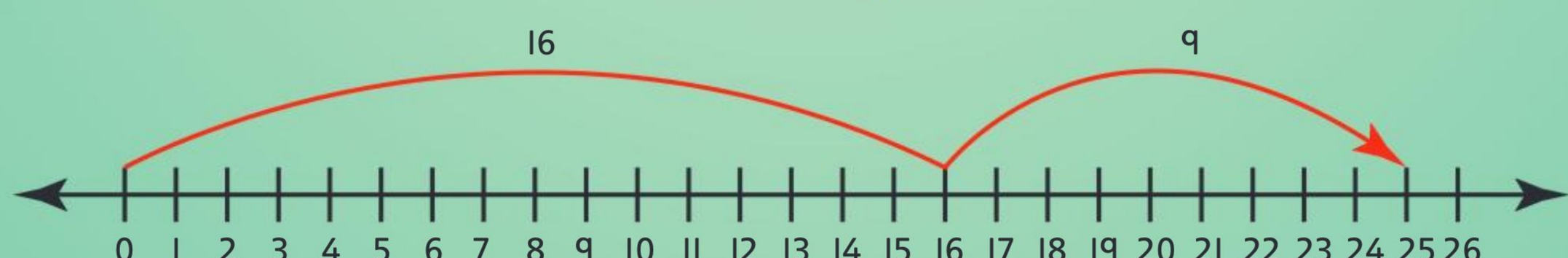
I can remember how to use number lines to add and subtract

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

I can use a 100 square to help me add and subtract



$34 - 5 = 29$



$16 + 9 = 25$

4A Adding and subtracting multiples of 10 and 100

Discover

1. Use the following numbers and signs to make 5 different calculations with the answer 100. Two have been done for you.

10	30	40	50	60	70	90	+	=

$10 + 90 = 100$

$10 + 30 + 60 = 100$

a)

b)

c)

d)

e)

2. Use the following numbers and signs to make 5 different calculations with the answer 20. Two have been done for you.

10	30	40	50	60	70	90	–	=

$30 - 10 = 20$

$50 - 10 - 10 - 10 = 20$

a)

b)

c)

d)

e)

3. Use the following numbers and signs to make 5 different calculations with the answer 1000. Two have been done for you.

200	300	400	600	700	800	900	+	=

300 + 700 = 1000

200 + 400 + 400 = 1000

a)

b)

c)

d)

e)

4. Use the following numbers and signs to make 5 different calculations with the answer 100. Two have been done for you.

200	300	400	600	700	800	900	–	=

700 – 600 = 100

800 – 400 – 300 = 100

a)

b)

c)

d)

e)

5. Choose any number between 10 and 65.

Shade this number in the 100 square in red.

Add 10 to the number, shade the answer in blue.

Repeat this 10 times.

What do you notice about your answers?

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

4A Adding and subtracting multiples of 10 and 100

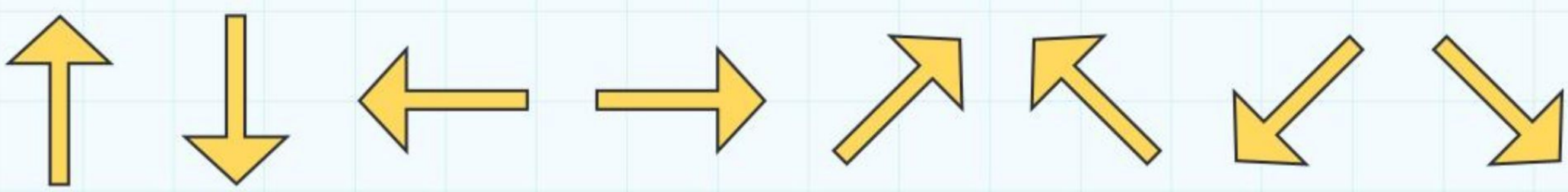
Explore

1.

370	20	80	100	60	40	50
90	70	60	90	40	20	100
130	30	70	50	40	10	60
70	80	20	30	80	30	140
130	60	10	30	50	50	130
70	10	20	50	90	70	120
120	100	100	60	30	90	60

Start at the number 30, which is shaded grey in the centre of the table. Try to get from here to any of the numbers at the edges (shaded grey) by adding or subtracting.

You can go in these directions:



Write down the number sentence below.

For example: $30 + 50 + 40 - 20 = 100$ and $30 + 40 - 10 = 60$

a)

b)

c)

d)

e)

f)

g)

h)

i)

j)

2. Fill in this grid with multiples of 100.

When you have done this, write down 5 number sentences that take you from the middle number to an outside number by adding or subtracting.

		400		

4B Adding several small numbers

Discover

Write the numbers 1–6 on separate pieces of paper and put them all in a bag. Pull a number out of the bag, and record that number.

Then put it back in the bag.

Repeat this 10 times.

Now add the ten numbers together. For example:

$1 + 3 + 5 + 4 + 6 + 1 + 2 + 4 + 3 + 5 = 34$

What is the largest possible **total**?

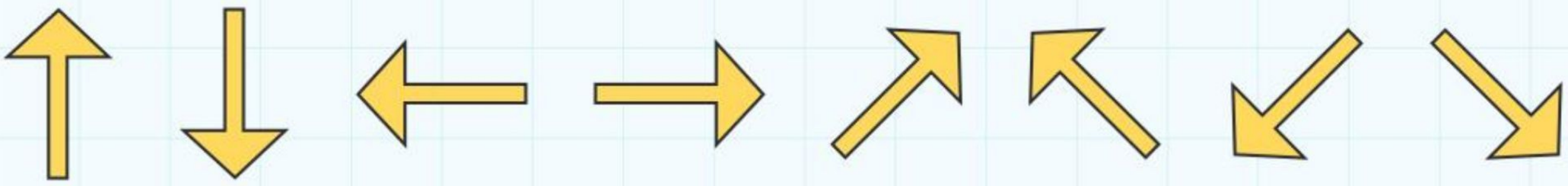
What is the smallest possible total?

Did you find any quick ways to add numbers together?

4B Adding several small numbers

Explore

You can travel through this maze by moving to any square that is next to the one you are in. You can move across, down, or diagonally. Write down the numbers and add them together.



Start	3	5	3
3	4	2	1
1	3	8	6
4	4	2	Finish

For example

$3 + 4 + 2 + 8 + 6 = 23$

Find 10 different routes

a)

b)

c)

d)

e)

f)

g)

h)

i)

j)

What is the largest total you made?

Can you find a bigger one?

What is the smallest total you made?

Can you find a smaller one?

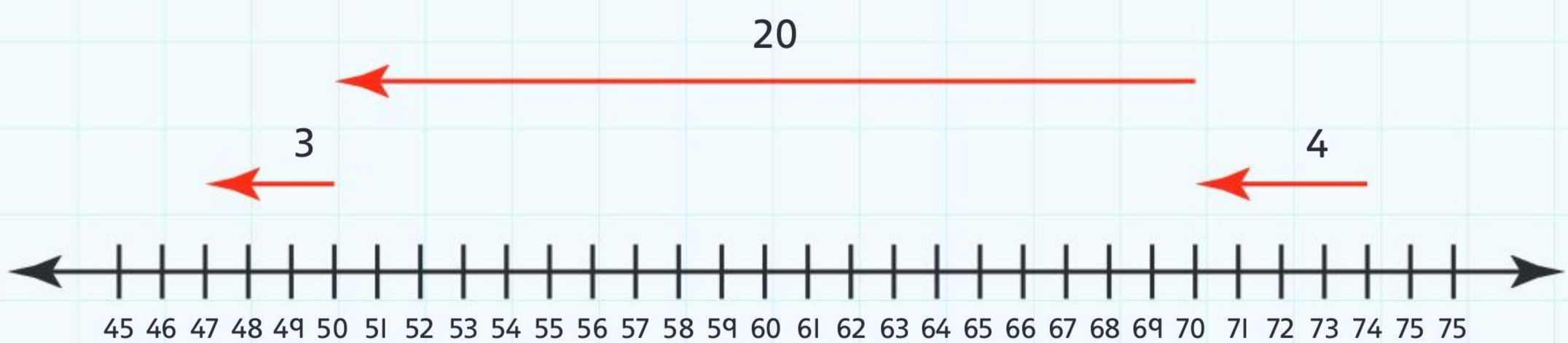
1. Take a set of cards labelled from 1 to 9.

Pick two cards from this pack, and put them side-by-side to make a two-digit number.

Now reverse the digits to make a different two-digit number.

Find the **difference between** the two numbers.

2. Now use a number line to help you find the answer to question 1.
For example if your numbers were 74 and 47, we would do this:



$74 - 47 = 4 + 20 + 3$

$74 - 47 = 27$

4C Adding pairs of two- and three-digit numbers

Discover

1. Look at the following number square

15	16	17
22	23	24
29	30	31

a) Double the middle number.

_____

b) Add the red shaded numbers.

_____

c) Add the purple shaded numbers.

_____

d) Add the green shaded numbers. _____

e) What do you notice? _____

_____

f) Add the three **rows**. _____

g) Add the three **columns**. _____

h) What do you notice? _____

_____

I think this happens because _____

2. Use the following digits and symbols to make ten sums.
In each case, add a two-digit number to a three-digit number.
The first one has been done for you.

1, 2, 3, 4, 5, +, =

a) 341 + 52 = 393

b)

c)

d)

e)

f)

g)

h)

i)

j)

k)

Which was your biggest answer?

Could you make a bigger one?

Which was your smallest number?

Could you make a smaller one?

4C Adding pairs of two- and three-digit numbers

Explore

This game is played by taking a set of cards labelled from 0 to 9.

Pick one card at a time and write that number somewhere on the 'Tens and Units' board.

Keep going until the 'Tens' column and the 'Units' column are filled.

Work out the total by adding the numbers.

Example:

	Tens	Units
	5	2
89	3	7
108	1	9
156	4	8
216	6	0
Total = 216		

52 + 37 = 89

89 + 19 = 108

108 + 48 = 156

156 + 60 = 216

Now you try. Play the game twice.

	Tens	Units
Total =		

	Tens	Units
Total =		

Play the game once more.
Arrange the numbers so the total is as close to 200 as possible.

	Tens	Units
Total =		

4D Adding and subtracting numbers

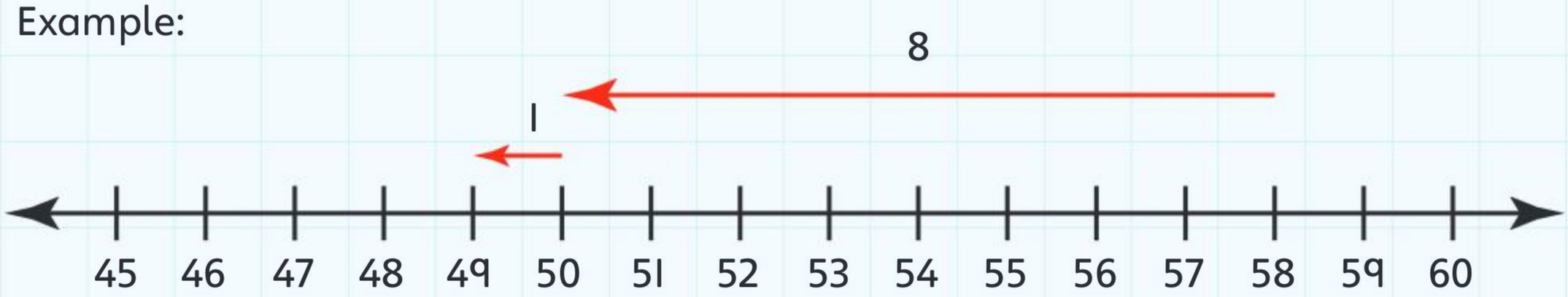
Discover

Take a set of cards labelled from 1 to 9.
Pick a card. Write that number in the box to make a **subtraction** calculation.

Work out the calculation.

Draw the calculation on a number line.

Example:



$58 - 9 = 58 - 8 - 1$

58	–	9	=	49
149	–		=	
211	–		=	
578	–		=	
42	–		=	
99	–		=	
11	–		=	
105	–		=	
201	–		=	
899	–		=	
60	–		=	
82	–		=	
413	–		=	
535	–		=	
34	–		=	

4D Adding and subtracting numbers

Explore

Look at the following pictures.

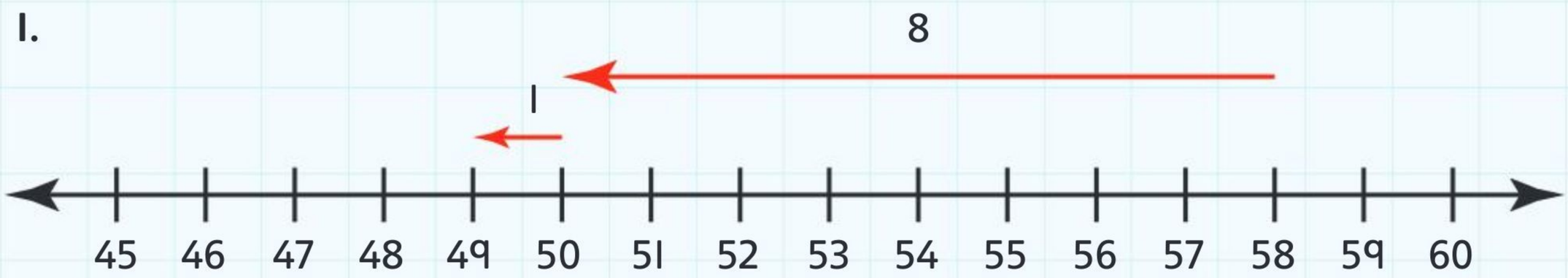
Write a number story linked to the picture.

Illustrate the story with a number line.

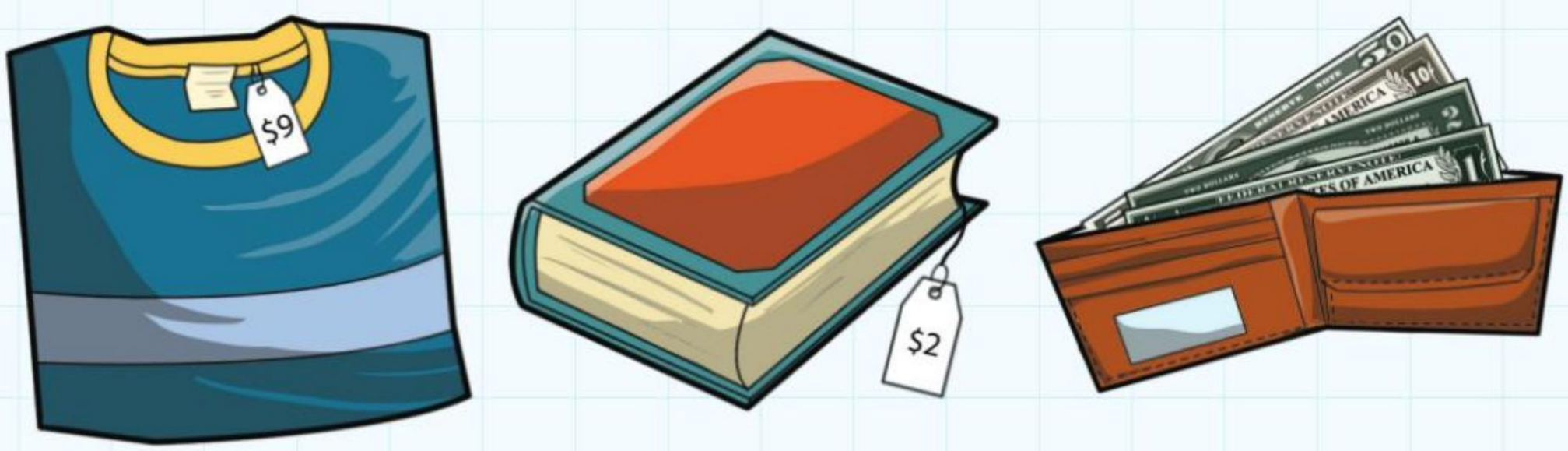
After each calculation check that the answer is correct.

Write down how you checked the answer.

1.



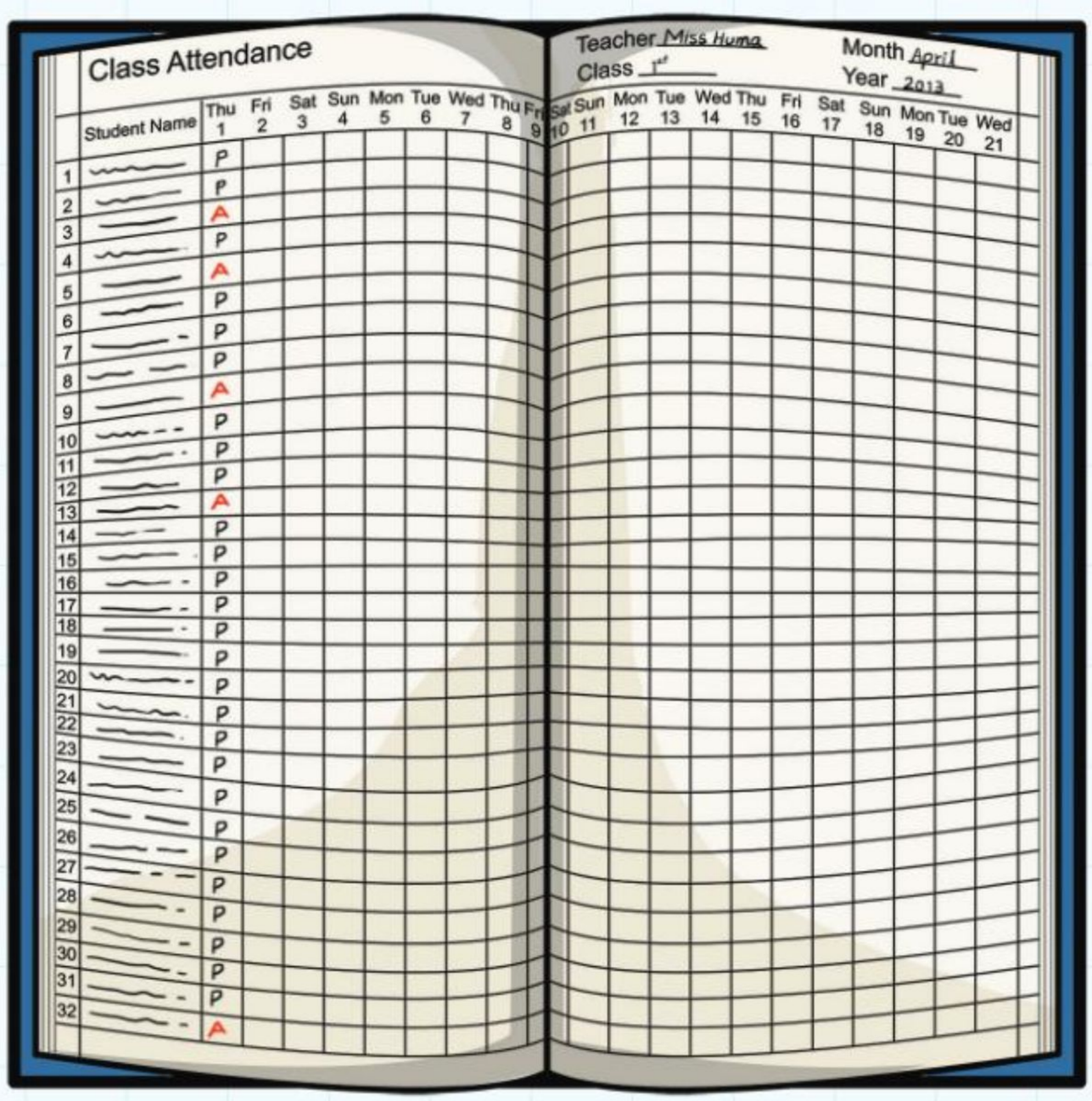
2.



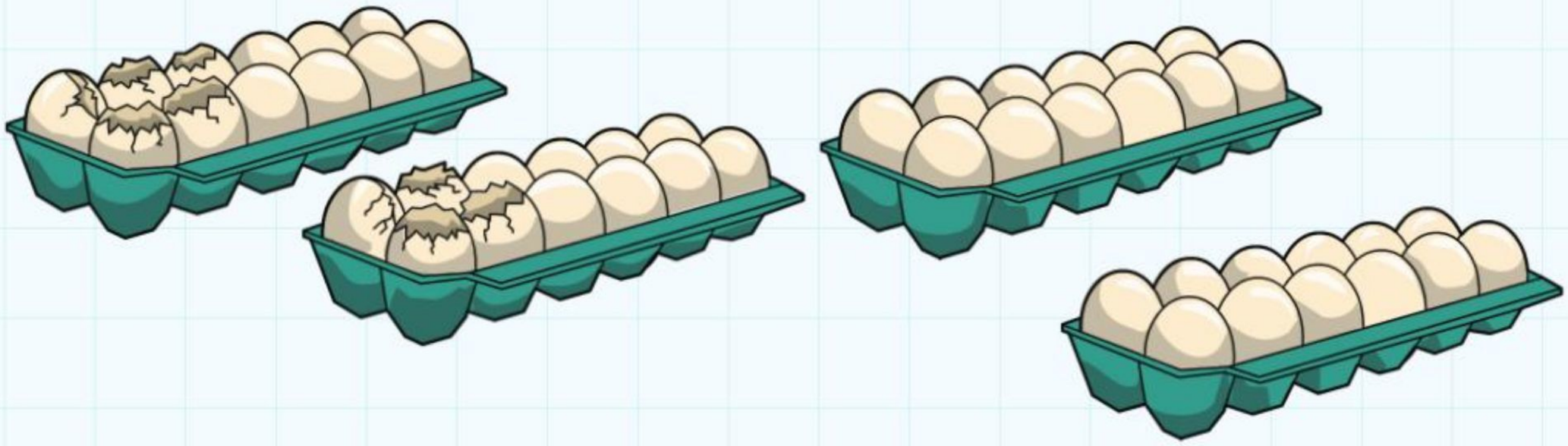
3.

HOME
12:57
GUEST
72
85
PERIOD 4
BONUS
PASS
BONUS
FOULS
SHOT CLOCK
FOULS
05
:17
03

4.


Class Attendance
Teacher Miss Huma
Class 1st
Month April
Year 2013
Student Name
Thu 1 Fri 2 Sat 3 Sun 4 Mon 5 Tue 6 Wed 7 Thu 8 Fri 9 Sat 10 Sun 11 Mon 12 Tue 13 Wed 14 Thu 15 Fri 16 Sat 17 Sun 18 Mon 19 Tue 20 Wed 21

5.



6. Make up your own number story.

Connect

Magic squares

1. Use the digits 1 to 9 to complete this Magic Square so that each row, each column and each diagonal adds up to 15.

2. Complete this square so that each row, each column and each diagonal adds up to 34.

   Use the numbers 1–16

16			
	10		8
			12
	15		

Review

Make a set of loop cards using this grid.

The first three have been completed for you.

Try to use all the things you have learned in this unit.

I am 15 Who is 50 + 30	I am 80 Who is 435 − 9	I am 426 Who is		
				I am Who is 3 + 2 + 9 + 1

5 Multiplication and Division

Engage

There are 4 lettuces in each **column** so in 6 columns there will be 24 lettuces.

There are **4 rows** of solar panels and 5 columns so $4 \times 5 = 20$. I think if I **divide** 20 panels in 4 rows there will be 5 in each row.

This shows that two **multiplied by** six equals twelve.

5A Multiplying and dividing numbers

Discover

1. I divide 20 beans into 4 groups.
Draw the groups below.

This is the fact family:

$4 \times 5 = 20$ $\quad$ $5 \times 4 = 20$ $\quad$ $20 \div 4 = 5$ $\quad$ $20 \div 5 = 4$

2. Divide 28 beans into 2 groups.

Draw the groups and write down the fact family.

3. Divide 15 beans into 3 groups.

Draw the groups and write down the fact family.

4. Divide 24 beans into 6 groups.

   Draw the groups and write down the fact family.

5. Divide 36 beans into 9 groups.

   Draw the groups and write down the fact family.

6. Divide 40 beans into 10 groups.

   Draw the groups and write down the fact family.

7. There are 36 students in a class.

   How many different ways can the students be arranged into equal groups?

   Draw each different answer and write the fact family below the picture.

5A Multiplying and dividing numbers

Explore

1. Here is a number game board. Write down 16 calculations, so that each calculation gives you an answer on the board.
You should write a mixture of multiplication and division calculations.

12	22	33	42
15	25	34	45
17	26	36	46
18	28	38	49

a)

b)

c)

d)

e)

f)

g)

h)

i)

j)

k)

l)

m)

n)

o)

p)

2. The answer is 24. Complete the questions.

a) ? × 3 = 24

b) 6 × ? = 24

c) 72 ÷ ? = 24

d) ? ÷ 2 = 24

e) **Double** ? = 24

5B Multiplying teen numbers by 3 and 5

Discover

1. Complete this table by multiplying by 3. The first one has been done for you.

10	× 3	30
11	× 3	
12	× 3	
13	× 3	
14	× 3	
15	× 3	
16	× 3	
17	× 3	
18	× 3	
19	× 3	

What do you notice about the answers?

2. Complete this table by multiplying by 5.

10	× 5	
11	× 5	
12	× 5	
13	× 5	
14	× 5	
15	× 5	
16	× 5	
17	× 5	
18	× 5	
19	× 5	

What do you notice about the answers?

3. Use the following numbers and signs:

1, 2, 3, 5, $\times$, $\div$, $=$

How many of the numbers from 1–20 can you make?

Look at the examples to help you.

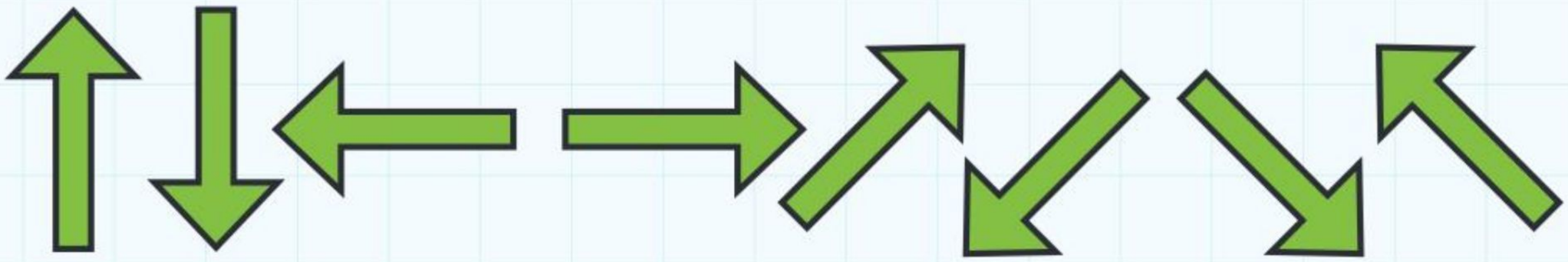
1	
2	
3	
4	
5	
6	$2 \times 3 = 6$
7	
8	
9	
10	
11	$55 \div 5 = 11$
12	
13	
14	
15	
16	
17	
18	
19	
20	

5B Multiplying teen numbers by 3 and 5

Explore

1. Find the way from the start to the finish. You cannot visit any square **twice**.

You can move in these directions:



Multiply the numbers as you move across the square.

Look at the example:

$2 \times 3 = 6$

$6 \times 5 = 30$

$30 \times 2 = 60$

So my total is 60

Start	2	3	5
2	3	5	2
3	5	2	Finish

Find 5 different routes. Colour them in different colours, and write each multiplication sum below.

a)

b)

c)

d)

e)

What is the biggest possible total?

What is the smallest possible total?

2. Find a route from the start to the finish of this track.

Multiply the numbers as you move across the square.

Look at the example:

$13 \times 3 = 39$

$39 \times 10 = 390$

$390 \times 2 = 780$

So my total is 780.

Start	13	3	5
15	3	10	2
3	10	2	Finish

Find 5 different routes. Colour them in different colours, and write each multiplication sum below.

a)

b)

c)

d)

e)

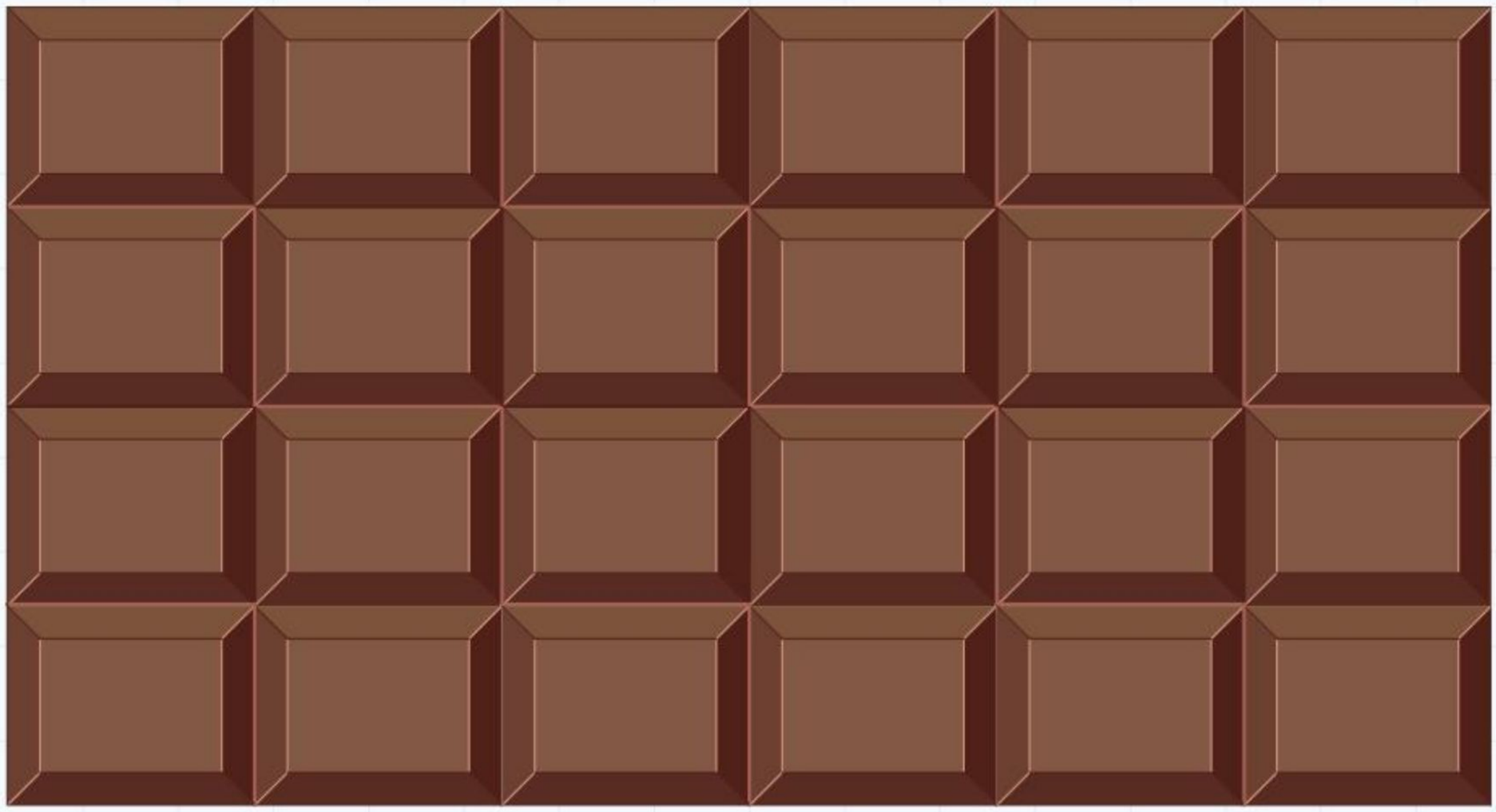
What is the biggest possible total?

What is the smallest possible total?

5C Dividing numbers with remainders

Discover

1. How many different ways can you **share** out this bar of chocolate fairly?



For example 2 people can have 12 chunks each.

What about:

- 3 people
- 4 people
- 6 people
- 8 people
- 12 people
- 24 people

5 people can have 4 chunks each. There are 4 ***left over****.*

What about:

- 7 people
- 9 people
- 10 people
- 11 people

2. How many different ways can you share these cakes fairly?

2 people can have		cakes each	
3 people can have		cakes each	
4 people can have exactly	9	cakes each	
5 people can have		cakes each	
6 people can have		cakes each	
7 people can have		cakes each	
8 people can have		cakes each	
9 people can have		cakes each	
10 people can have	3	cakes each	with 6 left over
11 people can have		cakes each	
12 people can have		cakes each	
13 people can have		cakes each	

5C Dividing numbers with remainders

Explore

1.

'5 friends shared these bananas. There were 3 left over.'

Look at the division statement above.

a) Write down a division statement with no **remainder**.

b) Write down a division statement with remainder 2.

c) Write down a division statement with remainder 4.

d) Write down a division statement with remainder 1.

2.

a) Write down a division statement with no remainder.

b) Write down a division statement with remainder 3.

c) Write down a division statement with remainder 2.

d) Write down a division statement with remainder 1.

3.

a) Write down a division statement with no remainder.

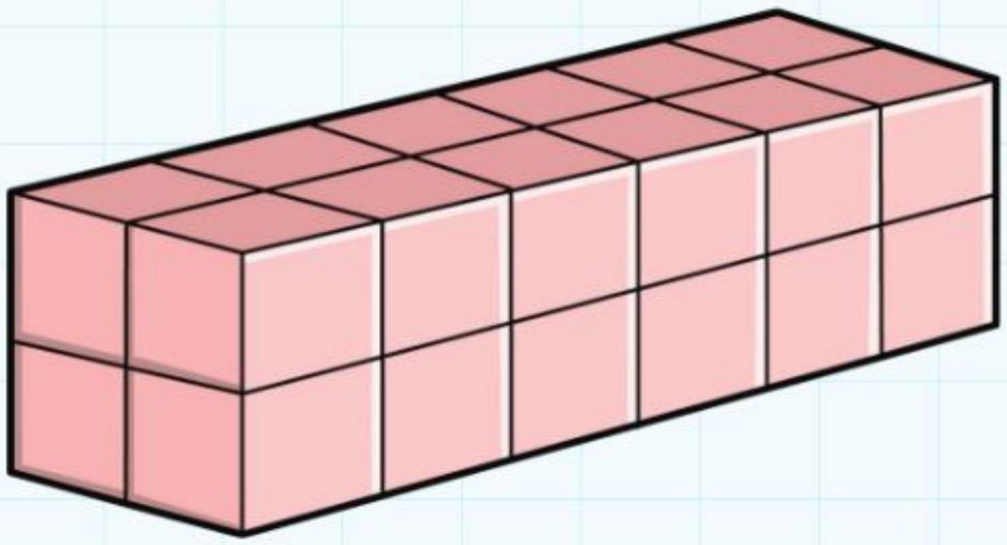
b) Write down a division statement with remainder 1.

c) Write down a division statement with remainder 3.

d) Write down a division statement with remainder 4.

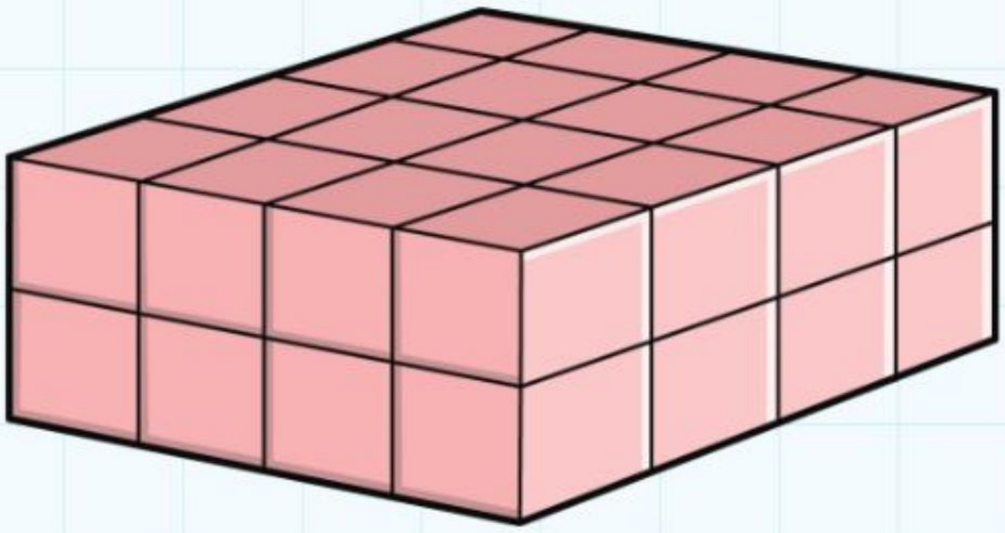
Connect

1. How many cubes are there in this cuboid?



How many different cuboids can you make from this number of cubes?

2. How many different cuboids can you make from this number of cubes?



3. Investigate making cuboids with different numbers of cubes.

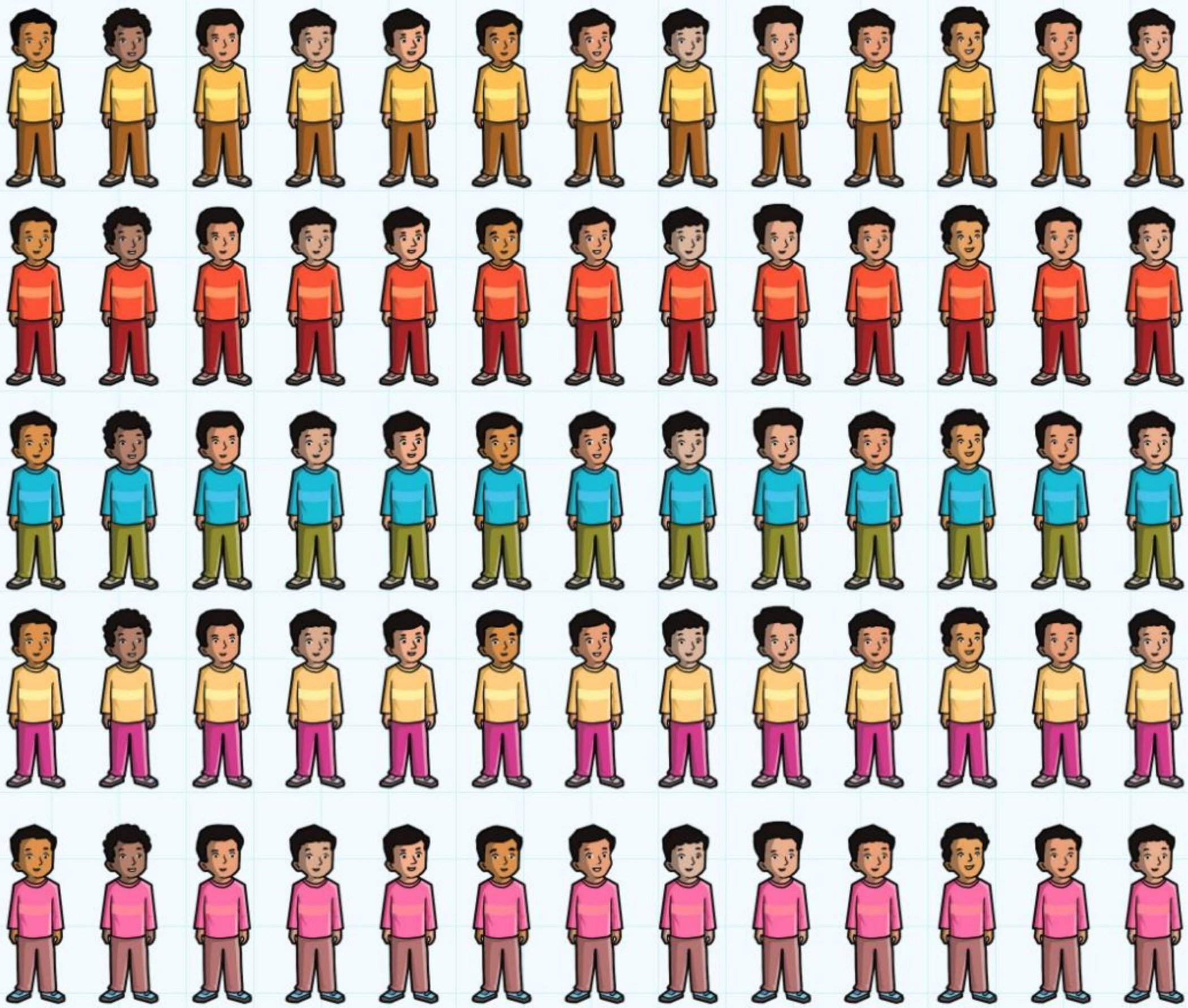
Which numbers are good for making lots of different cuboids?
Do these numbers have anything in common?

Which numbers only make 1 cuboid?

Review

A student wrote a number story about the number sentence $13 \times 5 = 65$.

He wrote 'There are 5 teams of 13 children. This made 65 children altogether'.



Write down number stories for these number sentences:

1. $23 \times 10 = 230$

2. $7 \times 6 = 42$

3. $60 \div 5 = 12$

4. $18 \times 4 = 72$

5. $38 \div 6 = 6$ remainder 2

6 Shapes and Geometry

Engage

There are lots of different shapes all around us:

I can see 2D and 3D shapes in the classroom

I can remember lots of different names for shapes

What is the difference between 2D and 3D shapes?

I can tell you the difference between faces, edges, and vertices

My favourite shape to make patterns with is ...

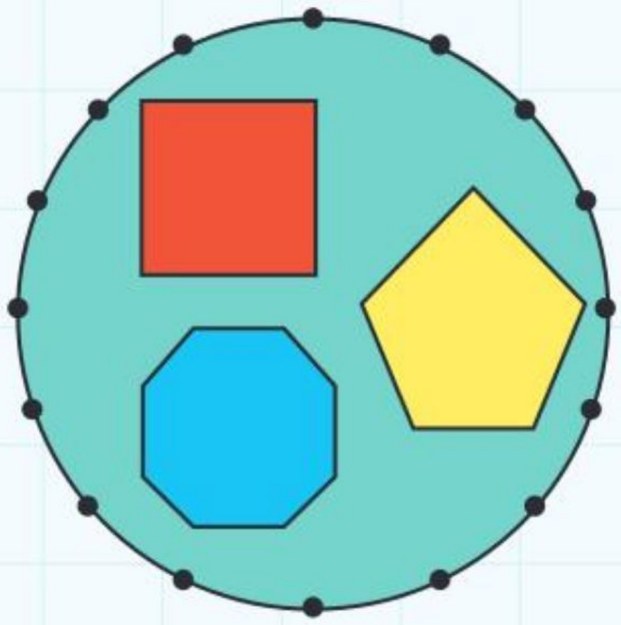
I know the names of lots of different 2D and 3D shapes

6A Identifying and classifying polygons

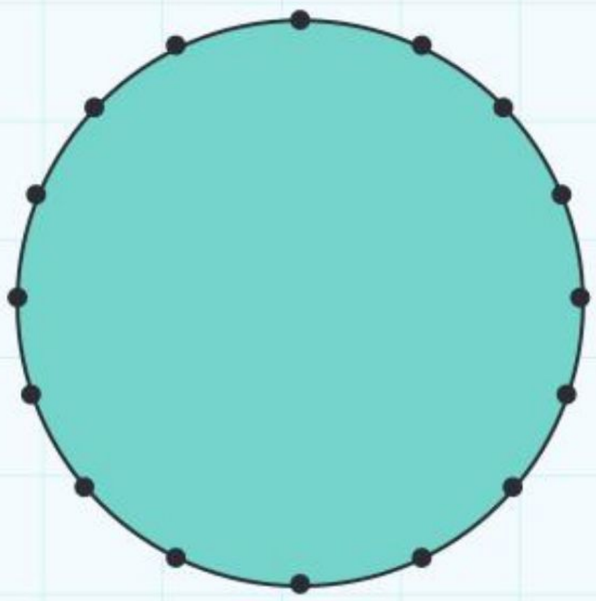
Discover

1. Polygons in circles

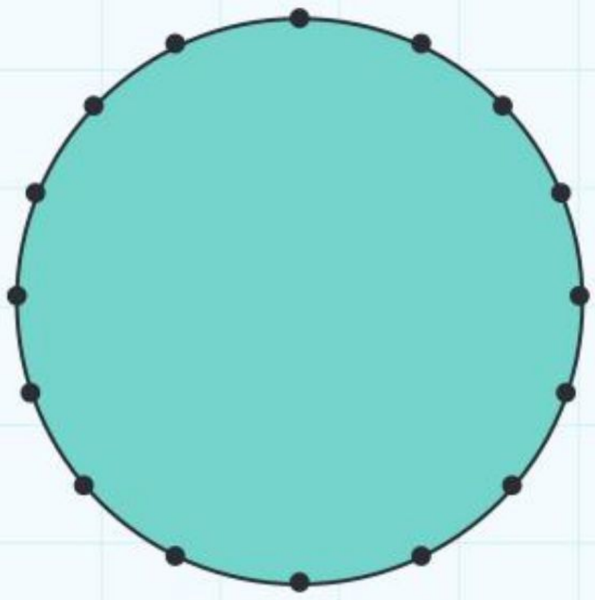
I have drawn a square, an irregular pentagon, and a regular octagon inside this circle:



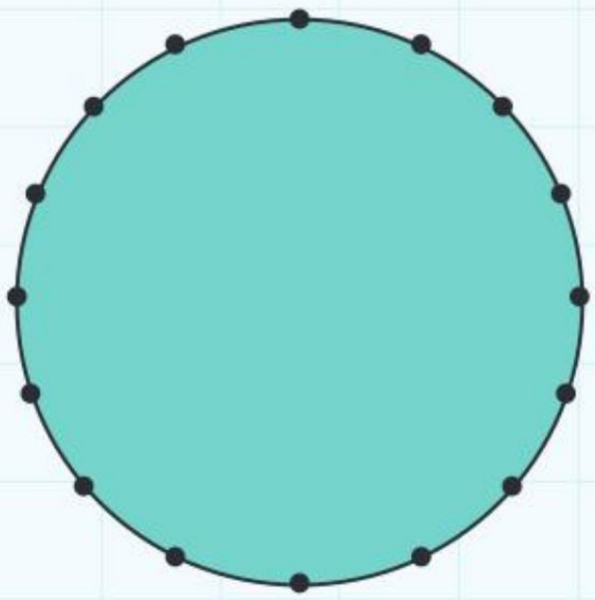
a) On this circle draw five different quadrilaterals. Use a different colour for each quadrilateral.



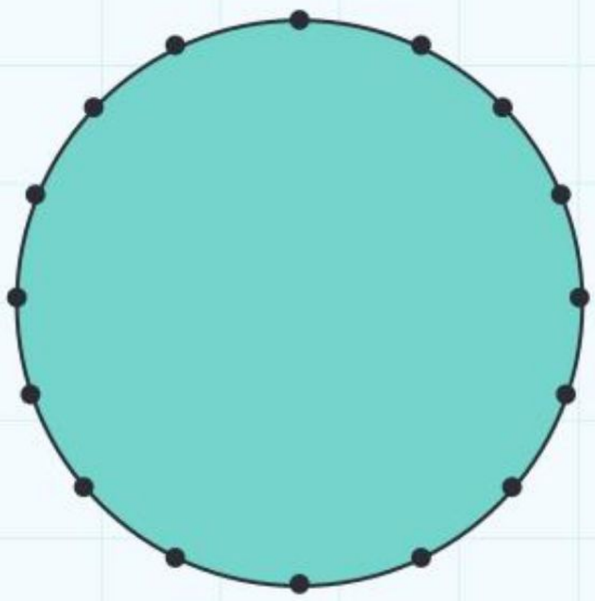
b) On this circle draw four different pentagons. Use a different colour for each pentagon.



c) On this circle draw three different hexagons. Use a different colour for each hexagon.

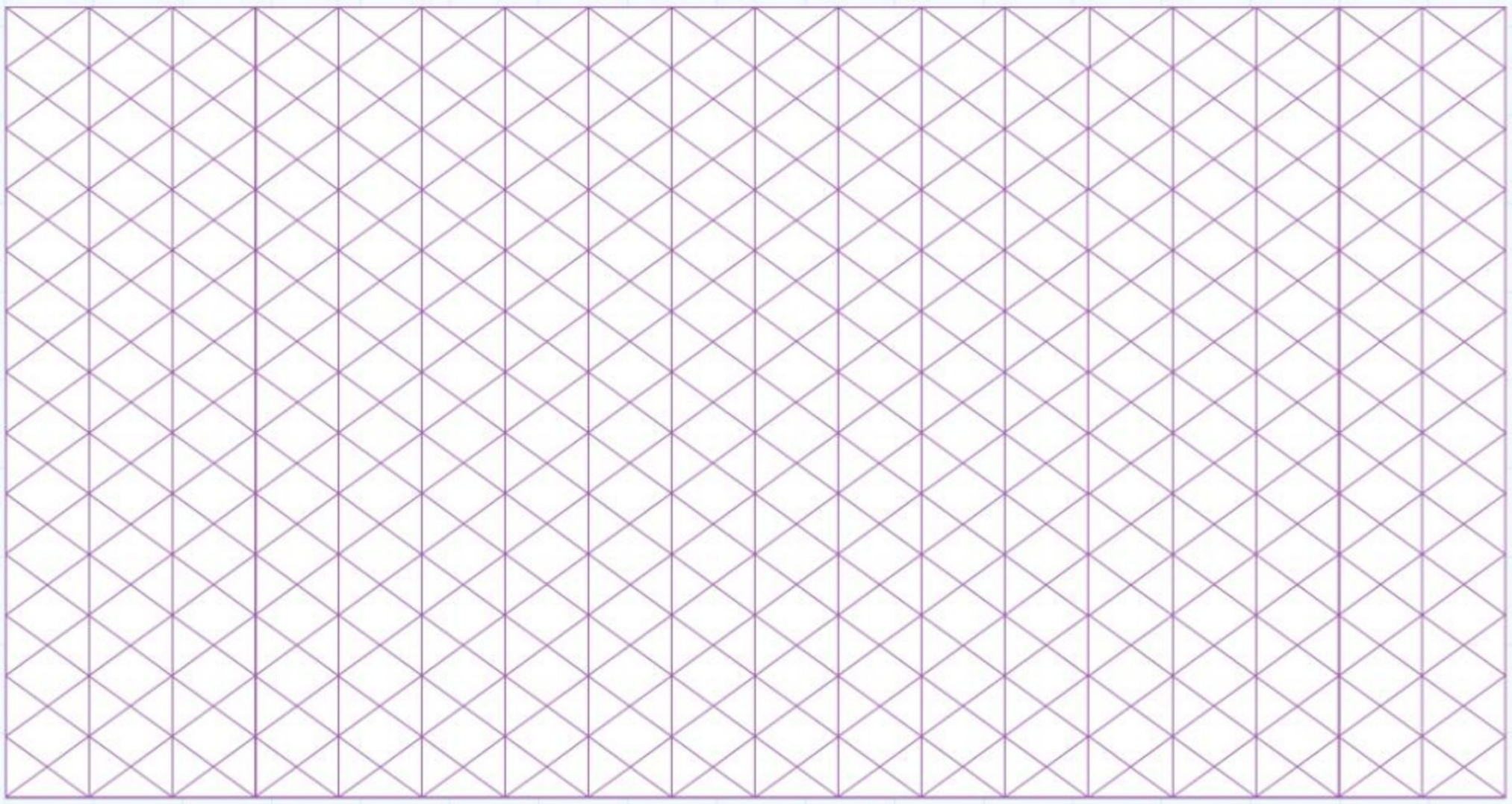


d) On this circle draw three different octagons. Use a different colour for each octagon.

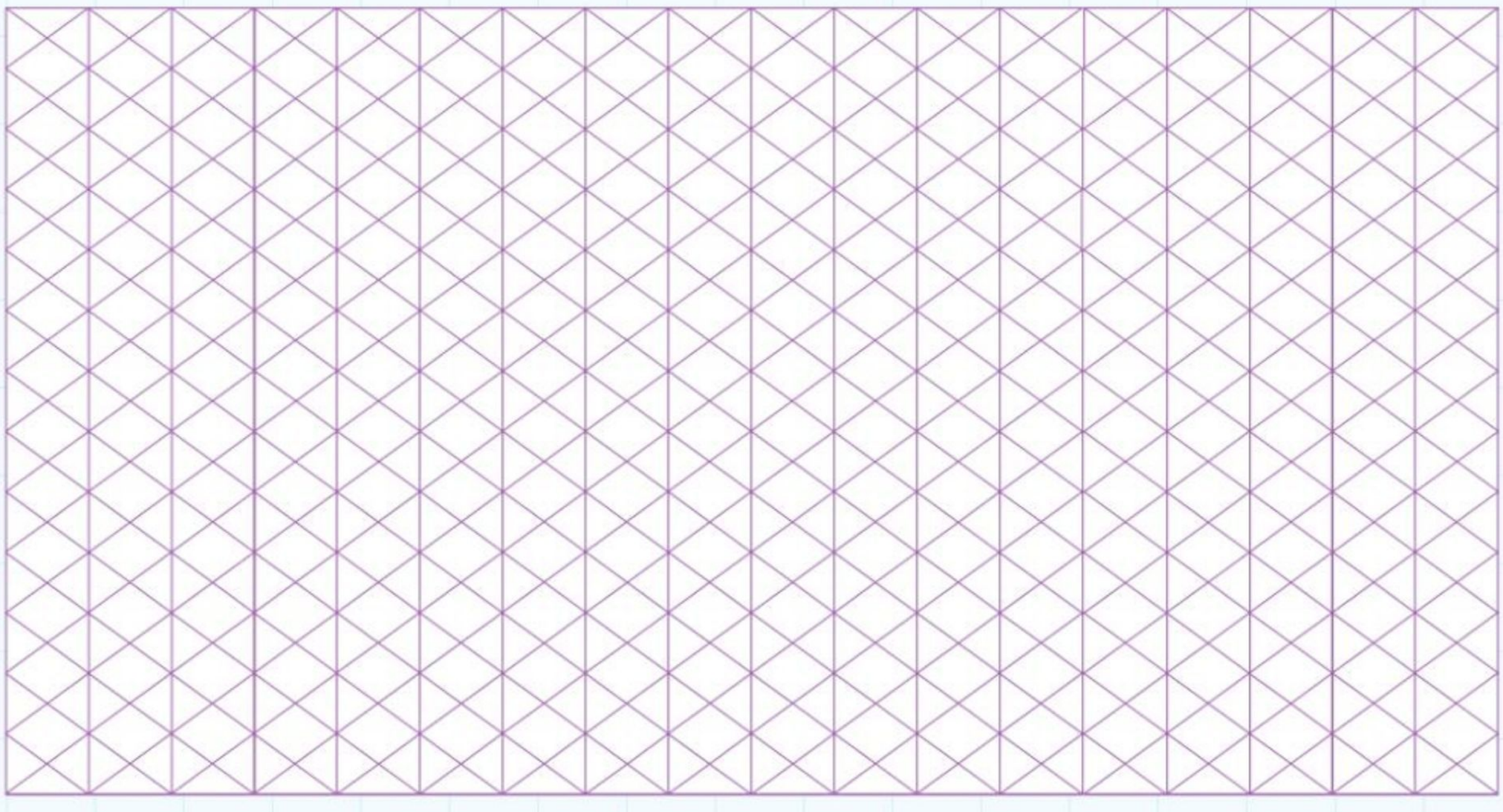


2. Polygons on triangle paper

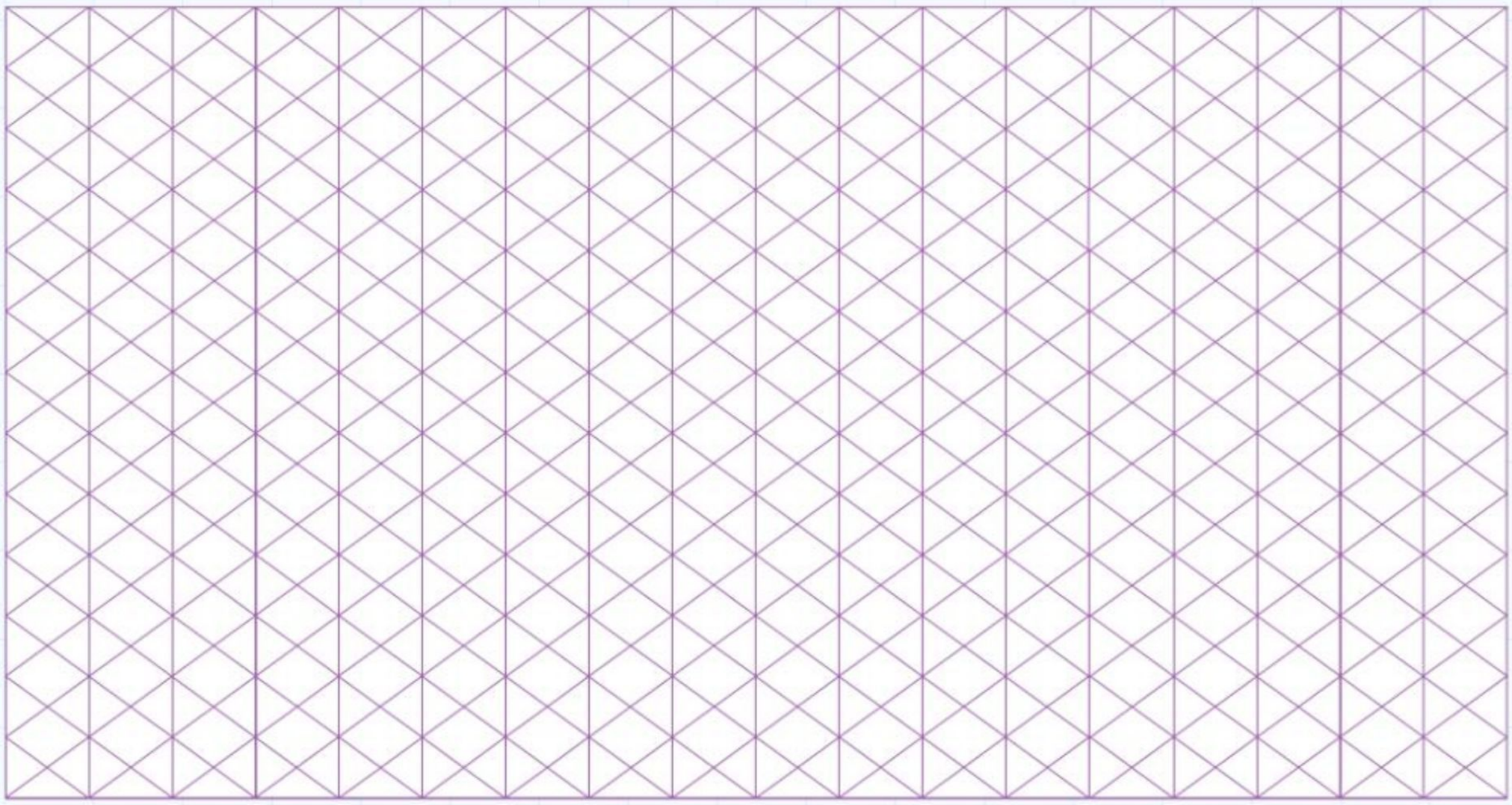
a) On this grid draw five different quadrilaterals.
Use a different colour for each one.



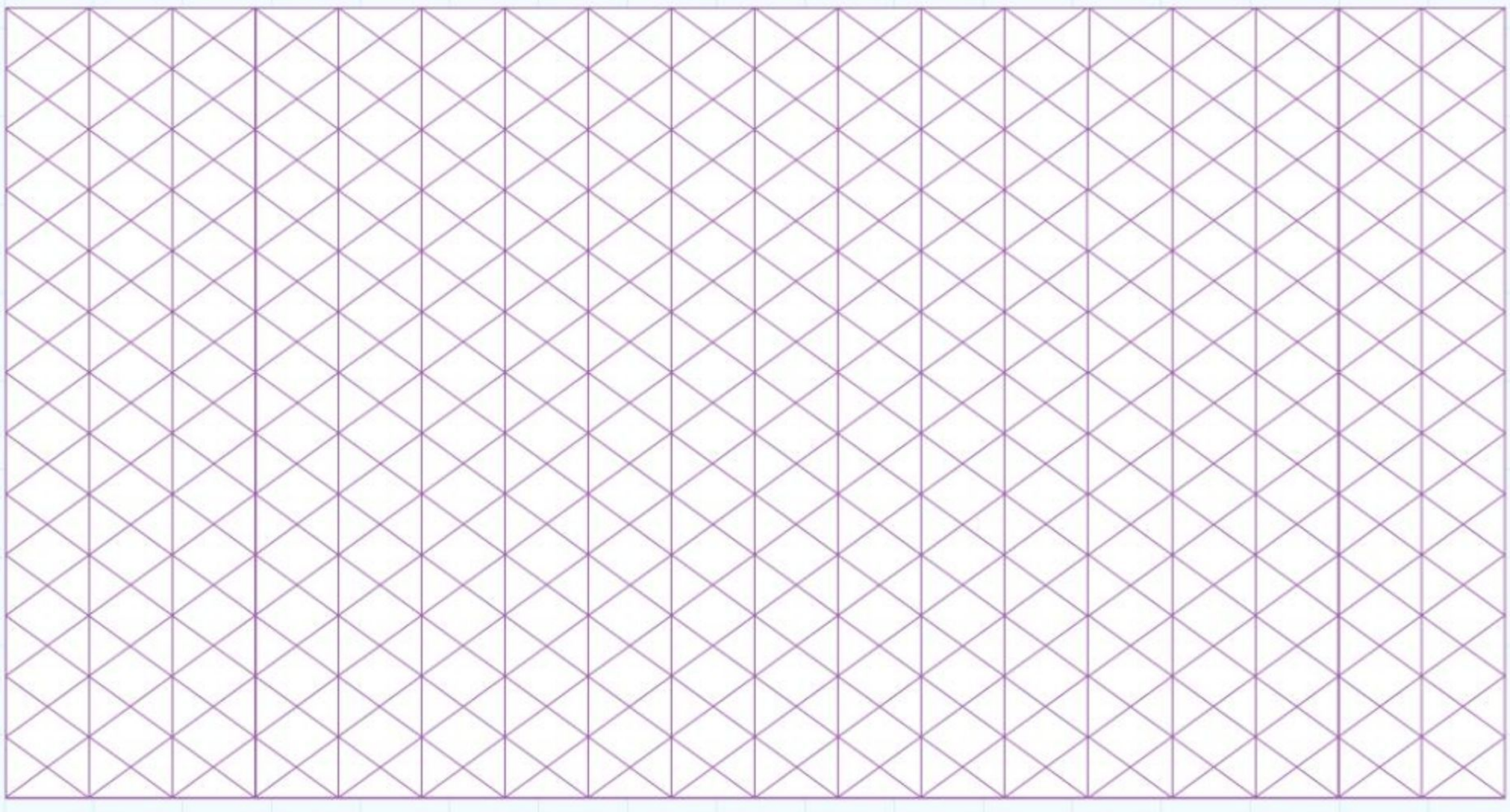
b) On this grid draw four different pentagons.
Use a different colour for each one.



c) On this grid draw three different hexagons. Use a different colour for each one. Only one of the hexagons should be regular.



d) On this grid draw three different octagons.
Use a different colour for each one.



6A Identifying and classifying polygons

Explore

1. Complete this table by drawing sketches of the shapes.

Polygon	Regular	Irregular Example 1	Irregular Example 2
Quadrilateral			
Pentagon			
Hexagon			
Octagon			

Complete these sentences by writing down what makes a shape regular, and what makes a shape irregular:

A regular shape _____

_____

An irregular shape _____

_____

2. Complete this table by sketching examples in the spaces.

	With one right angle	With two right angles	With three or more right angles	With four or more right angles
Quadrilateral				
Pentagon				
Hexagon				
Octagon				

6B Properties of 3D shapes

Discover

1. Find as many 3 dimensional (3D) shapes as you can in the classroom or around the school. Make models of the shapes that you find.

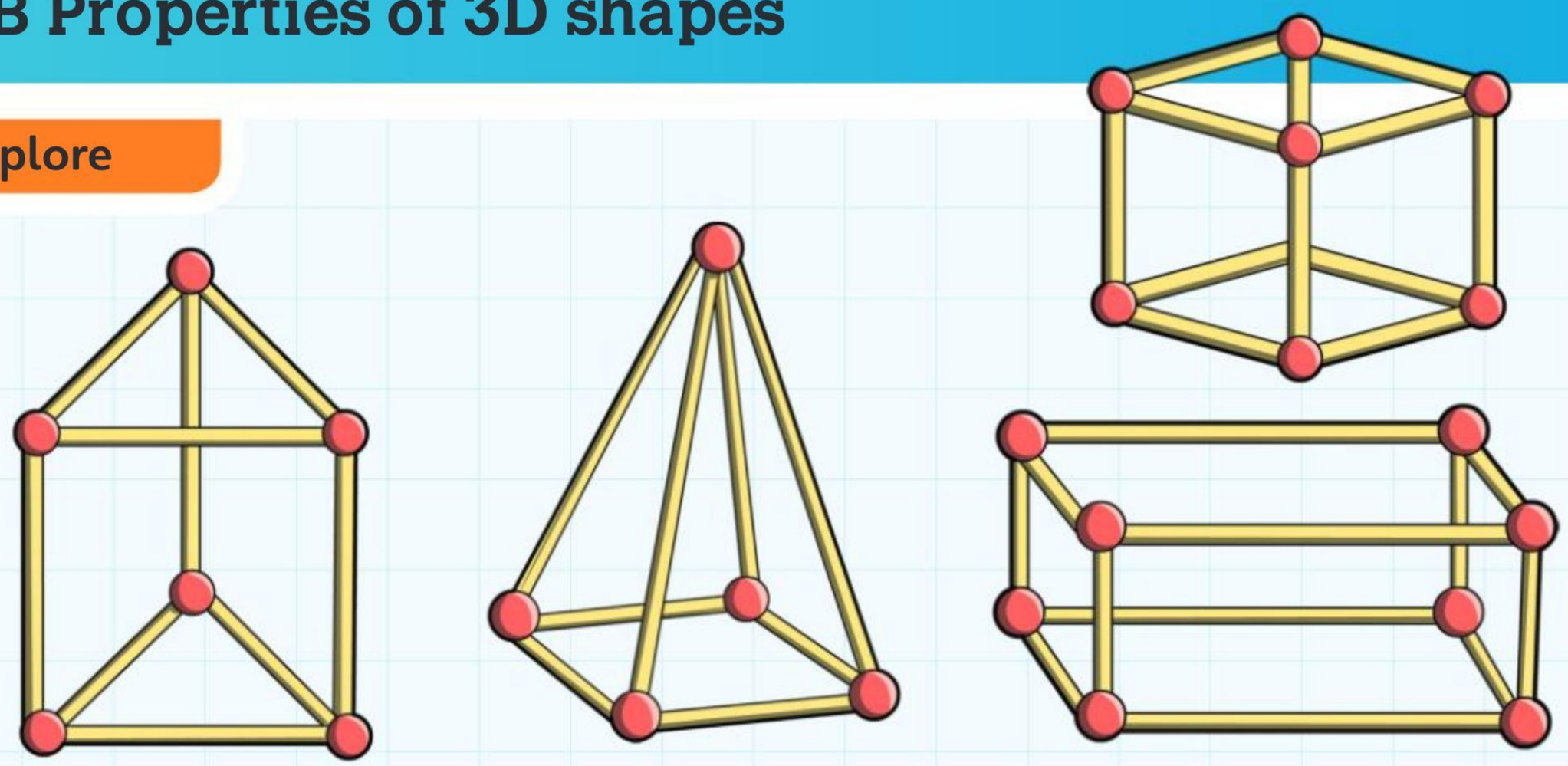
   Below, list six of the 3D shapes you found. Write the name of the shape next to it. Two have been done for you.

Object	3D shape name
Football Keyring	Sphere
Dice	Cube

6B Properties of 3D shapes

Explore

1.



Here are shapes made from artstraws.

You can see a cube, a cuboid, a triangular-based prism, and a square-based pyramid.

Use artstraws to make models of the shapes in your table from last lesson.

When you have made the shape, use your model to complete this table:

Object	Name of Shape	Number of edges	Number of vertices	Shape of Sides
Dice	Cube	12	8	Square

2. Use the shapes you have found to help you complete this sentence.

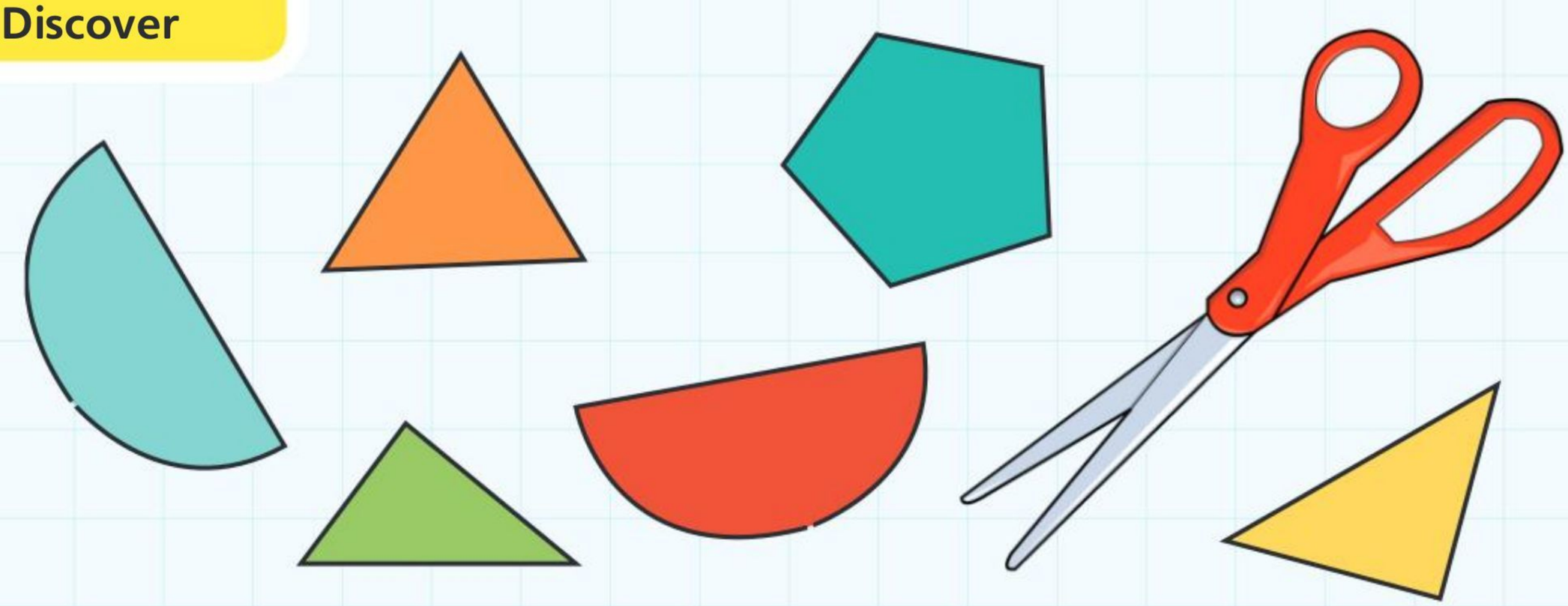
The difference between a prism and a pyramid is _____

_____

_____

6C Draw and complete 2D shapes

Discover



A student has made three triangles, two semi-circles, and a pentagon by folding and cutting paper.

Fold and cut paper to make:

a) three different triangles

b) three different quadrilaterals

c) two different pentagons

d) two different hexagons

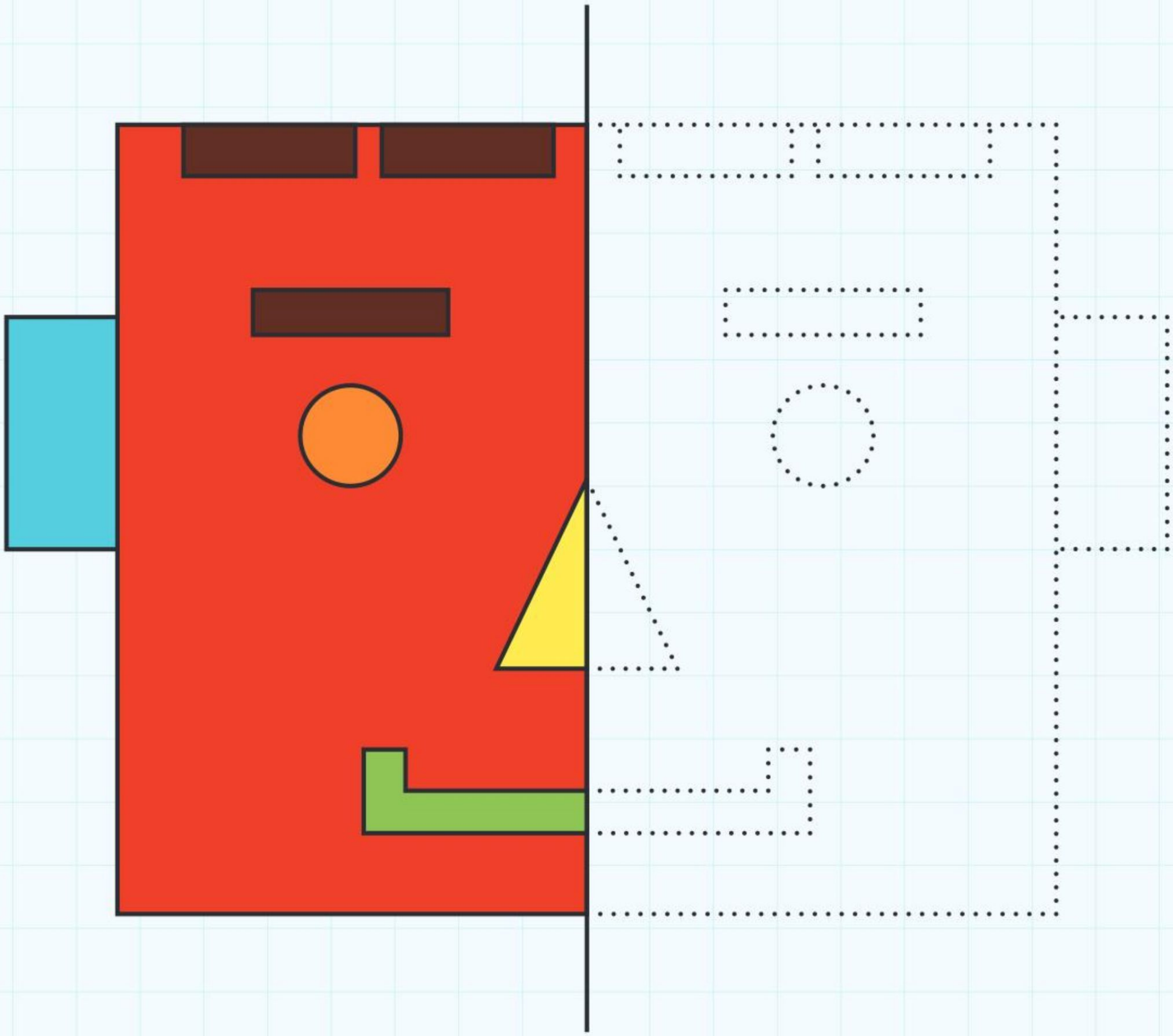
e) two different octagons

Make sure that each shape has a line of symmetry.

Draw them on the squared paper below and draw a mirror line through each shape to show the line of symmetry.

6C Draw and complete 2D shapes

Explore



Ask a friend to draw half a pattern on the left side of the mirror line.

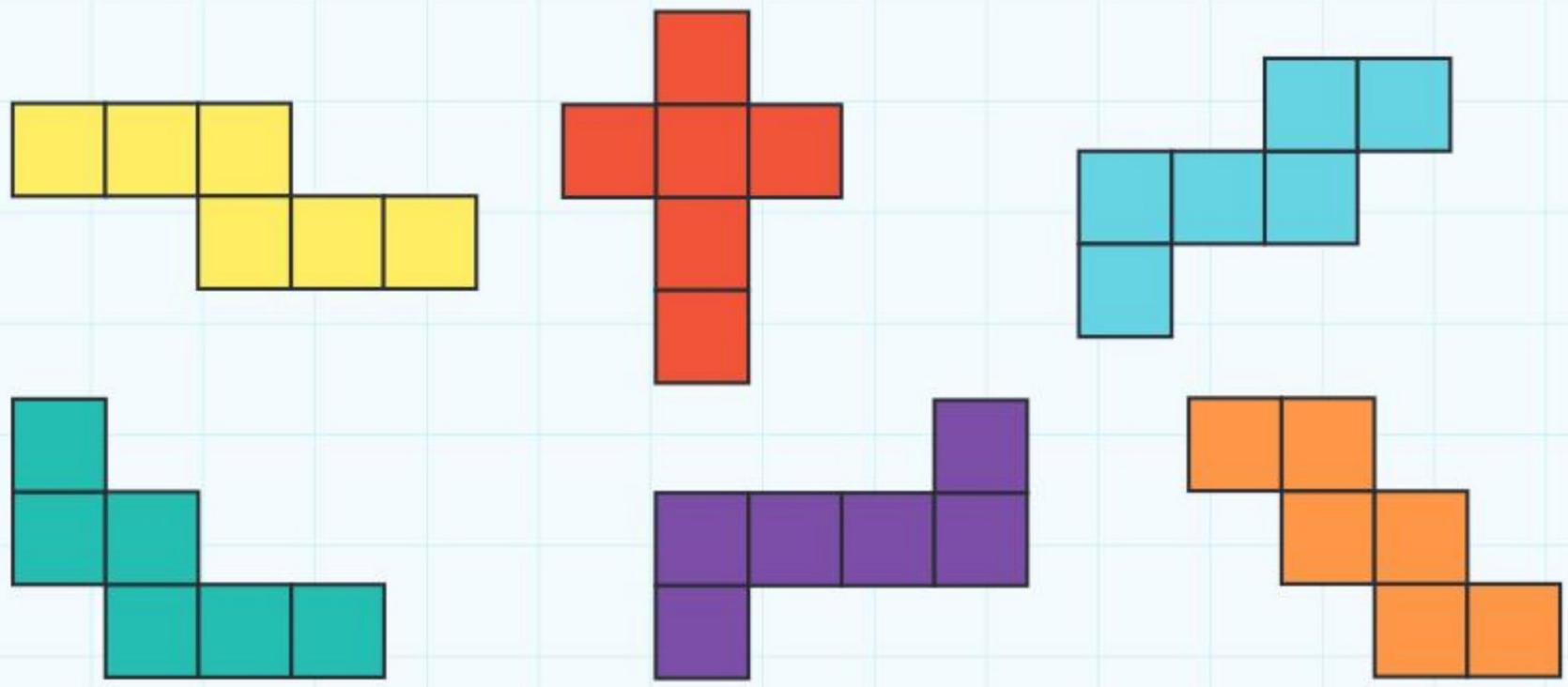
Complete the pattern by drawing the mirror image on the right-hand side.

Repeat this with three other friends.

Connect

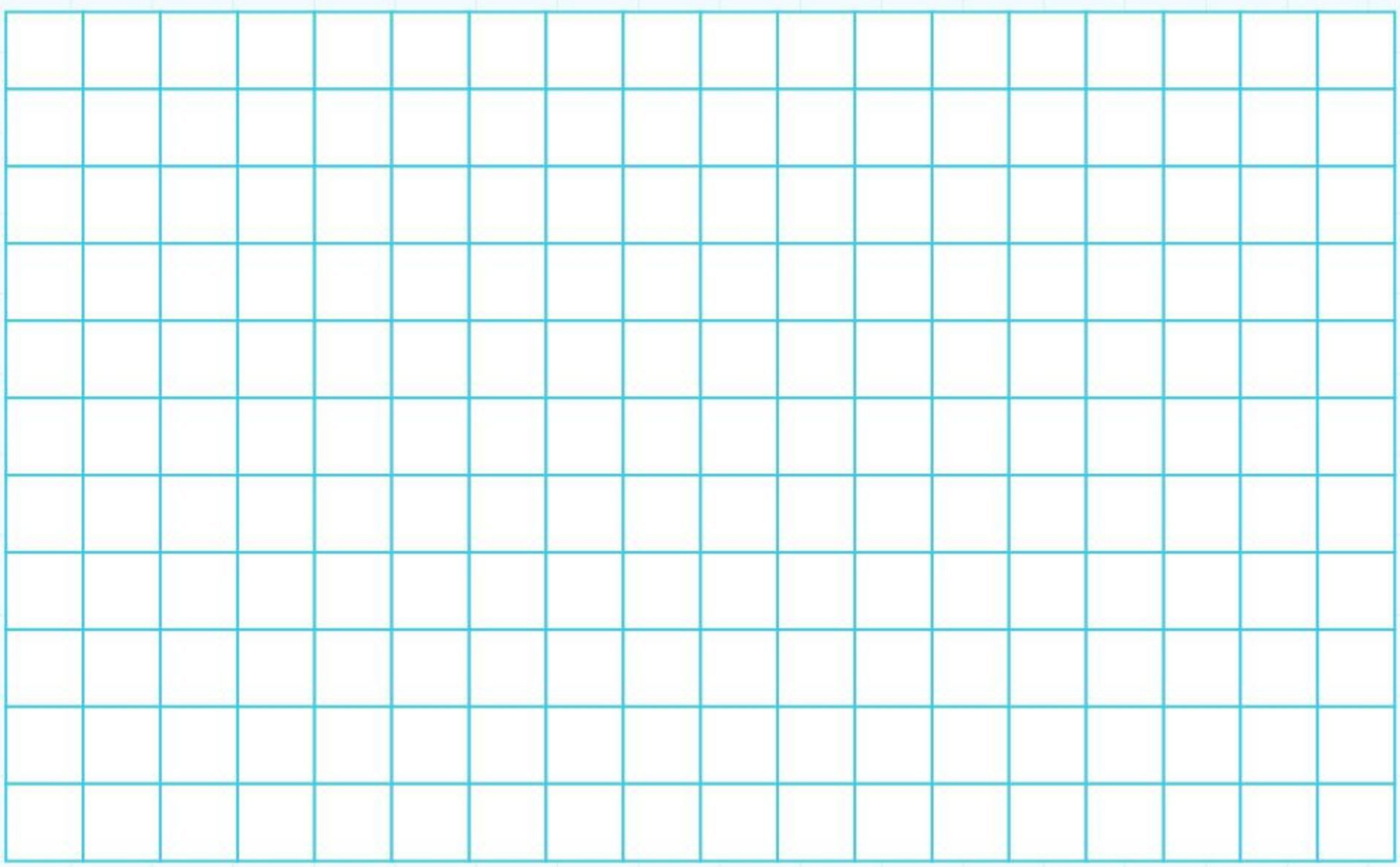
The net of a cube is made up of six squares joined together along a side.

Here are some examples:



How many different arrangements of six squares can you find?

Draw them below:

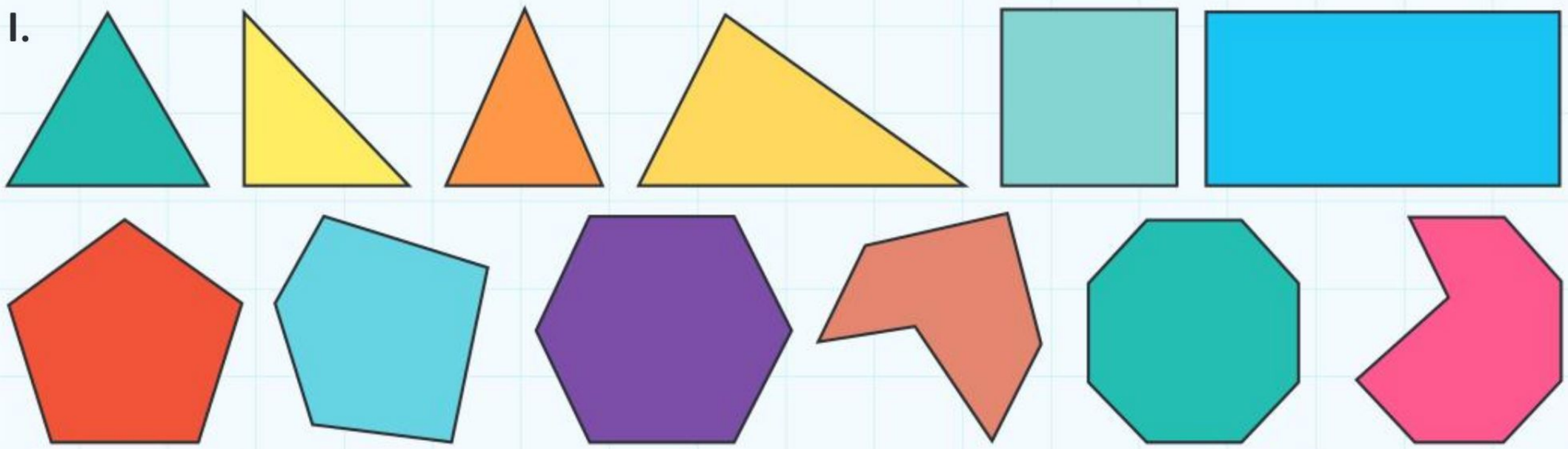


Circle the ones which will fold up to make a cube.

Review

Name the shapes below. Write their names in the correct section of the Carroll diagram.

1.

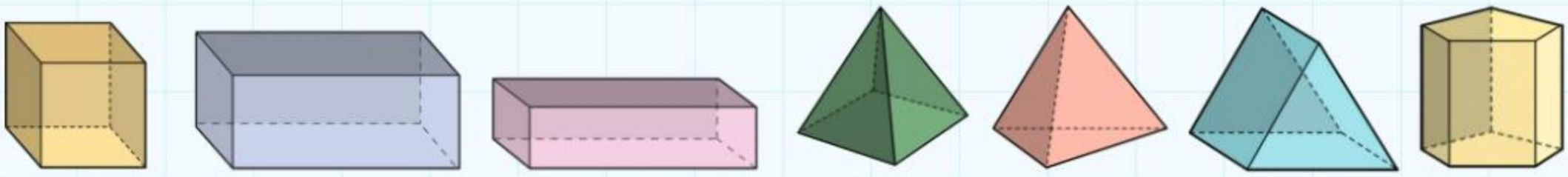


	Even vertices	Odd vertices
Regular		
Irregular		

2. For the same 12 shapes shown in question 1, write their names in the correct sections of this *different* Carroll diagram.

	Even number of sides	Odd number of sides
Line symmetry		
No line symmetry		

3. Name the 3D shapes below. Write their names in the correct section of the Carroll diagram.



	Even flat faces	Odd flat faces
Even vertices		
Odd vertices		

7 Position and Movement

Engage

What can you see?

7A Using a grid to describe position

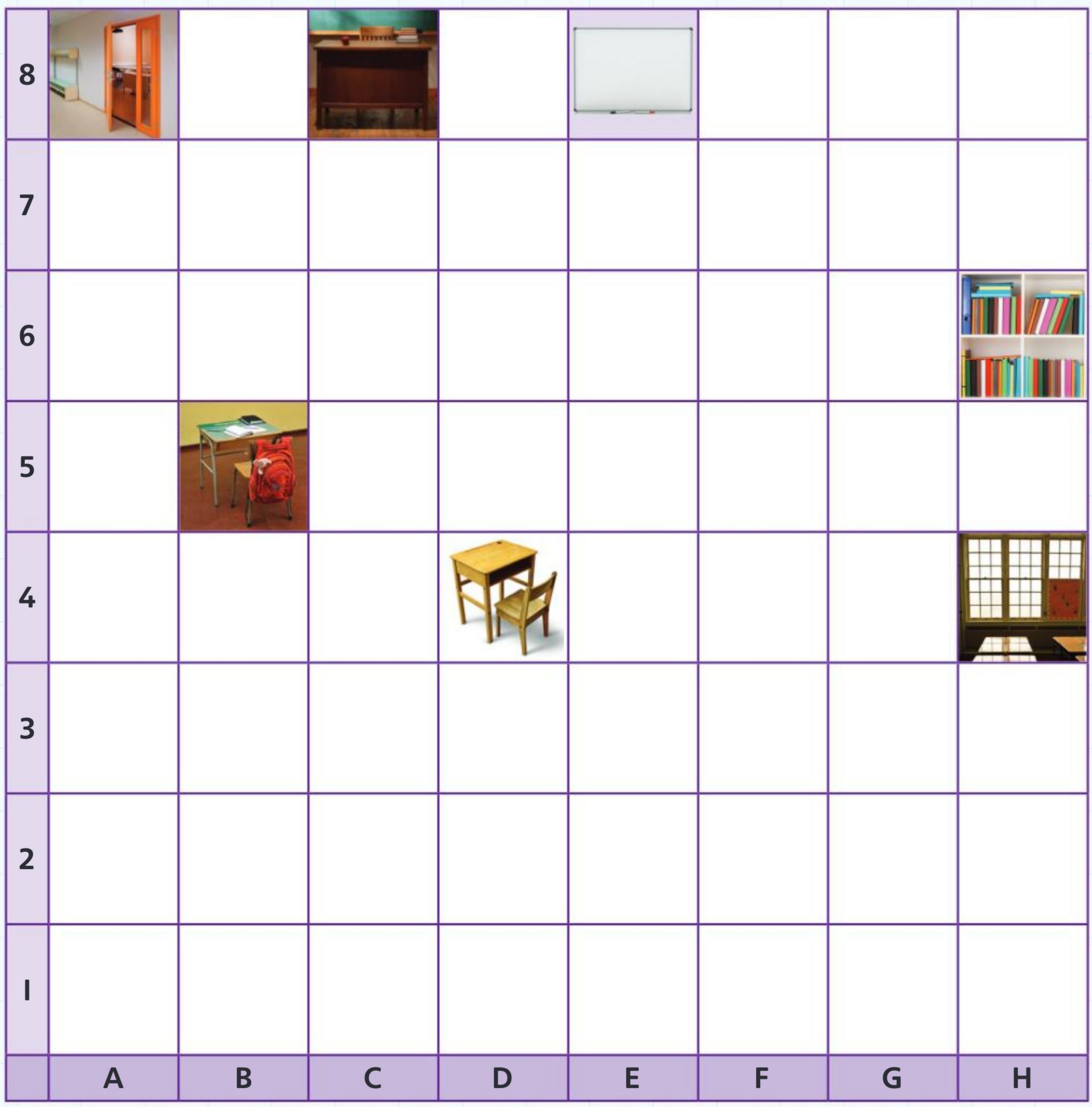
Discover

1. This **grid** shows some of the things in my classroom.
   The **rows** are labelled with numbers and the**columns** are labelled with letters.

   The teacher's desk is in square C8.

   The window is in H4.

   To get from the teacher's desk to the window I need to move 5 columns across to the right and 4 columns down.



2. Draw ten things from your classroom in this grid.

10										
9										
8										
7										
6										
5										
4										
3										
2										
1										
	A	B	C	D	E	F	G	H	I	J

Write four sets of directions to complete these sentences.

To get from _____ to _____ you need to move across to the right/left _____ squares and up/down _____ squares.

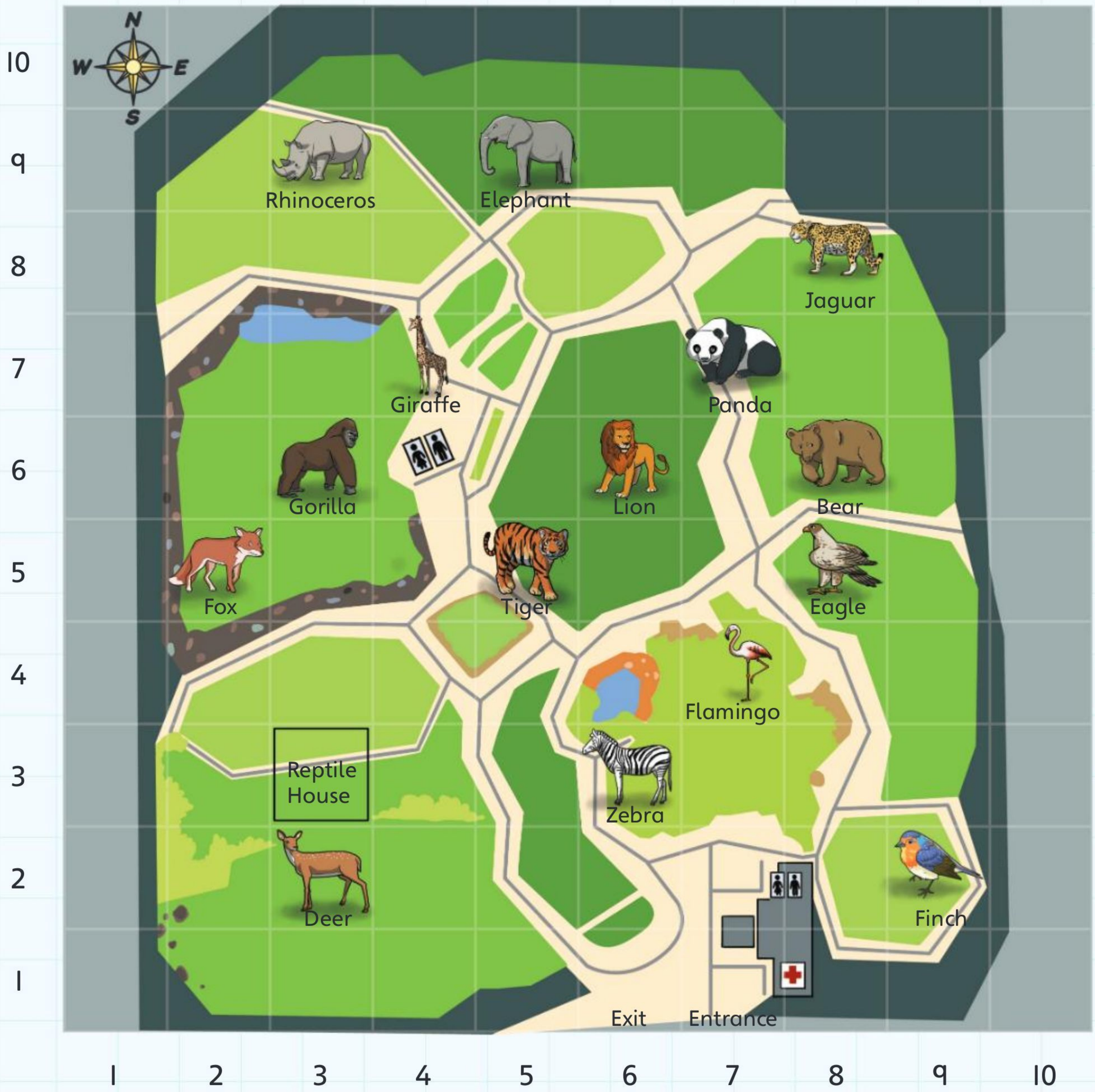
To get from _____ to _____ you need to move across to the right/left _____ squares and up/down _____ squares.

To get from _____ to _____ you need to move across to the right/left _____ squares and up/down _____ squares.

To get from _____ to _____ you need to move across to the right/left _____ squares and up/down _____ squares.

7A Using a grid to describe position

Explore



Complete this table by filling in the row number and column number to show where the animals' cages are.

	Row	Column
Reptile House		
Eagle		
Entrance		
Rhinoceros		
Elephant		
Gorilla		
Flamingo		
Finch		
Jaguar		
Panda		

Write 10 sentences which describe the position of an animal cage using **compass points** .

You should use each of **North, South, East, and West** at least once in your answers.

Two examples have been done for you.

Example: The Panda is 6 rows North of the entrance.

Example: The Giraffe is 3 columns West of the Panda.

1. _____

2. _____

3. _____

4. _____

5. _____

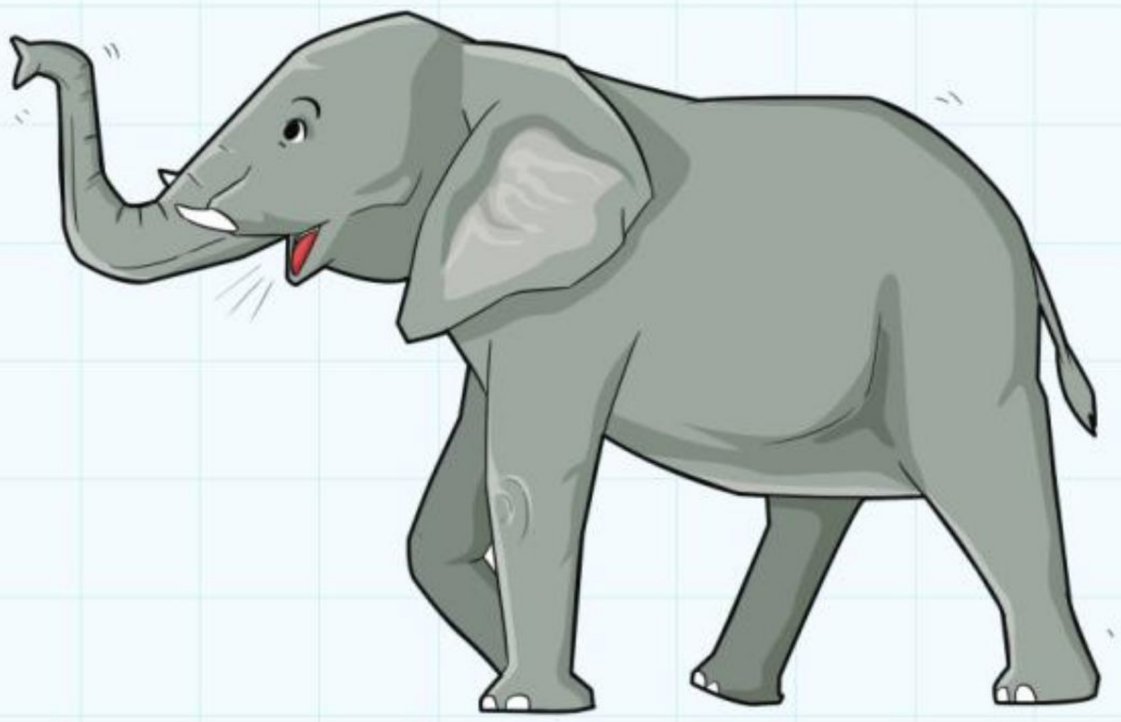
6. _____

7. _____

8. _____

9. _____

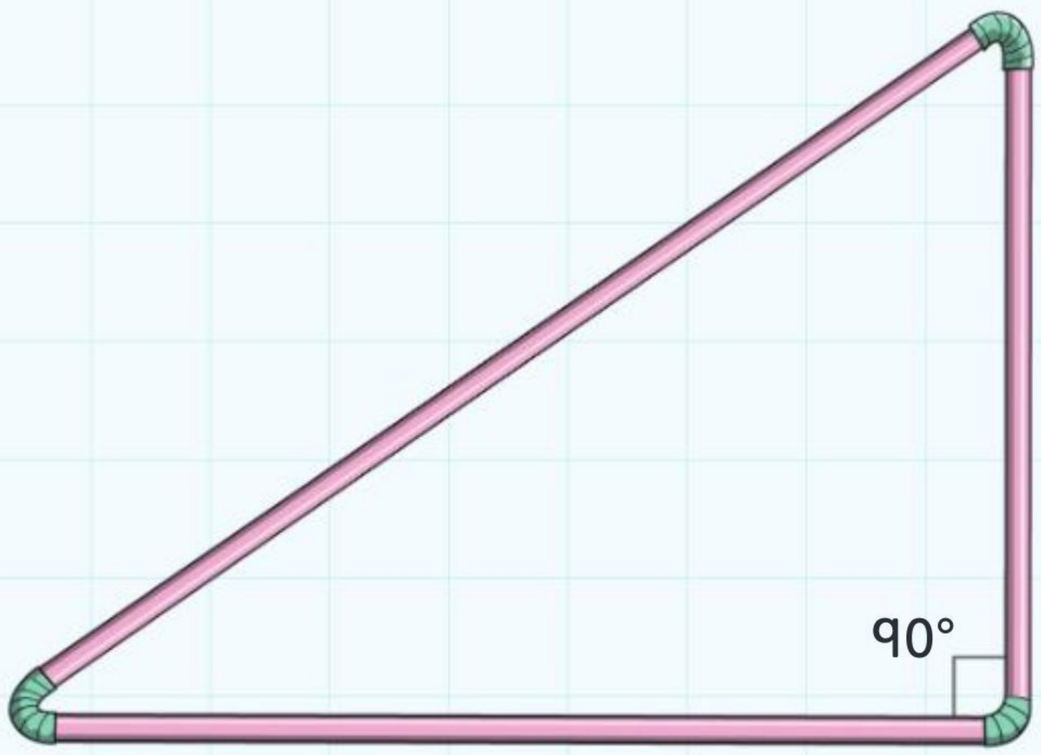
10. _____



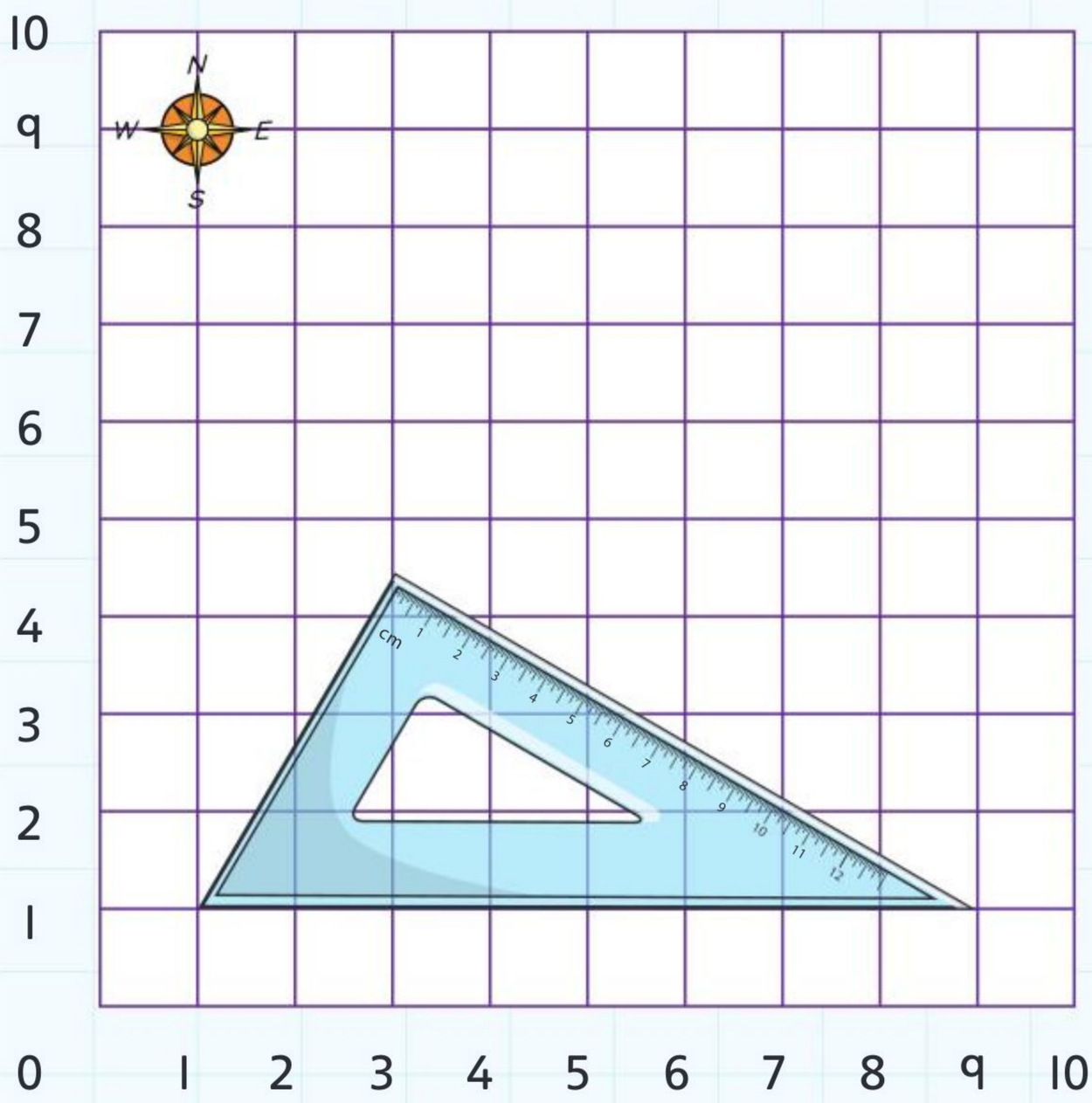
7B Drawing right angles and comparing angles

Discover

Make an angle measurer like the one below.



Check that it is a right angle using a set square.



Use your angle measurer to find five things in your classroom which make a right angle.

Write and draw them in this table.

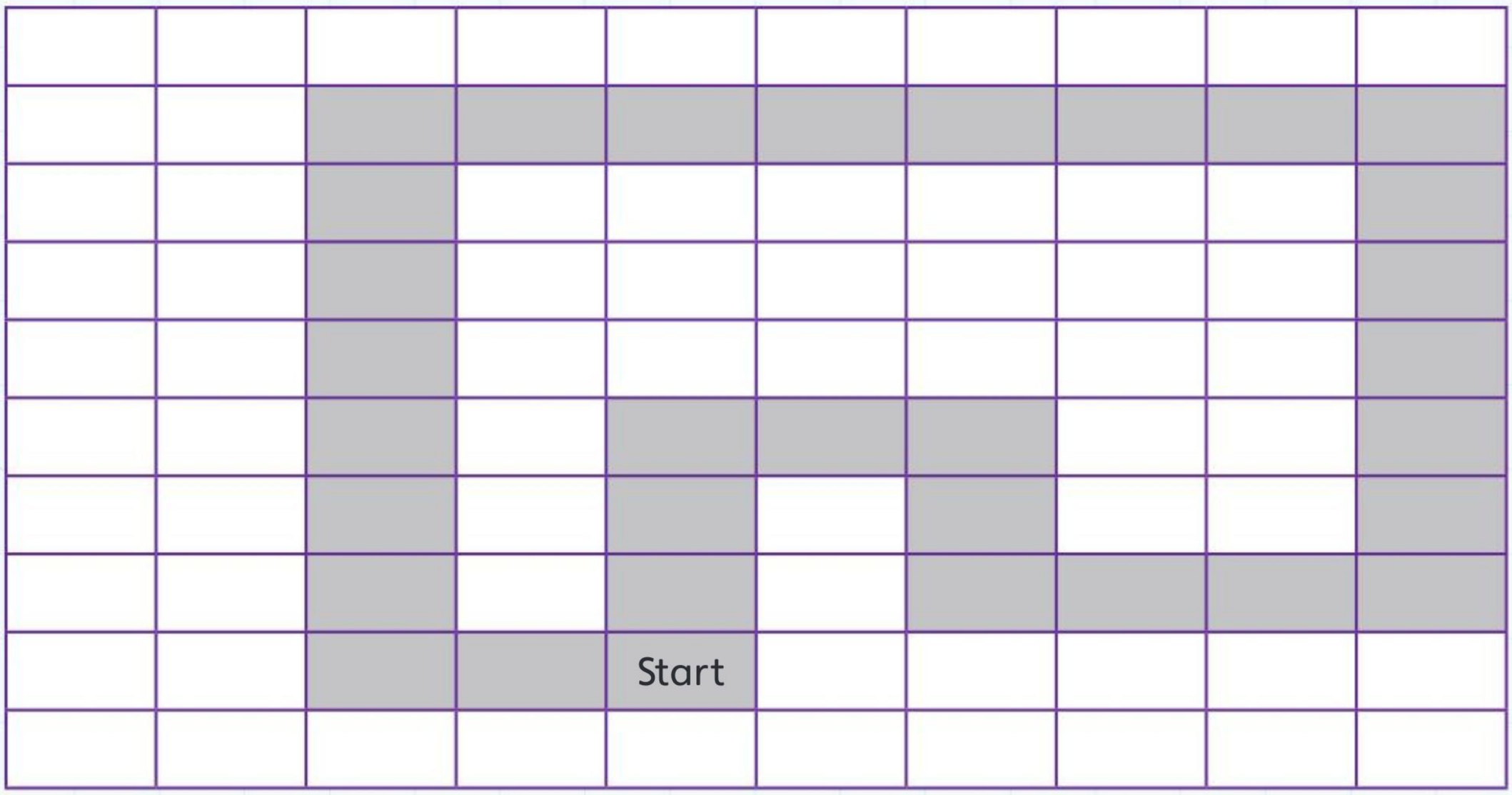
You can use a set square to draw the right angle in each object.

Object	Picture
Pair of Scissors	

7B Drawing right angles and comparing angles

Explore

Directions



Complete these instructions to describe the journey:

Directions

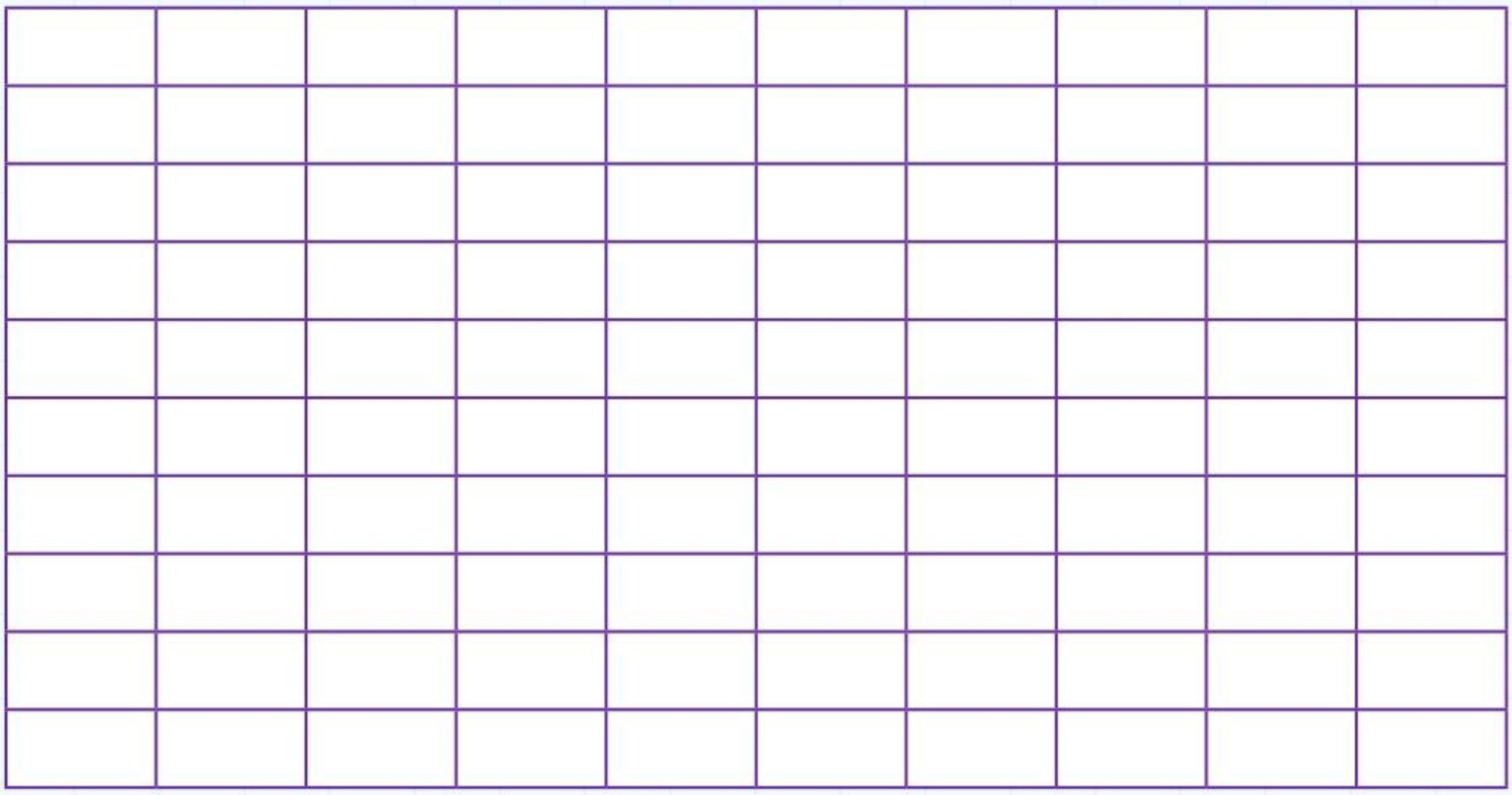
- Take 3 steps North
- Turn clockwise through a right angle
- Take 2 steps East
- Turn clockwise through a right angle
- Take 2 steps South
-
-
-
-
-
-

-
-
-
-

Ask a friend to draw a journey on this grid.

Write directions to travel from the start to the finish.

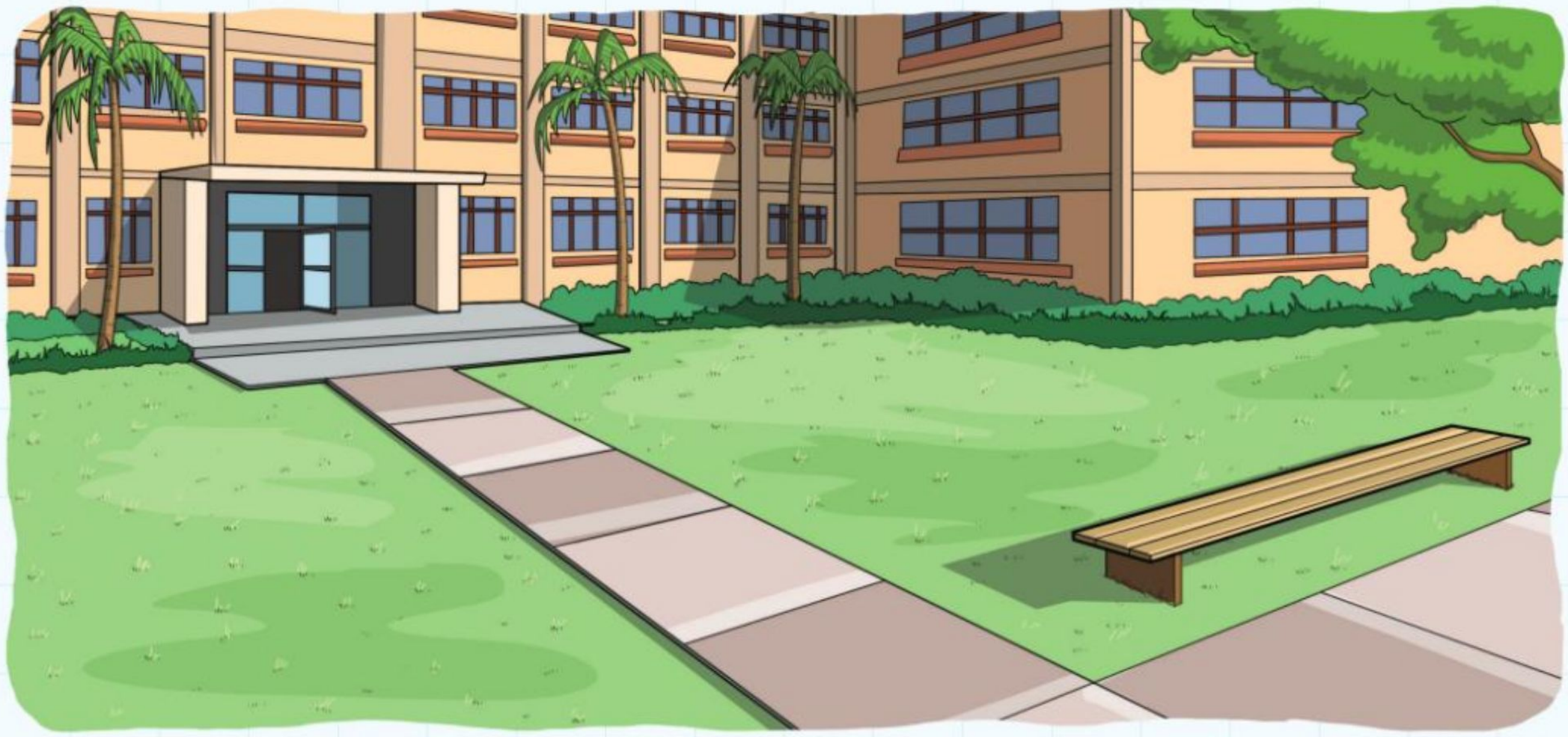
The start and the finish can be in different places if you want.



Directions

7 Position and movement

Connect



These are maths questions:

- ‘Estimate the height of the palm trees’
- ‘How many people could sit on the bench?’

Create your own maths trail. You need:

- A map of your school grounds
- Measuring tapes and metre rules
- A compass
- Squared paper

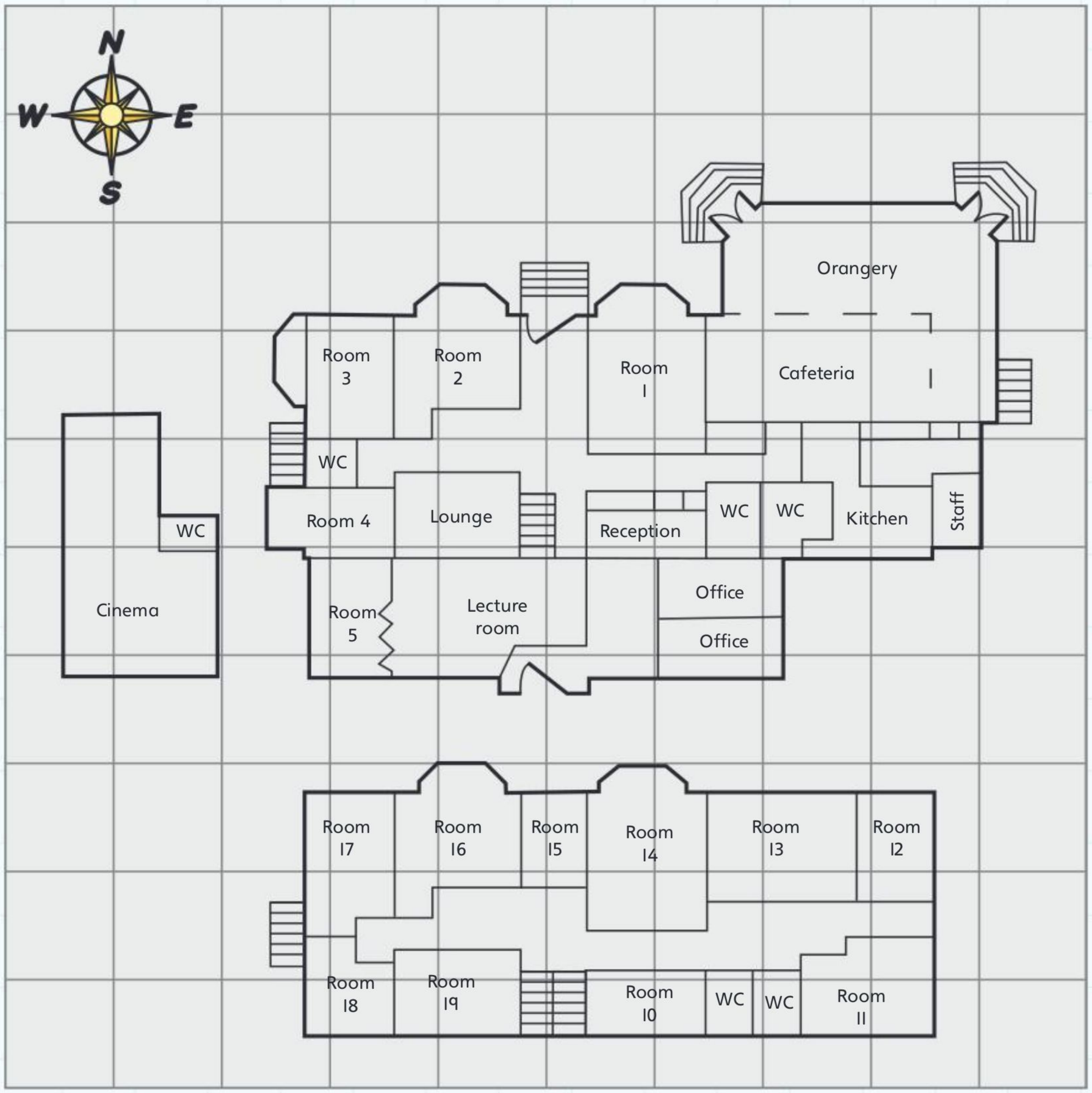
Use your map.

Find a place that you can ask a maths question about.
Write down a maths question about this place.

Find a different place that you can ask a maths question about.
Write down a maths question about this place.

Write directions to get from one place to the next place you’ve written a question about.

Review


N
W
E
S
Orangery
Room 3
Room 2
Room 1
Cafeteria
WC
Room 4
Lounge
Reception
WC
WC
Kitchen
Staff
WC
Cinema
Room 5
Lecture room
Office
Office
Room 17
Room 16
Room 15
Room 14
Room 13
Room 12
Room 18
Room 19
Room 10
WC
WC
Room 11

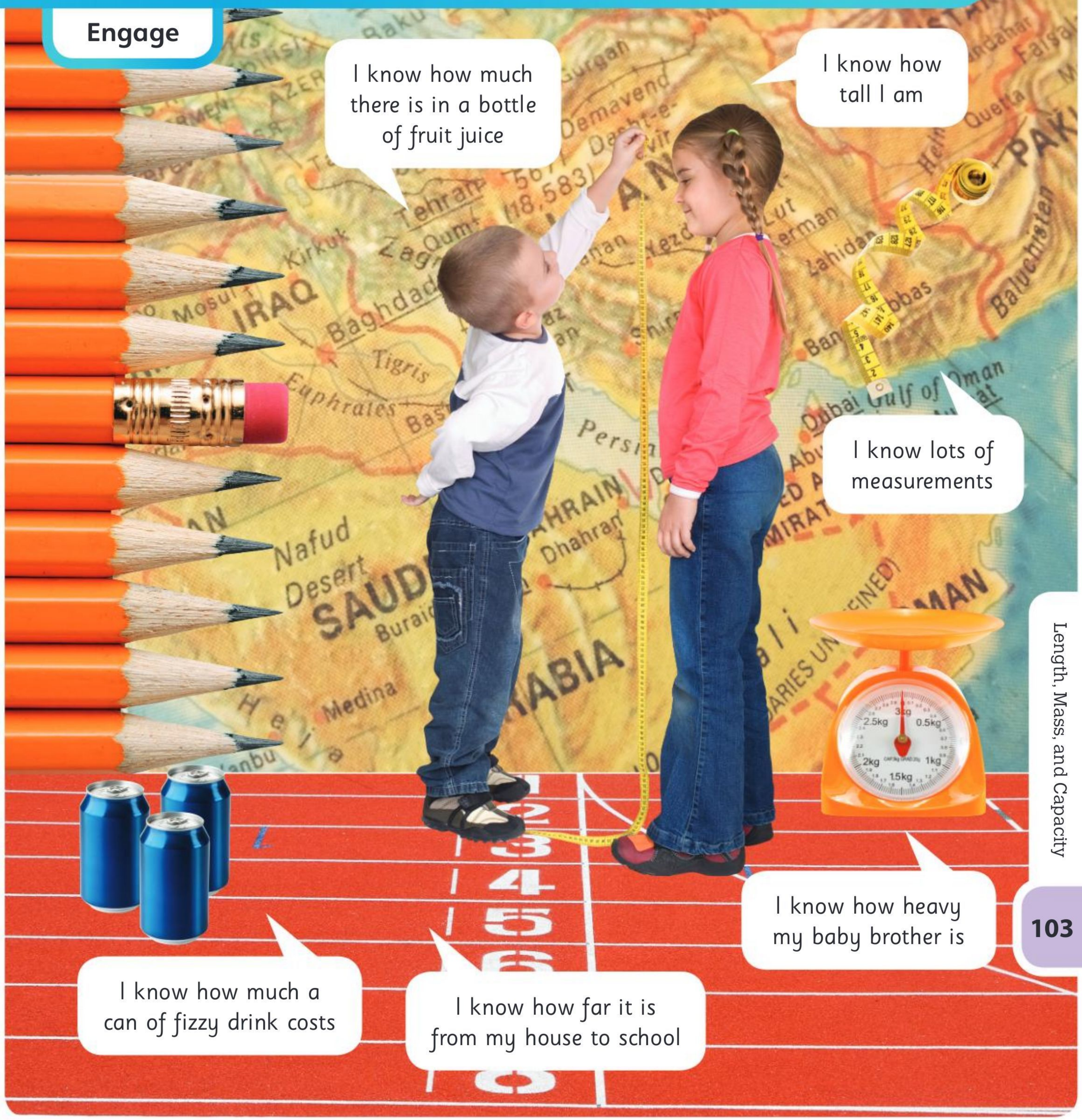
Draw a plan of your school on the grid below.

How do you get from the school entrance to your classroom?
Write down directions.

-
-
-
-
-
-
-
-

8 Length, Mass, and Capacity

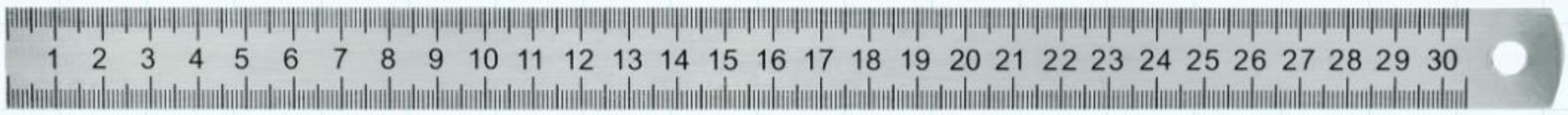
Engage



8A Choosing appropriate units and converting units

Discover

1. Using chalk, try to draw a 1 metre-long line on the ground outside without using a ruler. Now measure your line. How long is the line in cm?



2. Estimate 1 litre of water by filling a non-marked container. Now measure the volume of water that you have by using a measuring cylinder. How much water was there in millilitres?

3. Collect books so that, in total, you think they have mass of 1 kilogram. Now measure their mass using scales. What is their mass in grams?

4. Complete this table. Look at the units shown in column 1.
For each unit, write down three things you would measure using this unit.
Two examples have been done for you.

Kilometres	The distance from school to my house		
Metres			
Centimetres	The length of a pen		
Kilograms			
Grams			
Litres			
Millilitres			

8A Choosing appropriate units and converting units

Explore

1. Choose three places that are more than 1 km from your school, and three places that are less than 1 km from your school. Complete the following table, using the places that you have chosen.

	Distance from school (km)	Distance from school (m)
_____ is more than 1km from school		
_____ is more than 1km from school		
_____ is more than 1km from school		
_____ is less than 1km from school		
_____ is less than 1km from school		
_____ is less than 1km from school		

2. Choose three objects that are longer than 1 m, and three objects that are shorter than 1 m. Complete the following table, using the objects that you have chosen.

	Length (m)	Length (cm)
_____ is longer than 1m		
_____ is longer than 1m		
_____ is longer than 1m		
_____ is shorter than 1m		
_____ is shorter than 1m		
_____ is shorter than 1m		

3. Choose three objects that are heavier than 1 kg, and three objects that are lighter than 1 kg. Complete the following table, using the objects that you have chosen.

	Weight (kg)	Weight (g)
_____ is heavier than 1 kg		
_____ is heavier than 1 kg		
_____ is heavier than 1 kg		
_____ is lighter than 1 kg		
_____ is lighter than 1 kg		
_____ is lighter than 1 kg		

4. Choose three objects that have a volume greater than 1 litre, and three objects that have a volume less than 1 litre. Complete the following table, using the objects that you have chosen.

	Volume in litres	Volume in millilitres
_____ holds more than 1 litre		
_____ holds more than 1 litre		
_____ holds more than 1 litre		
_____ holds less than 1 litre		
_____ holds less than 1 litre		
_____ holds less than 1 litre		

8B Solving word problems involving measures

Discover

Write four word problems for your friend to solve.
Each problem must include the question shown underneath each picture.
Use the pictures to help you.

1.

'How far is that in metres?'

Word problem for my partner:

2.

'What is the total volume in litres?'

Word problem for my partner:

3.

'What is the total weight in kg?'

Word problem for my partner:

4.

'How much change from 1 dollar does she receive?'

Word problem for my partner:

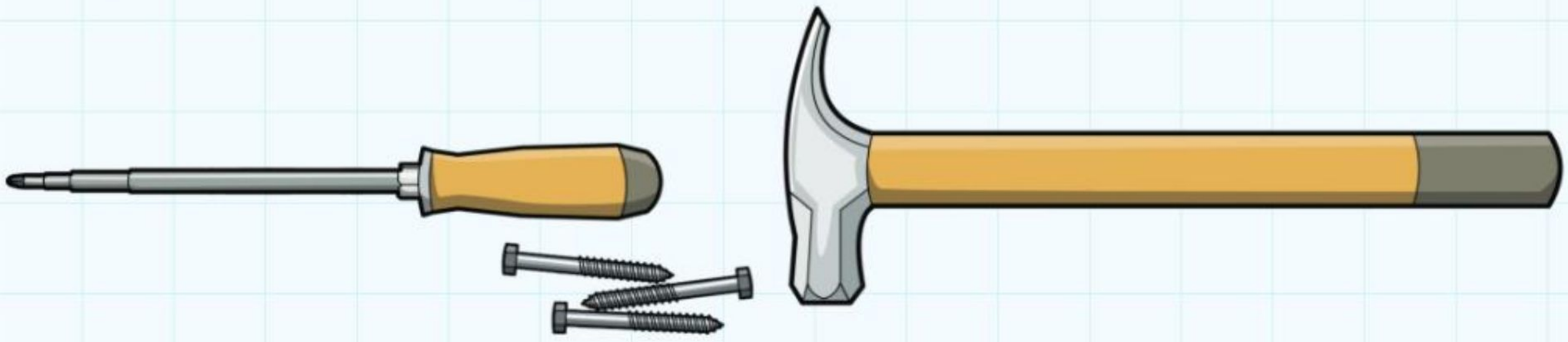
8B Solving word problems involving measures

Explore

Solve the following word problems.

1. The screwdriver in my toolbox is 18 cm long.

   My hammer is 6 cm longer than the screwdriver, and the screws are 2 cm long.



   a) What is the length of the hammer? _____

   b) How much longer is the screwdriver than one of the screws? _____

   c) How many screws could I lay end to end along the hammer? _____

2. I have three books. They weigh 350 grams, 225 grams, and 375 grams.

   My parcel must weigh less than 1 kg.

   a) What is the total weight of the three books? _____

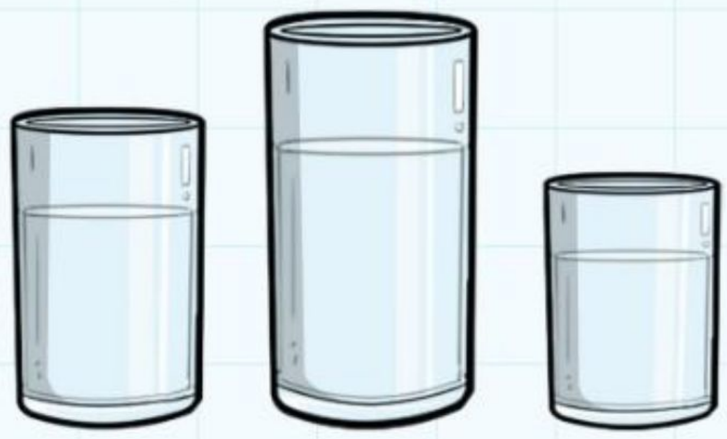
   b) Is this more or less than 1 kg? By how much? _____

3. I should drink 3 litres of water per day.

At breakfast I drink 750 millilitres.

At lunchtime I drink I litre.

During the afternoon I drink 750 millilitres.



a) How much have I drunk in total? _____

b) Is this more or less than 3 litres? _____

By how much? _____

4. I bought two different items and received 24 cents change from I dollar.

How much did I spend?

a) How much did I spend altogether? _____

b) How much might each item have cost? Write down five different possibilities:

-
-
-
-
-

8C Constructing accurately using measures

Discover

Select two different containers which hold approximately 1 litre.

Draw them below:

Use a measuring jug.

Draw a scale on each container and use each one to measure some water.
Find how much water you have, to the nearest 100 millilitres.

Draw the jugs and their scales below:

8C Constructing accurately using measures

Explore

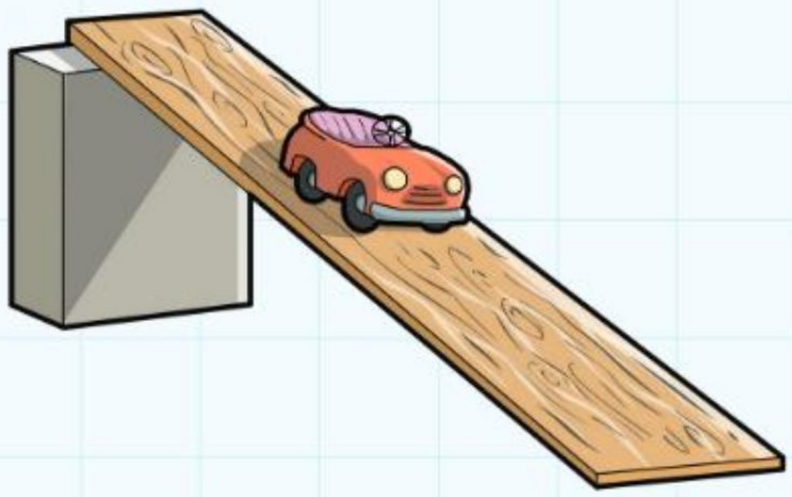
Find four different objects in the classroom. Measure them to the nearest cm, and draw them accurately in the space below.

An example has been drawn for you:

This pencil is 8 cm long.

Connect

Let a toy car go at the top of a ramp. Measure the distance it travels.



Change the height of the ramp by using books.

Fill in the table.

	Height of ramp	Distance travelled
1 book		
2 books		
3 books		
4 books		
5 books		

What did you find out?

Repeat the experiment. This time, make the car heavier by adding plasticine.

Use the same height of ramp each time.

	Weight of car	Distance travelled
Car 1		
Car 2		
Car 3		

What did you find out?

Review

On these two pages create a poster.

Use the following vocabulary:

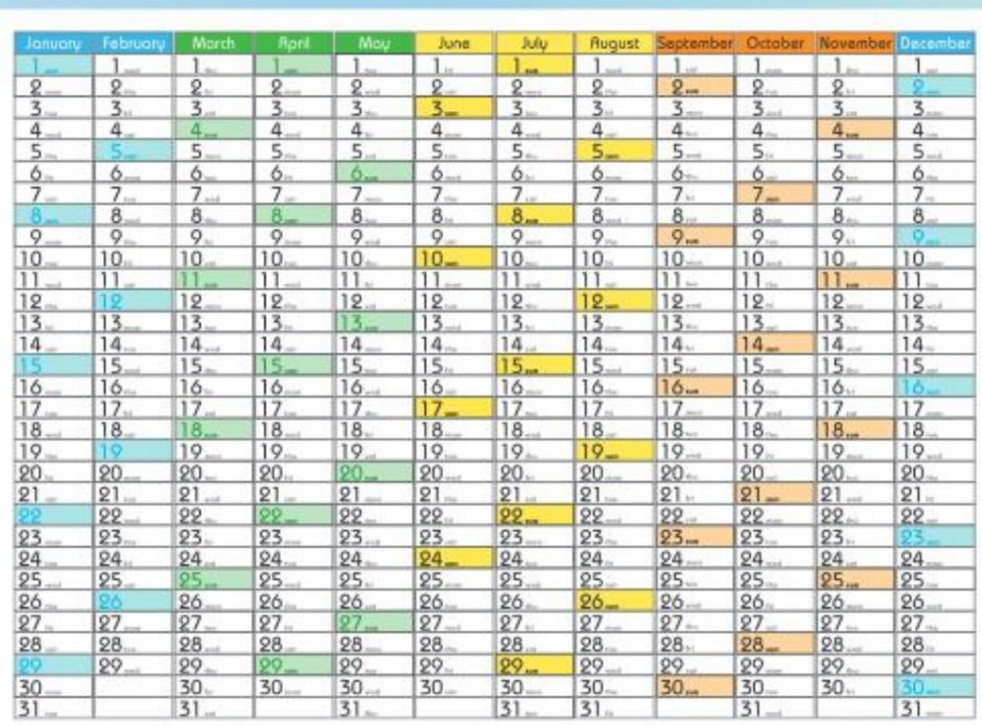
- Scale, division, approximately
- Length, width, height, depth
- Long, short, thick, thin, longest, shortest, highest, lowest
- Kilometre, metre, centimetre
- Heavy, light, heavier, lighter
- Kilogram, gram
- Capacity, contains, empty, full
- Litre, millilitre

9 Time

Engage

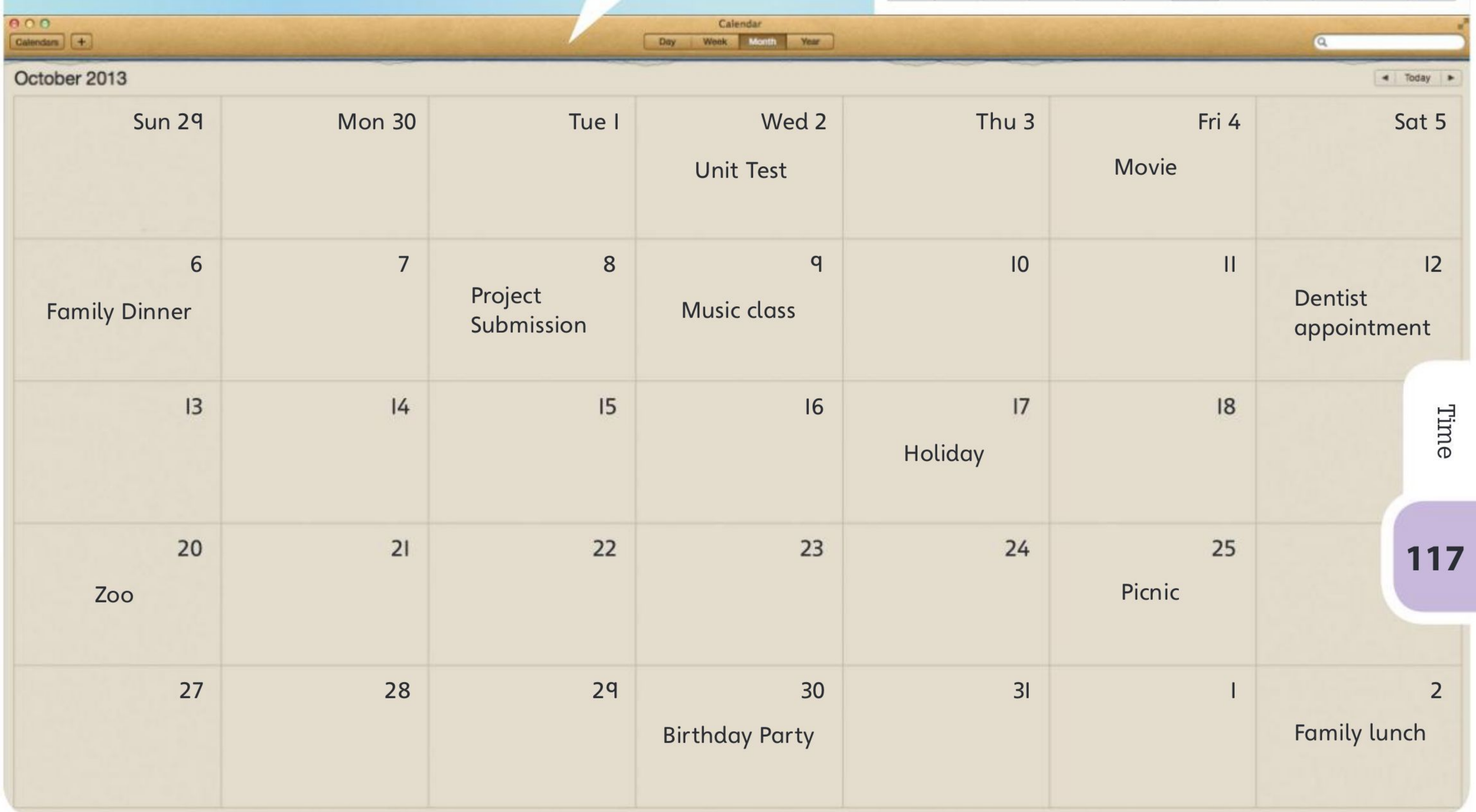
I know the time when I get up

I know how many days it is until my holiday



I know how long my favourite TV programme lasts

I know when my birthday is



9A Knowing the relationship between units of time

Discover

1. With a friend, choose five different activities that you can do in the classroom.

   Some should take less than a minute and some should take more than a minute.

   Time how long your activity takes and fill in the table.

   Two examples have been done for you.

Name	Activity	Time
Me	Stand on one leg	2 minutes 17 seconds
My friend	Hop across the classroom	42 seconds

2. Write down five things that will happen in the future.

   Complete the table by writing down how long you will wait before this event happens.

Event	Time before this happens
My Birthday	5 weeks and 3 days

3. Write down five people whose ages you know.

Complete this table to show the difference in ages between yourself and each person.

Person	Age difference
My little sister	3 years younger than me
My Mum	28 years older than me

9A Knowing the relationship between units of time

Explore

1. Join the question to the correct answer

How many seconds in a minute?	12
How many days in a week?	24
How many months in a year?	365
How many hours in a day?	60
How many weeks in a year?	Between 28 and 31
How many minutes in an hour?	7
How many days in a year?	Between 4 and 5
How many days in a month?	60
How many weeks in a month?	52

2. Answer the following word problems.

a) I run for 5 minutes. How many seconds is that?

_____

b) My birthday is in 3 weeks. How many days is that?

_____

c) In 4 days I am going on holiday. How many hours is that?

_____

d) My sister is exactly 3 years old. How many weeks has she been alive?

_____

e) I have been playing football for 36 months. How many years is that?

_____

3. Make up two word problems like those above for your friends to solve.

a) _____

_____

b) _____

9B Reading the time to the nearest 5 minutes

Discover

Complete this table about your daily routine for a schoolday.

Write down what you might be doing at each time and draw the times on the clocks.

Time	What I might be doing	Draw the clock hands	Write the time in a digital format
7.05 am	Waking up		
9.00 am			
10.15 am			
10.55 am			
12.45 pm			
2.35 pm			
3.00 pm			
5.05 pm			
6.50 pm			
8.35 pm			

9B Reading the time to the nearest 5 minutes

Explore

Match these statements to the correct times.

I eat my lunch at 12.45 pm	
I get up at 7.35 am	
I go to bed at half past eight in the evening	
I have a meal with my family at quarter to six in the evening	
School finishes at 2.35 in the afternoon	
School starts at 8.45 am	
I start my homework at 4.50 in the afternoon	
I play with my friends at quarter past 5 in the afternoon	
I walk to school with my friends at 7.45 am	
I play football at half past three in the afternoon	

9C Calculating time intervals

Discover

Use this blank timetable to create a timetable of a day at school and a day at the weekend.

	School Day	Weekend
00.00–01.00		
01.00–02.00		
02.00–03.00		
03.00–04.00		
04.00–05.00		
05.00–06.00		
06.00–07.00		
07.00–08.00		
08.00–09.00		
09.00–10.00		
10.00–11.00		
11.00–12.00		
12.00–13.00		
13.00–14.00		
14.00–15.00		
15.00–16.00		
16.00–17.00		
17.00–18.00		
18.00–19.00		
19.00–20.00		
20.00–21.00		
21.00–22.00		
22.00–23.00		
23.00–00.00		

9C Calculating time intervals

Explore

You are putting together a timetable for TV programmes for a day.

Use the information below as a guide to what needs to be shown during the course of a day. You may need to add more programmes.

Programmes start at 06.00. Programmes finish at 01.30

- Children's cartoons – 1 hour 30 minutes
- Morning News – 2 hours
- Evening News – 1 hour
- *Politics Today* – 1 hour
- Today's film – 2 hours
- Late film – 2 hours 30 minutes
- Serial 1 – 30 minutes
- Serial 2 – 45 minutes
- Late News – 15 minutes
- Children's programmes – 1 hour
- Nature programme – 1 hour

	Schedule
00.00–01.00	
01.00–02.00	
02.00–03.00	
03.00–04.00	
04.00–05.00	
05.00–06.00	
06.00–07.00	
07.00–08.00	

08.00–09.00	
09.00–10.00	
10.00–11.00	
11.00–12.00	
12.00–13.00	
13.00–14.00	
14.00–15.00	
15.00–16.00	
16.00–17.00	
17.00–18.00	
18.00–19.00	
19.00–20.00	
20.00–21.00	
21.00–22.00	
22.00–23.00	
23.00–00.00	

Use your schedule to answer the following questions:

1. Is the Nature programme before or after the Evening News?
2. How long after the Morning News is the Evening News?
3. How long after Serial 1 has finished does Serial 2 start?

Make up two questions of your own. Ask your friends to answer them.

9D Reading a calendar

Discover

Complete this table by finding out your friends' birthdays.

Find at least one birthday in each month.

Name	Birthday

2. Circle the date on this calendar for each of the birthdays.

2014 CALENDAR

JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10	10	10	10	10
11	11	11	11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14	14	14	14	14
15	15	15	15	15	15	15	15	15	15	15	15
16	16	16	16	16	16	16	16	16	16	16	16
17	17	17	17	17	17	17	17	17	17	17	17
18	18	18	18	18	18	18	18	18	18	18	18
19	19	19	19	19	19	19	19	19	19	19	19
20	20	20	20	20	20	20	20	20	20	20	20
21	21	21	21	21	21	21	21	21	21	21	21
22	22	22	22	22	22	22	22	22	22	22	22
23	23	23	23	23	23	23	23	23	23	23	23
24	24	24	24	24	24	24	24	24	24	24	24
25	25	25	25	25	25	25	25	25	25	25	25
26	26	26	26	26	26	26	26	26	26	26	26
27	27	27	27	27	27	27	27	27	27	27	27
28	28	28	28	28	28	28	28	28	28	28	28
29		29	29	29	29	29	29	29	29	29	29
30		30	30	30	30	30	30	30	30	30	30
31		31		31		31	31		31		31

9D Reading a calendar

Explore

Find the birthdays and ages of ten famous people who are still alive.

Complete this table by filling in the year and date they were born.

Name	Birth date	Year they were born

Rearrange the ten people in the table above.
Put them in age order from youngest to oldest.

Complete this table to show how much older they are than you.

Use a calendar to help you.

Name	Age	Difference in ages (in years, months and days)

9 Time

Connect

How many hours in my life have I spent sleeping?

How much time do I spend watching TV?

Fill in the table below. It will show you how many hours you've spent doing certain things in your entire life, up to this point!

The worked example will help you. You will need to use a calculator.

Activity	Number of hours per day	Number of hours per week	Number of hours per year	In my life
Example: How long do I sleep? (I am 9 years, 10 weeks and 4 days old)	8	56	2912	$9 \times 2912 = 26\,208$ $10 \times 56 = 560$ $4 \times 8 = 32$ Adding them all together gives 26 800 hours
How long do I sleep?				
How long do I watch TV				

Make up two more questions to answer in the same way, and write them in the bottom two rows of the table.

Review

Make a set of 'loop cards' for your friends to play using all the information from the unit.

I am 2 hours 30 minutes Who is the number of days in a week?	I am 7 Who has the month after March?	I am April
		Who has 150 minutes in hours and minutes?

10 Data Handling

Engage

I wonder what our favourite food is?

What sort of shop should we set up in the class?

What is your favourite food in a restaurant?

What is the best computer game?

Which clothes do you like shopping for?

10A Tally and bar charts, frequency tables, pictograms

Discover

1. Use the grid below.

   Make a pictogram of students' birthdays in your class.

Month						
January						
February						
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						

Complete these sentences about your pictogram:

- Most students have birthdays in _____
- More students have birthdays in _____ than in _____.
- There are _____ students with a birthday in August.

2. Collect data about the number of letters in students' names in your class.

Draw a tally chart below.

Number of letters	Tally

3. Use the information you collected in question 2 to construct a frequency table.

Number of letters	Frequency

4. Show this data in the form of a bar chart. Label the axes.

10A Tally and bar charts, frequency tables, pictograms

Explore

Imagine you are setting up a shop as a class. Before you begin, you will need to find out lots of information about:

- What would people most like to buy?
- How much they would prefer to pay for these things?
- How often people would visit the shop?
- What times would people like the shop to be open?

Choose one of the questions, or make up your own. On the following two pages, collect data about your class shop.

1. Our question is

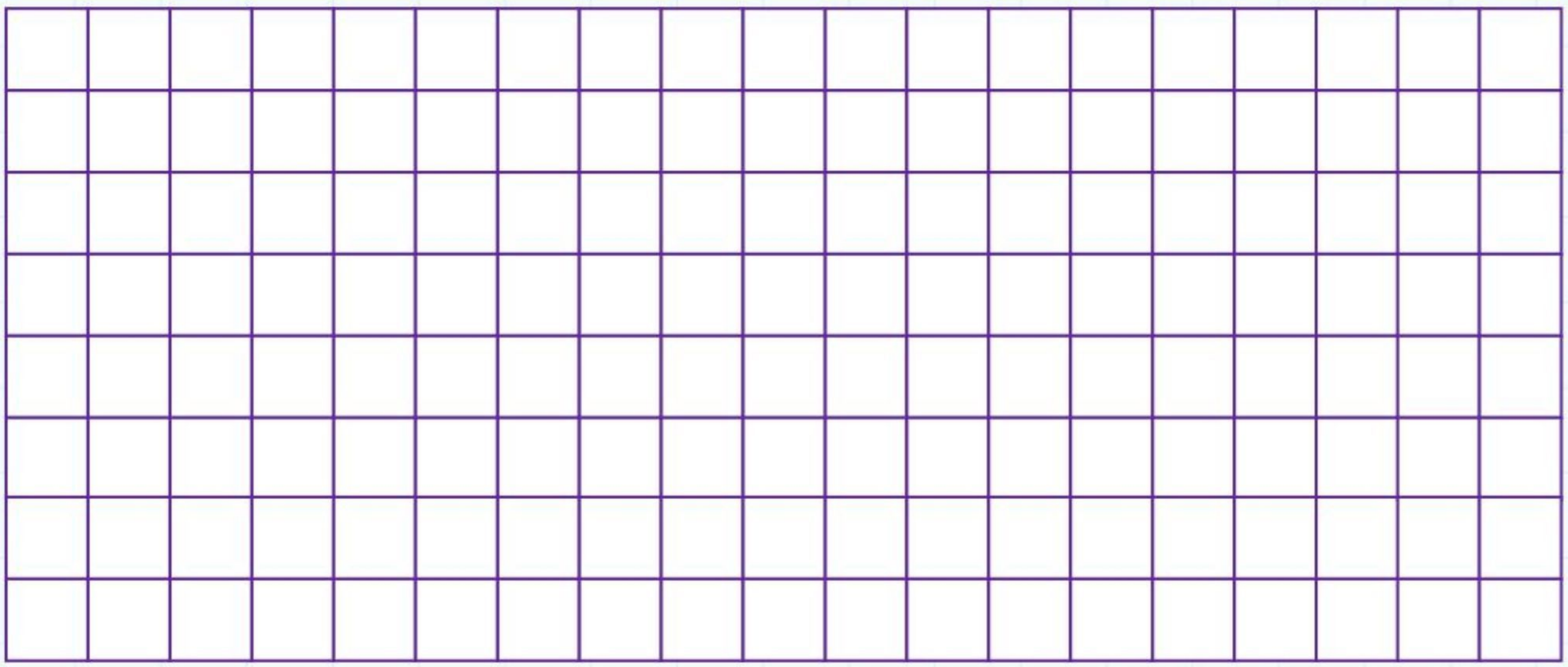
_____

_____

2. This tally chart shows the data we collected

3. This frequency table shows the data more clearly

4. This bar chart represents the data



5. We found out that

_____

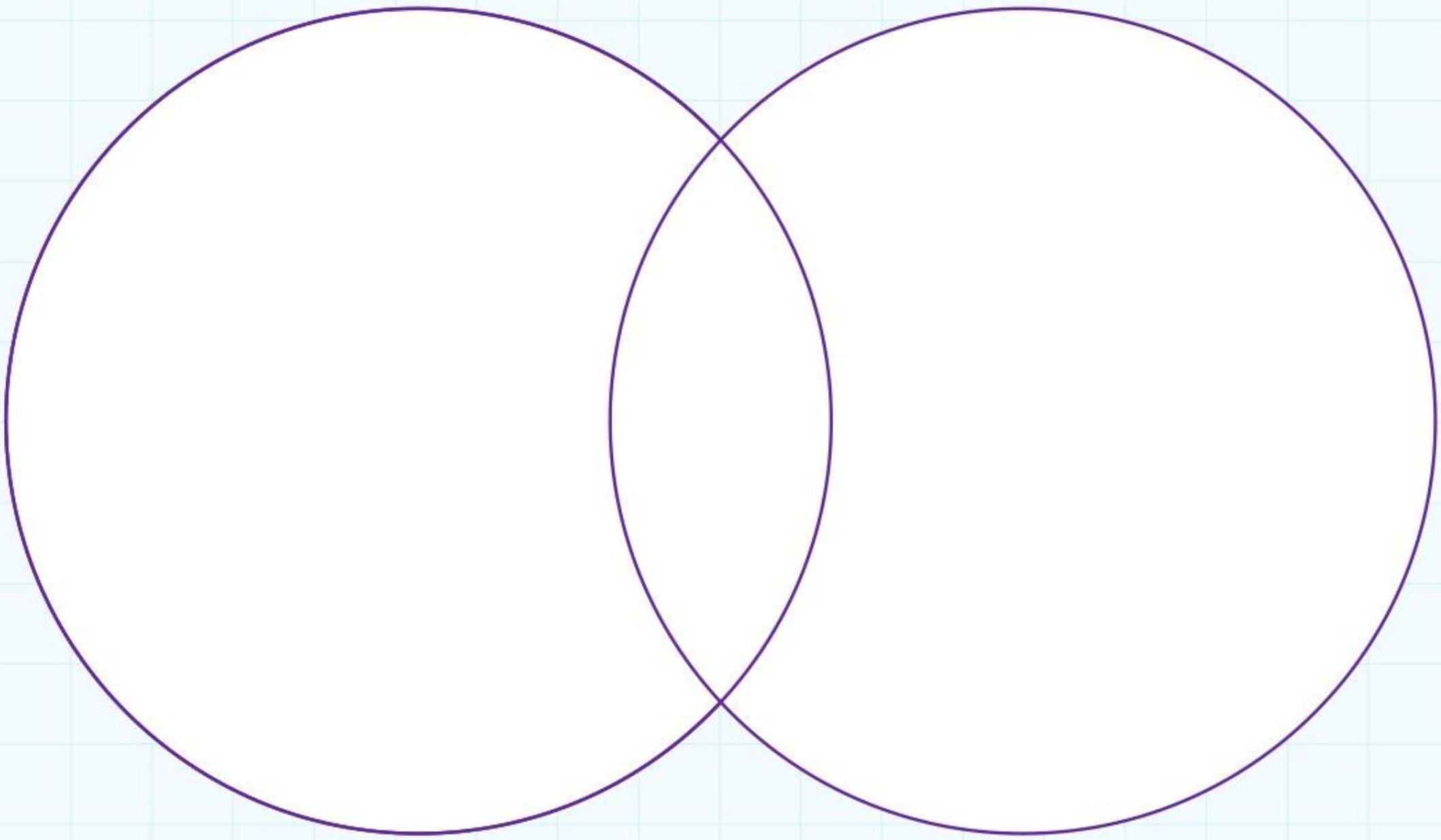
_____

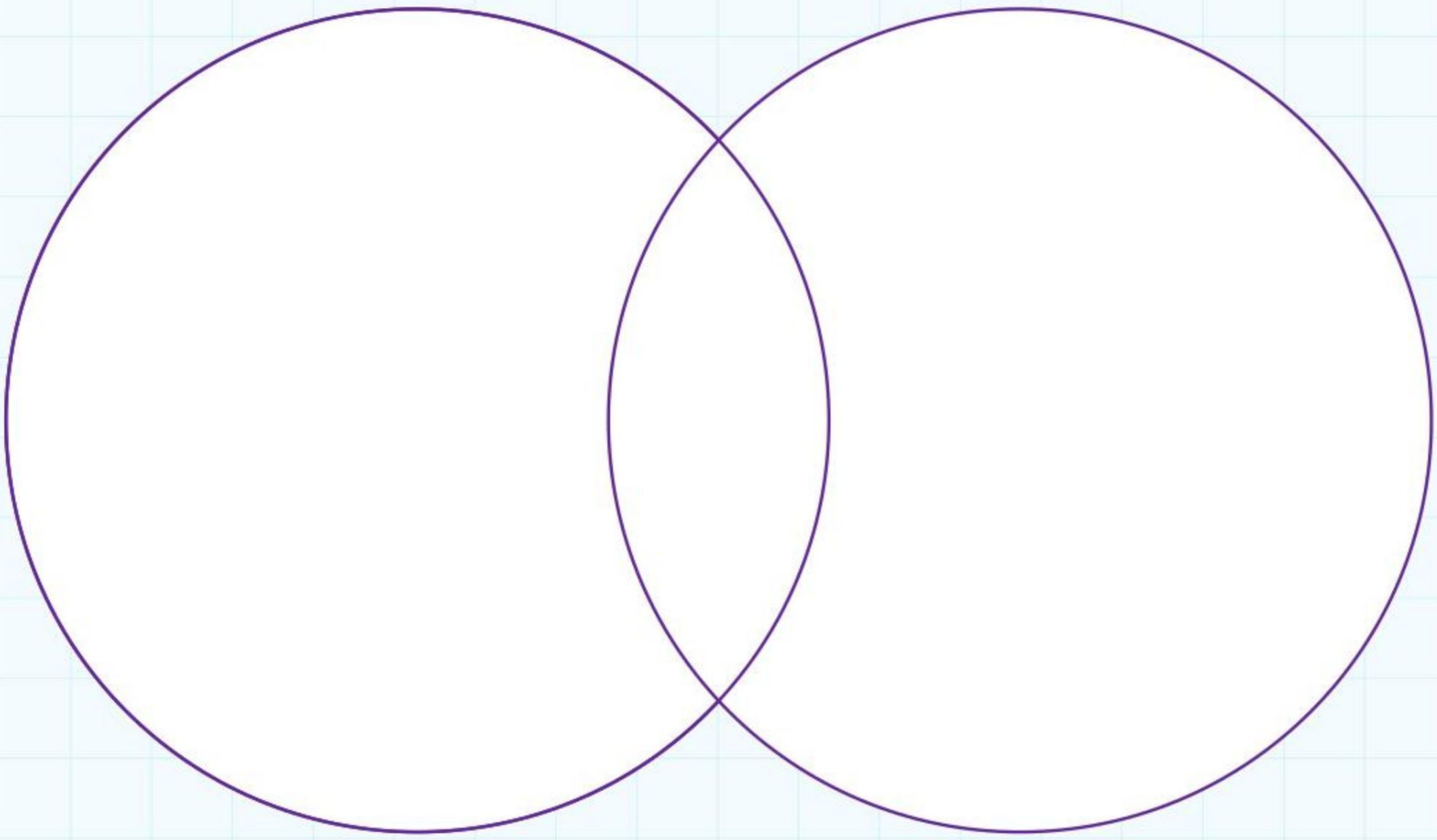
10B Venn diagrams and Carroll diagrams

Discover

1. Use the following Carroll diagrams to classify the items in your shop in three different ways.

2. Use the following Venn diagrams to classify the items in your shop in two different ways.





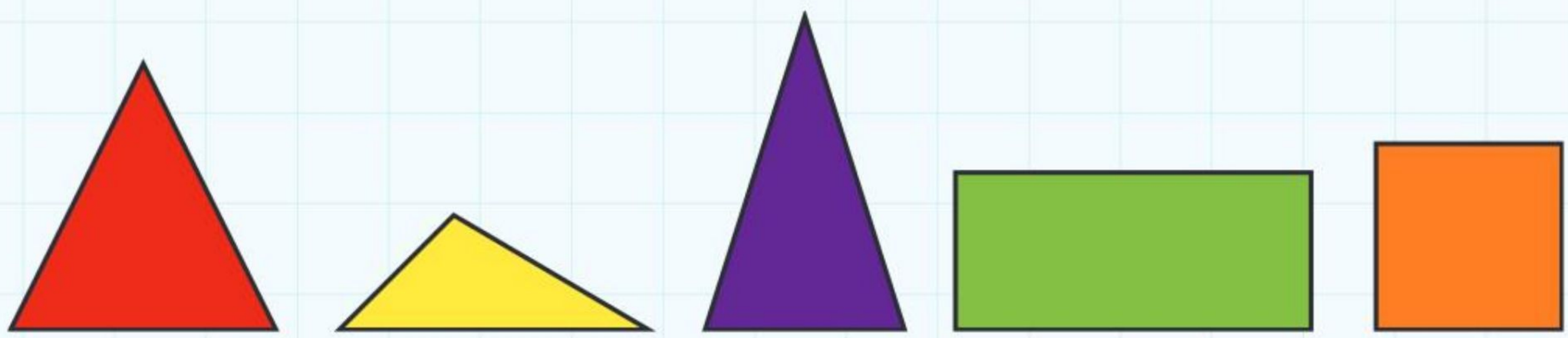
10B Venn diagrams and Carroll diagrams

Explore

1. Complete this Carroll diagram by labelling the criteria.

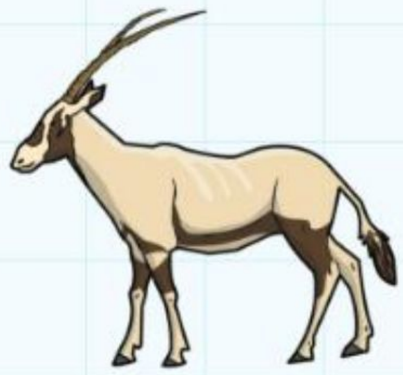
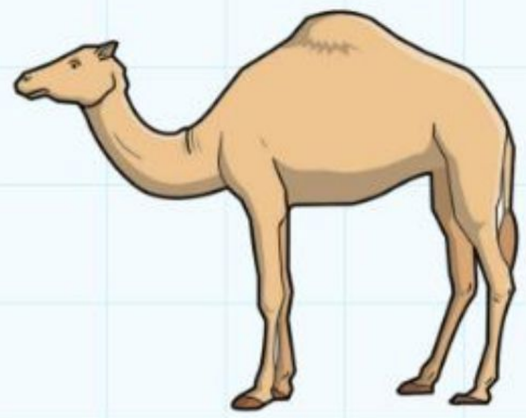
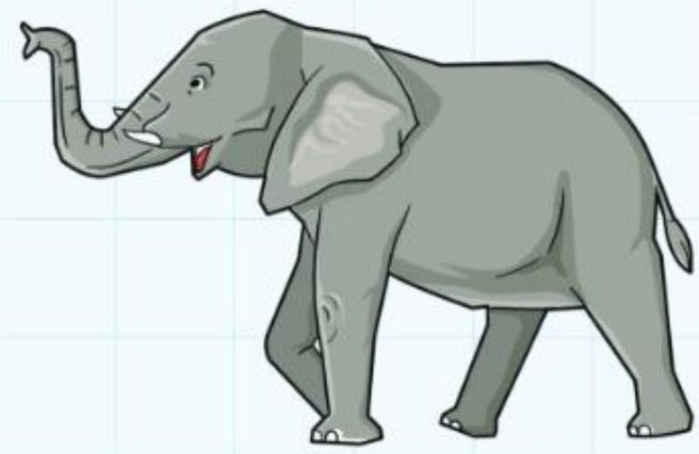
	2	4,6,8,10,12,14,16,18,20
	3,5,7,11,13,17,19	1,9,15

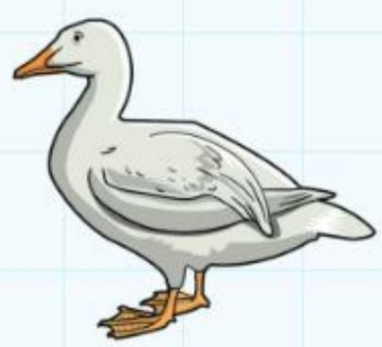
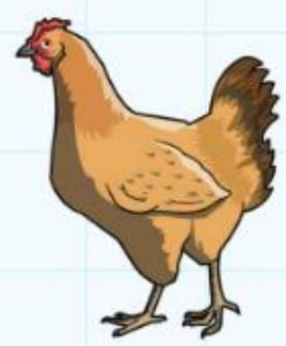
2. Draw shapes to complete this Carroll diagram.



	4 sided shape	Triangle
Equal sides		
Not equal sides		

3. Add the names of animals to complete this Carroll diagram.

	Birds	Mammals
Wild		
Domesticated		

4. Use this Venn diagram to help you decide whether to get a rabbit or a cat.

Getting a Cat **Getting a Rabbit**

will catch mice

need a fence

might scratch people

funny to watch

lives outside

can live for 15+ years

have to feed it

needs a hutch/run

can play games with it

can stay alone for a few days

doesn't cost much to feed

can live inside or outside

vet bills

fun to stroke

only lives a few years

can sit on lap

not very clever

quite clever

Connect

This table shows facts about mice, cats, and fish.

	Mice	Cats	Fish
Where they live	field	house	sea, lake, river
What they eat	cheese	cat food	plants

Collect information about one of the following groups.

You can pick your own topic if you like.

1. Small animals
2. Large animals
3. Tall buildings
4. Fast cars

In this table, list facts about each of your objects.

For example, if you choose small animals you might list facts about length, weight, area they live in, diet, or how long they live. Fill in the table in the same way as the one above.

Illustrate this data in the following ways:

A bar chart

A Venn diagram

A Carroll diagram

Review

This activity follows the 'Connect' activity.

Write a short paragraph to say what you found out.

Use these sentence starters to help you.

I chose to find out about _____ because _____

_____.

The facts that I researched were _____ and _____ and _____ .

I used a bar chart to show _____ because _____

_____.

I used a Carroll diagram to show _____ because _____

_____.

I used a Venn diagram to show _____ because _____

_____.

I found out that _____

_____.

I also found out that _____

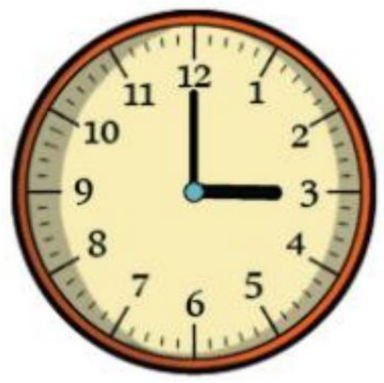
_____.

I am interested in finding out about _____ because _____

_____.

Glossary

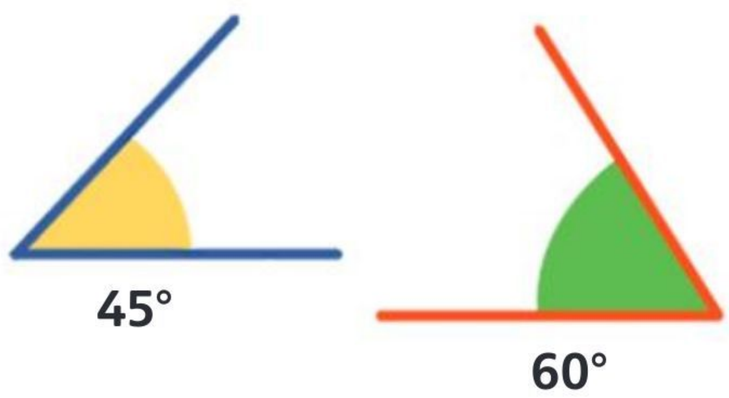
a.m.



3 o'clock in the morning

3.00 **a.m.**

angle



ascend

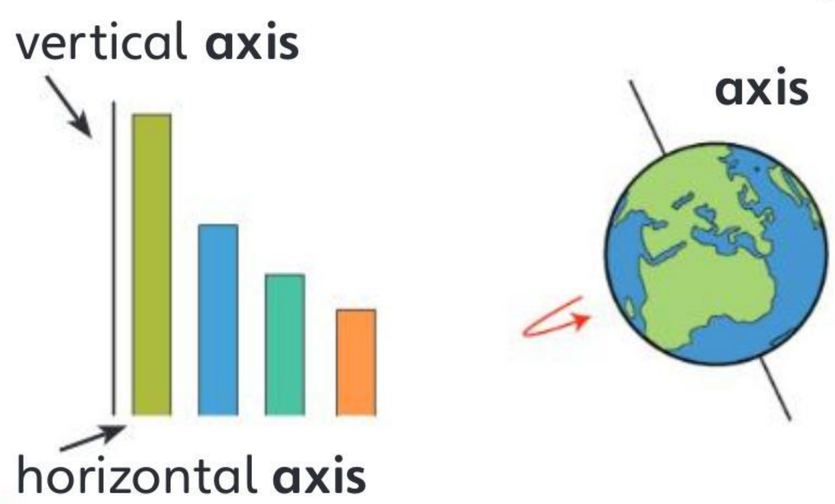
Ascending the stairs

approximate/ approximately

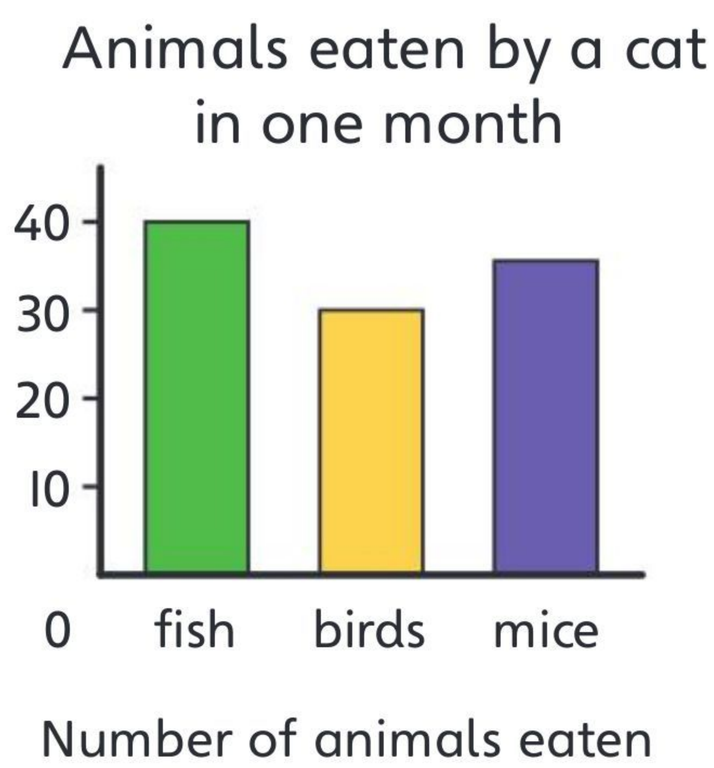
19 is **approximately** 20

405 is **approximately** 400

axis (plural axes)

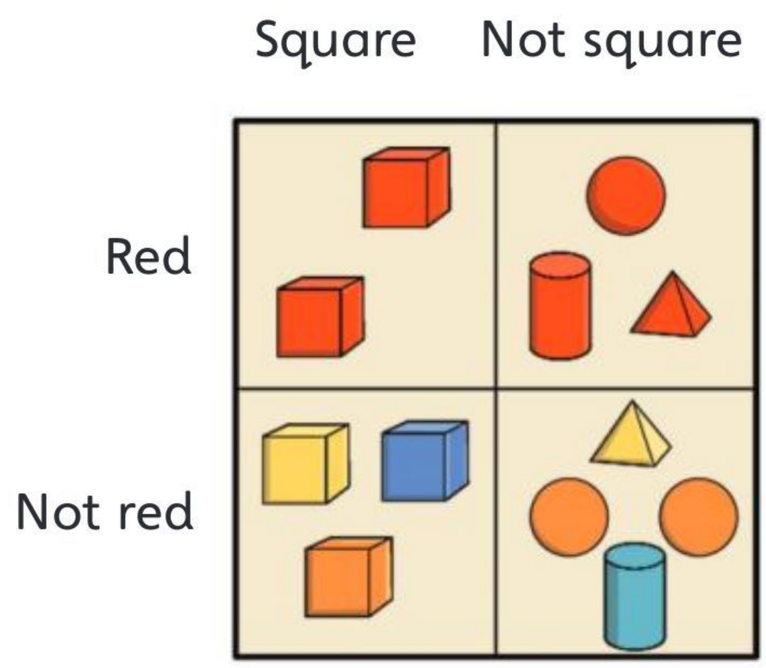


bar chart



This **bar chart** has vertical bars

Carroll diagram



Carroll diagrams are named after the author Lewis Carroll

calendar

APRIL						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

This is a **calendar** page for April

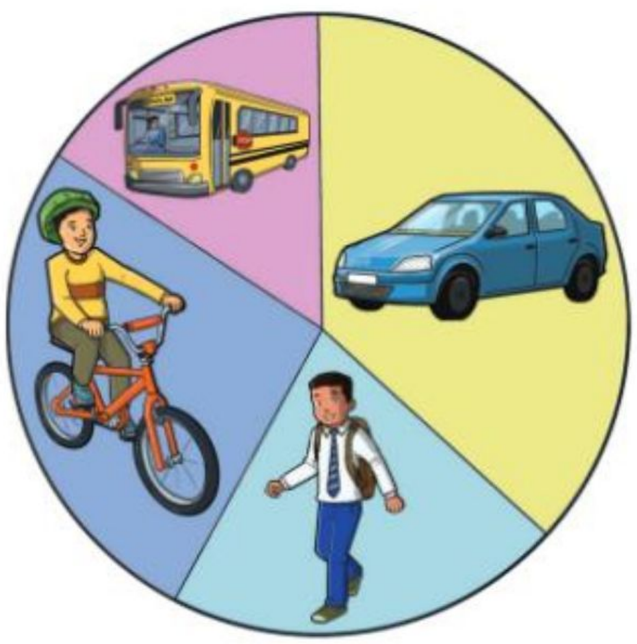
century

1 **century** = 100 years

The 21st **century** is all the years from 2000 to 2099

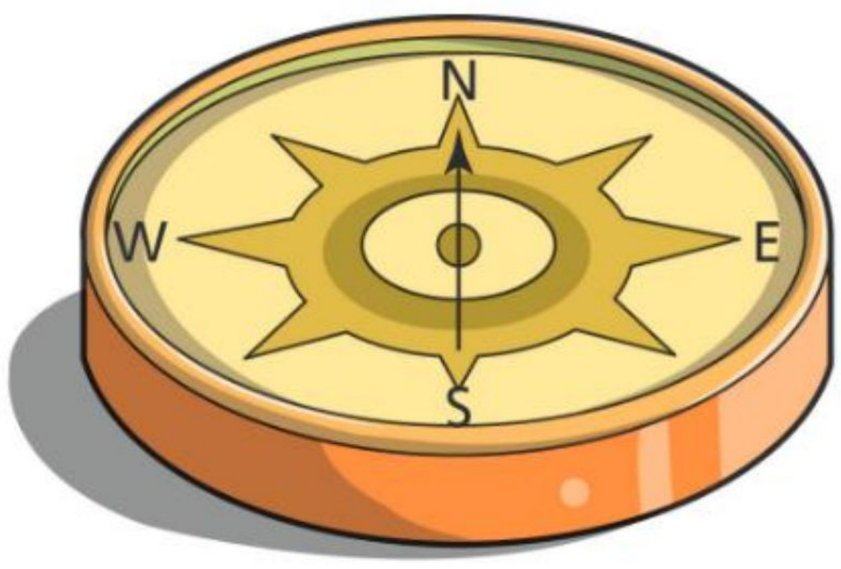
chart

How the boys in class 4 come to school



This is a pie **chart**

compass points



The four main **compass points** are N, S, E, and W

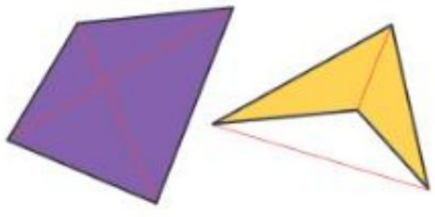
date

25th May 2015
This **date** shows the day, month, and year

descend

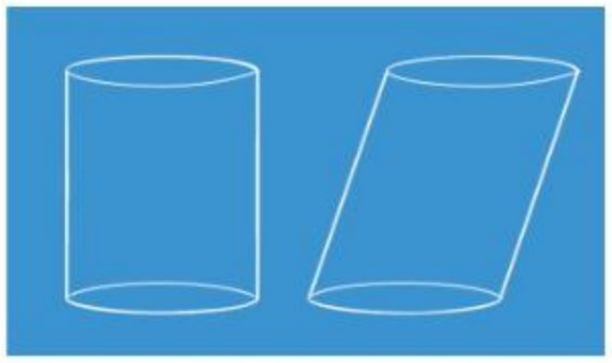
Descending the stairs

diagonal



A **diagonal** can be inside or outside the shape

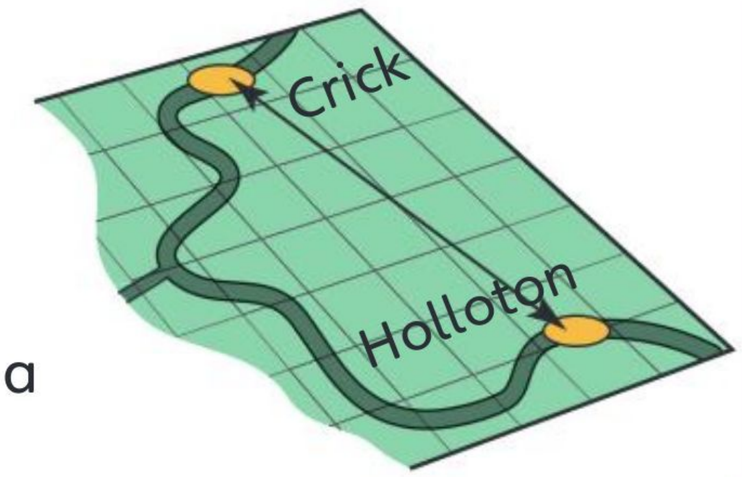
diagram



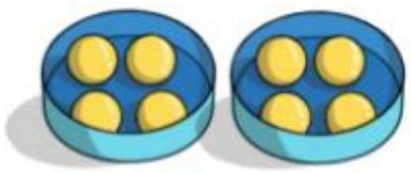
The **diagram** shows two types of cylinder

distance

The **distance** between the towns by road is greater than the **distance** in a straight line

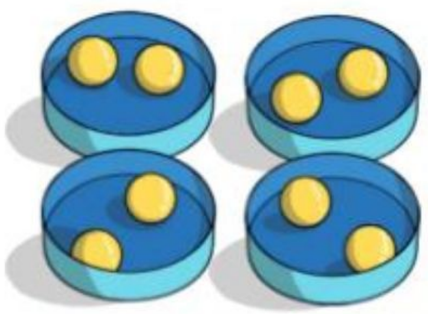


division



Sharing things equally:

What is 8 divided by 2?
$8 \div 2 = 4$



Grouping into sets of the same size:

How many 2s are in 8?
$8 \div 2 = 4$

equation

$3 \times 4 = 12$

$2 + 6 = 3 + 5$

Here are some **equations**

frequency table

Marks	Frequency	
21–25	IIII	3
16–20	~~IIII~~ II	7
11–15	~~IIII~~ ~~IIII~~	10
6–10	IIII	4
1–5	~~IIII~~	5

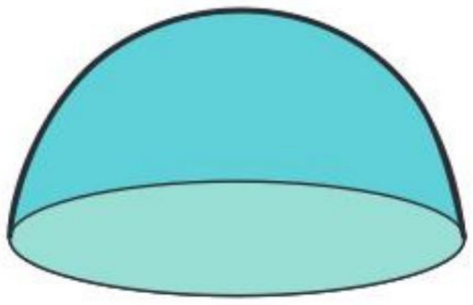
The **frequency table** shows marks in a test

greatest value

Least Value = 9 cents

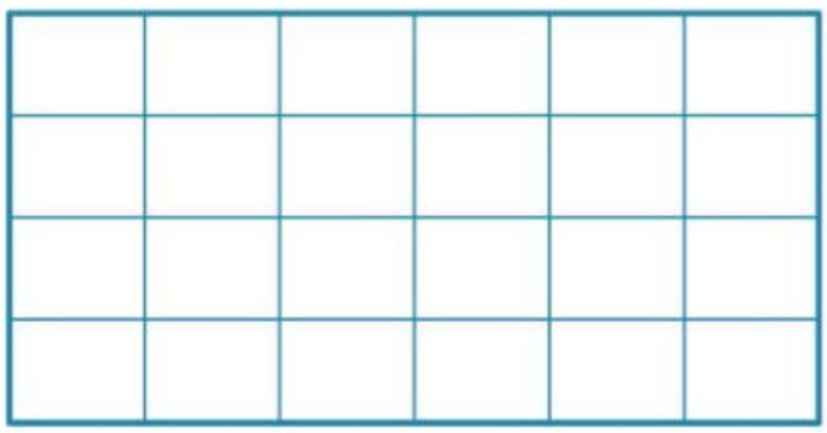
Greatest Value = 17 cents

hemisphere



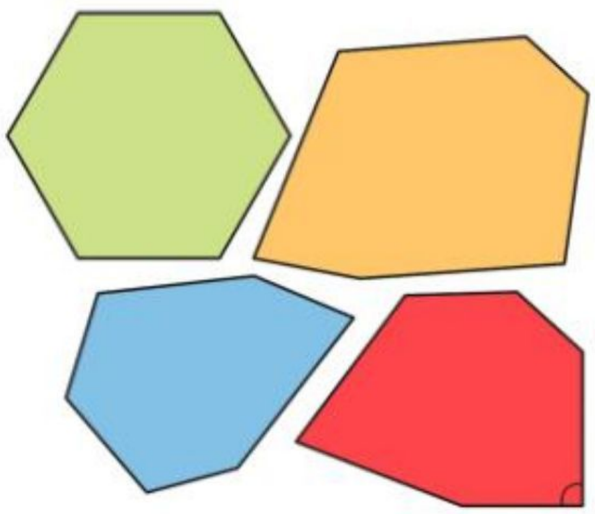
hemisphere

grid



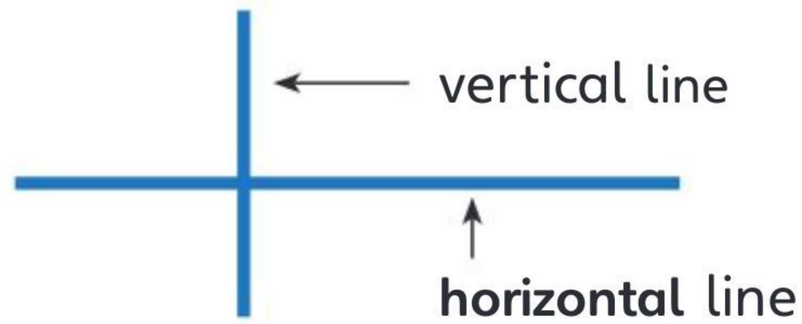
a **grid** made of squares

hexagonal

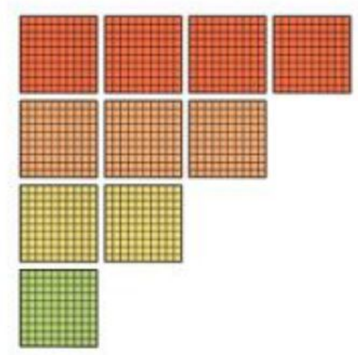


All these shapes are **hexagonal**

horizontal



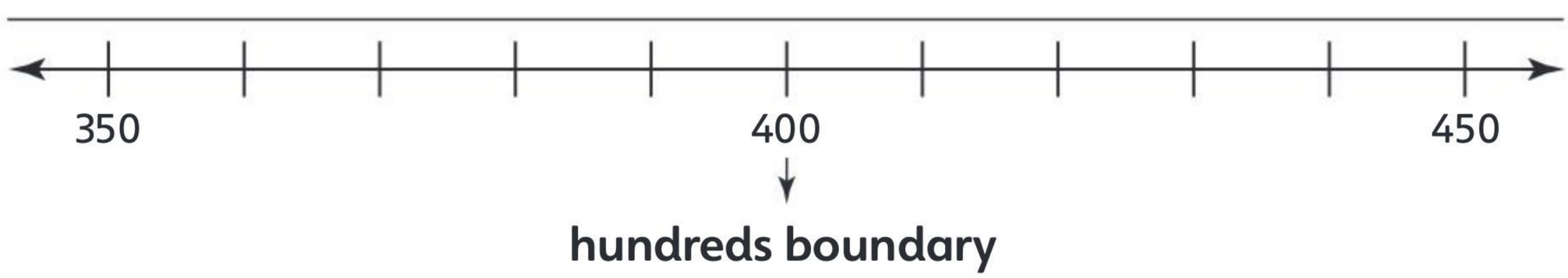
hundreds



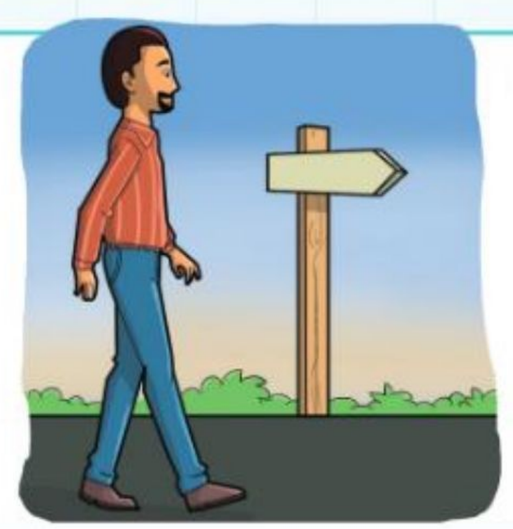
400
300
200
100

These are **hundred** numbers

hundreds boundary



kilometre (km)



It takes about 10 minutes to walk 1 **km**

least value

Least Value = 9 cents

Greatest Value = 17 cents

less/least expensive

The shirt is **less expensive** than the jeans

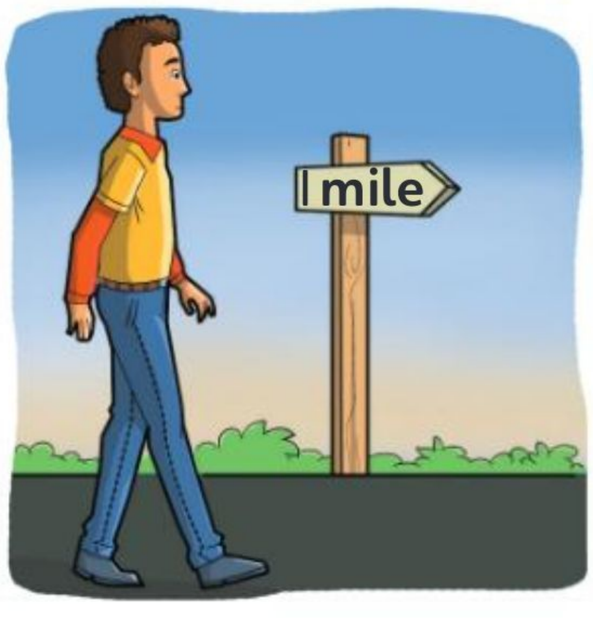
The T-shirt is the **least expensive**

more/most expensive

The shirt is **more expensive** than the T-shirt

The jeans are the **most expensive**

mile



It takes about 15 minutes to walk 1 **mile**

5 **miles** = 8 kilometres

multiplication

$5 + 5 + 5 + 5 + 5 + 5 = 30$

Here are six lots of 5

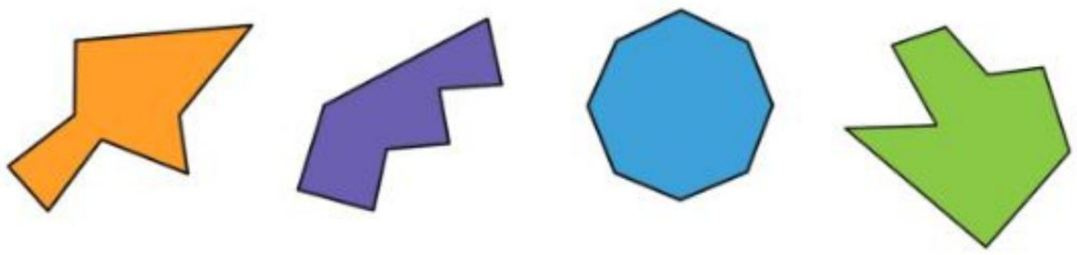
$5 \times 6 = 30$

This is the **multiplication** of 5 by 6

note

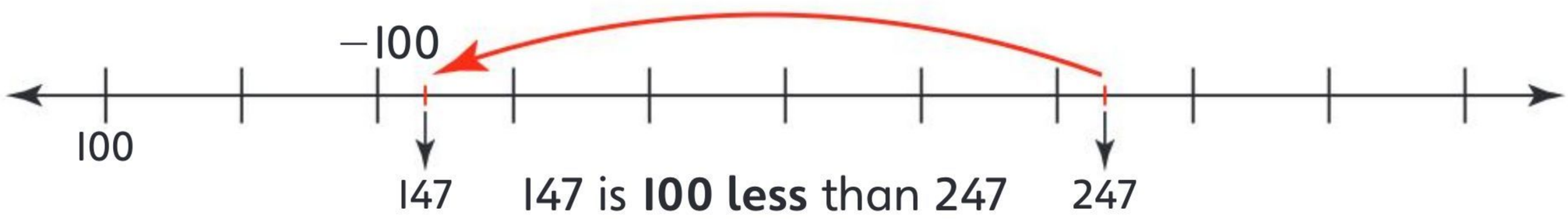
All of these are **notes**

octagonal



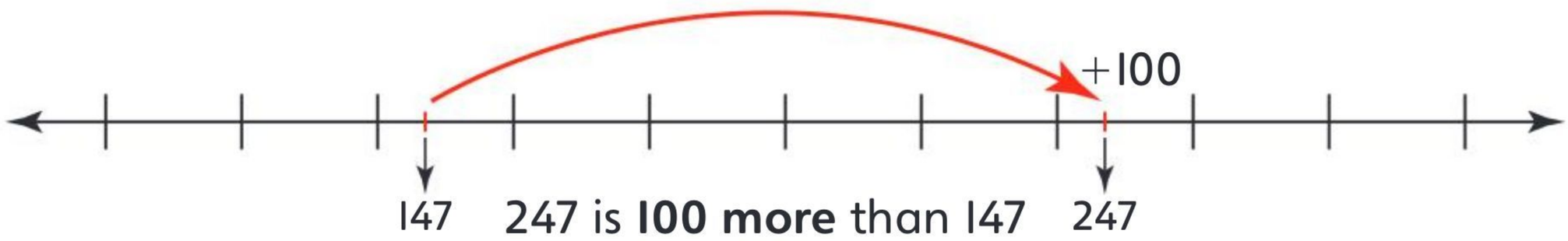
All these shapes are **octagonal**

one hundred less



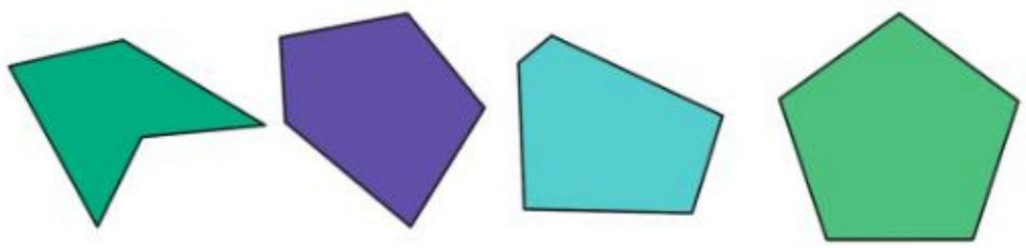
147 is **100 less** than 247

one hundred more



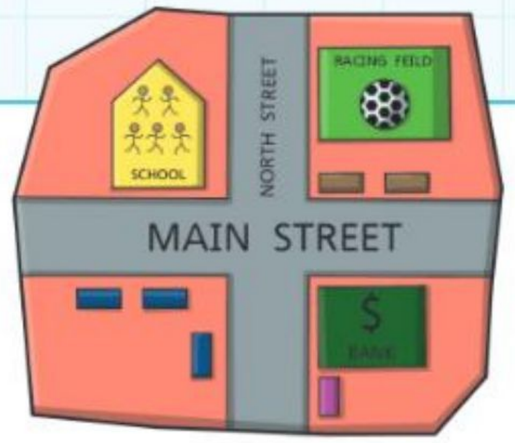
247 is **100 more** than 147

pentagonal



All these shapes are **pentagonal**

plan

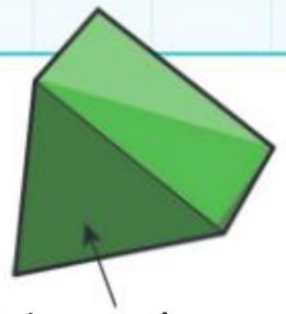


p.m.

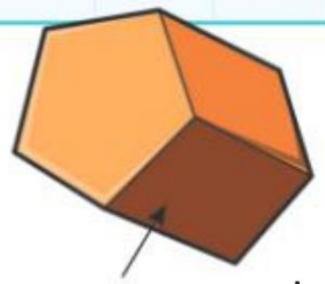
9 o'clock in the evening

9.00 **p.m.**

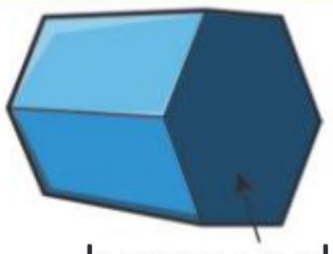
prism



triangular **prism**



pentagonal **prism**



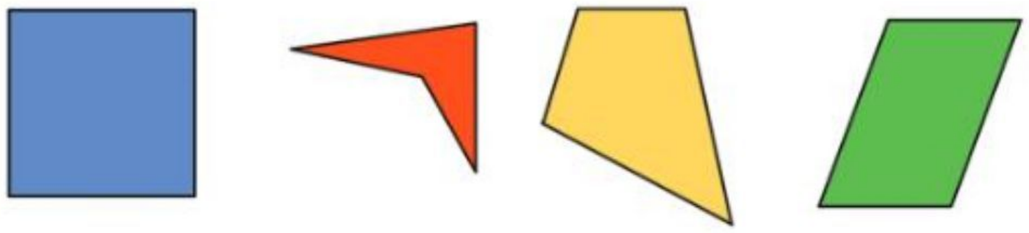
hexagonal **prism**

product

The **product** of 3 and 7 is 21 because $3 \times 7 = 21$

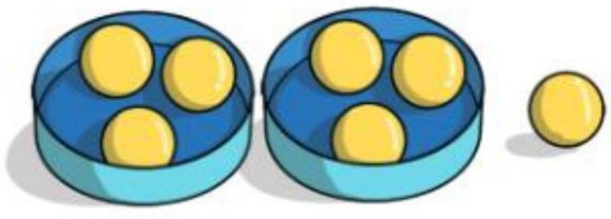
The **product** of 2, 4 and 5 is 40 because $2 \times 4 \times 5 = 40$

quadrilateral



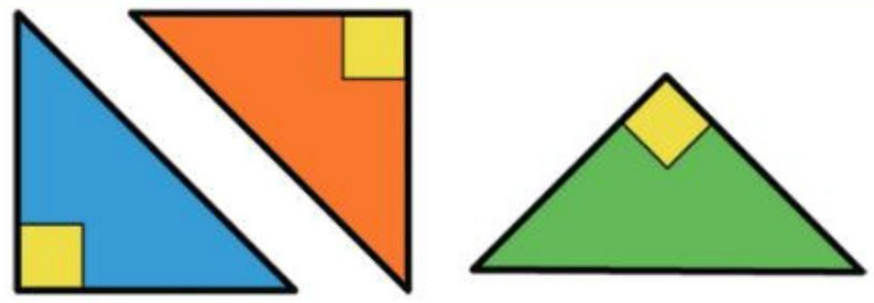
These shapes are all **quadrilaterals**

remainder



$7 \div 2 = 3$ **remainder** 1

right-angled triangle



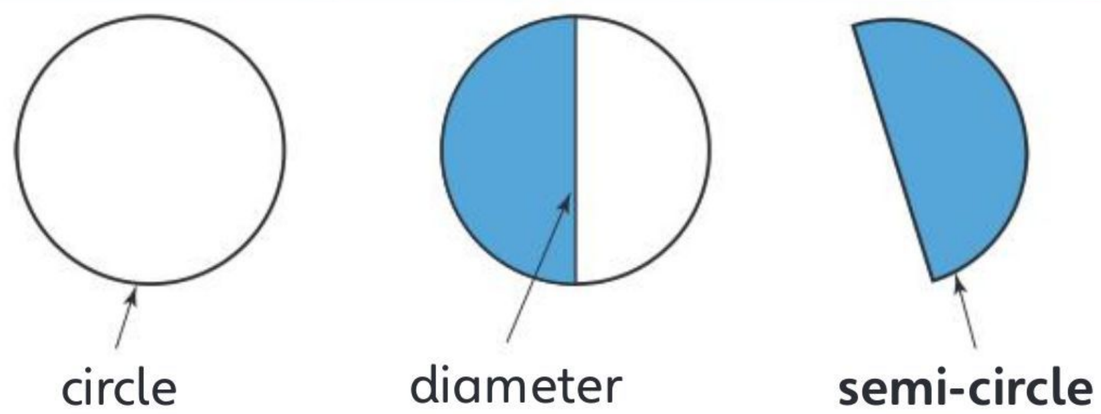
right-angled triangles

round up, round down

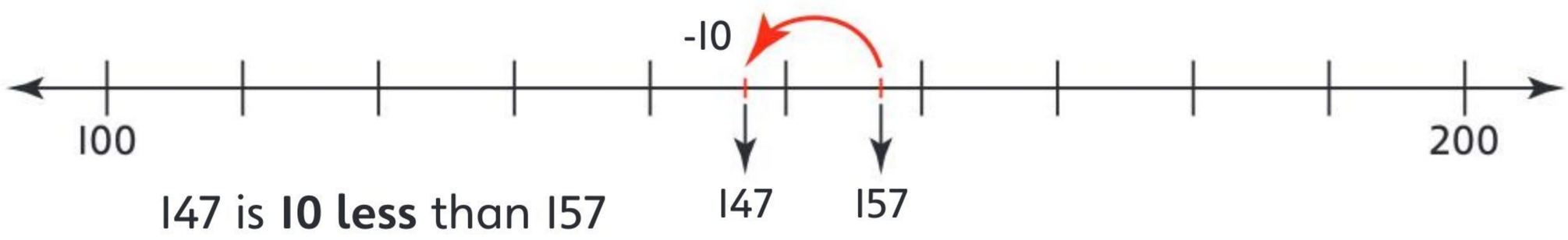
32 **rounded down** to the nearest ten is 30

479 **rounded up** to the nearest hundred is 500

semi-circle

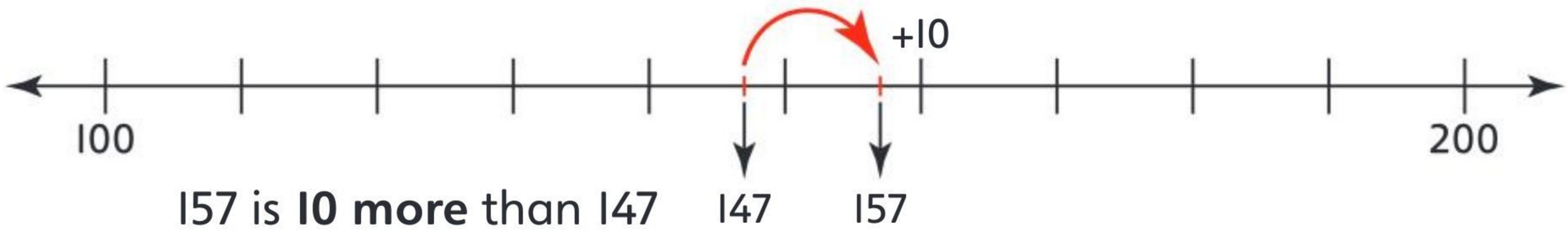


ten less



147 is **10 less** than 157

ten more



157 is **10 more** than 147

tenth

One **tenth** of the shape is coloured

$\frac{1}{10}$ of 20 is 2

third

One **third** of the shape is coloured.

$\frac{1}{3}$ of 12 is 4

value

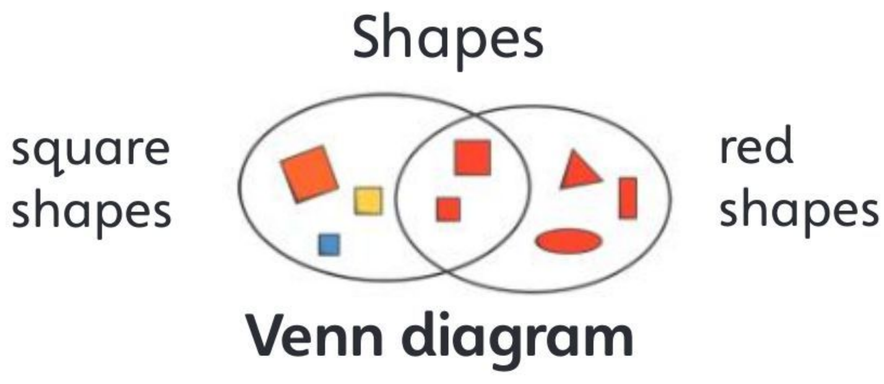
173

hundreds tens units

The **value** of the digit 7 is 70

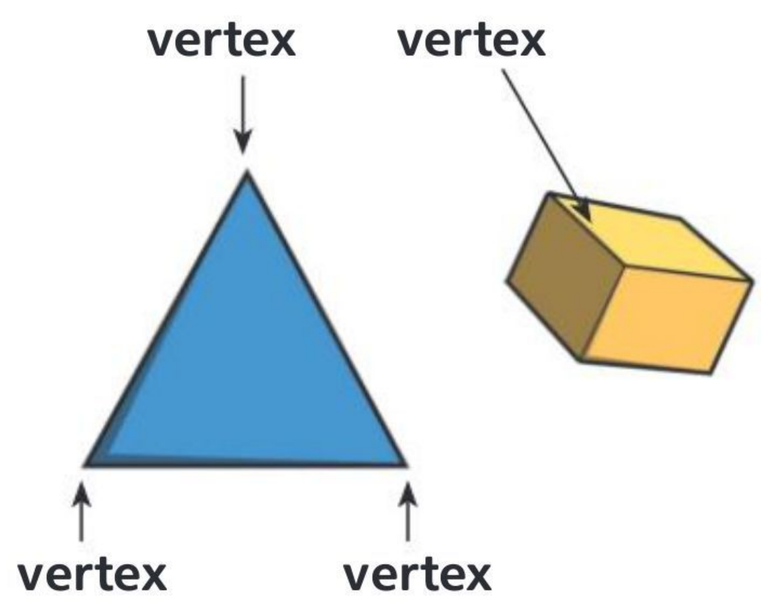
The **value** of the digit 1 is 100

Venn diagram



Venn diagram

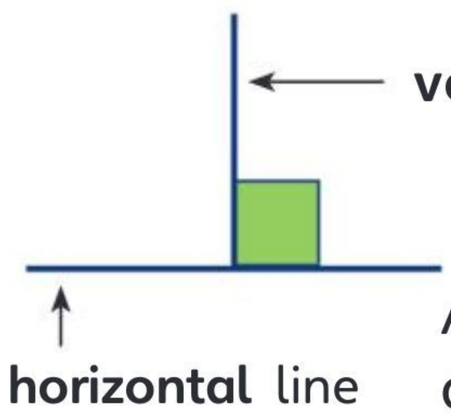
vertex (plural vertices)



A triangle has 3 **vertices**

A cuboid has eight **vertices**

vertical



A **vertical** line and a horizontal line meet at a right angle

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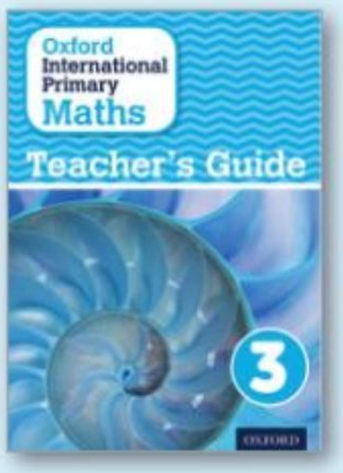

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