Unit focus: Persuasive Texts
Text focus: Letter (950L)

STAGE 5

Letter Home

Dear Mother and Father,

Thank you for your recent letter. It was lovely to hear about your travels to Europe and the amazing fun you are having at home without me. If I were to offer one thought, it would be that you might have considered what effect that would have on your daughter, locked away in a desolate prison.

This place is truly dreadful. I know you believed that you were sending me to one of the best boarding schools in the country, but I really cannot understand how they tricked you. Matron is an absolute beast who prowls the halls at night looking for any reason to send us to the cellars for the night. That's her favourite punishment for any indiscretion: leave us in that ice-cold pit until our teeth are chattering and our nightgowns are frozen stiff. Petunia was sent there a week ago, and we haven't seen her since. All she did was sneeze after lights out! Can you imagine living in those conditions? You have the ability to end this torment, simply by bringing me home!

Lessons are no better. Deportment is an utter nightmare. I'm not sure if my head just isn't flat enough or if the books are curved, but they just won't stay on my scalp. Time after time, Madam Berridge scolds me for my clumsiness, but I really am trying my hardest. Even as I write this letter, I have Great Expectations on my shoulders. Technically, it's on my head, but it's hurting my shoulders. You will notice a large smudge in the corner of the page where I dropped it very recently, and it toppled my ink well.

I do understand that you want your only child to get the best education you can provide, but I'm not entirely sure I'll live to use it. What use is knowing the finer points of Her Majesty's Empire, if I never get the chance to travel on a steamboat or visit the Indies?

I suppose I'd be happier if all they were filling our heads with was knowledge. But it's not. They are also intent on filling us up with what they laughably call "food". Perhaps I have grown soft on Cook's teacakes and delightful salmon tarts. Here, food is whatever Matron has scraped up from the garden, or so it seems. We've not had meat in weeks as Matron is convinced it's bad for the constitution. She squawks and hoots about it during her daily lectures to us. We've barely had enough food to give us the energy to keep going.

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Delores was so hungry in Latin this morning that she swooned at the very thought of reciting any more on an empty stomach. There are rumours that she just disintegrated into a pile of dust, she was that ravenous!

As you can clearly see, this is no place for a growing girl. I trust that you will look deep into your hearts and accept your mistake in sending me here. This is clearly a school for deviants, and I am far too well-behaved for that. You are the only two people in the world who can stop this nonsense by bringing me home. I hope you do the right thing.

Your loving daughter,

Florence James

VOCABULARY FOCUS

1. Which word or phrase in the first paragraph describes how the author sees the school?
2. Write a definition for “desolate”.
3. Find two examples of language that describe Matron as being like an animal.
4. Which word has a defintion closest to “knocked over”?
5. What does the phrase “laughably call” tell you?

VIPERS QUESTIONS

R	Which book is Florence balancing on her head as she writes?
R	Why is there a smudge on the letter?
E	Why is the word “food” in inverted commas?
S	What is the purpose of the final paragraph?
S	What are Florence’s main reasons for wanting to return home?

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Answers:

1. Desolate prison
2. Bleak, empty, broken down
3. Absolute beast / prowls the halls /she squawks and hoots
4. Toppled
5. Florence thinks it's a funny/ridiculous idea that they call it food.

R: Great Expectations

R: She dropped the book and it knocked over the ink well

E: Florence doesn't think that it is actually food, that's just what they call it

S: It is intended to conclude all of the points and explain what Florence wants her parents to do.

S: She thinks that the school is cruel and that they don't get enough food. She is concerned that she won't live long enough to use the education she is getting.

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What might the girl be asking herself as she runs through the graveyard?

How does the girl behave? Use verbs, adverbs and adjectives to develop phrases to describe her actions in the film.

Describe the girls **appearance** - Age?
Describe the girls **appearance** - Age? Height? Hair? Clothes? Facial Expressions?

Character Description of the Girl

Describe the girls **surroundings** – what can she smell/see/hear/feel?

Diary Plan

Today, you need to plan a diary entry as the girl from the video, "The Ghosts of Peré Lechaise." Using your ideas from the character description yesterday and combined with the video of her trip into the cemetery, using the planning frame to write the events and vocabular you are going to include when writing your diary entry tomorrow in full. Remember you are writing in the first person, as the young girl.

Introduction

Who?	What?
Where?	When?

Main Event

First Person	More Detail (in chronological order)	Feelings
Past Tense		Time Conjunctions and Adverbials

Conclusion

Word Classes

Read the extract below. Use this key to choose your colours, then find as many words as you can which belong to each class.

Word Class					
nouns		adjectives		verbs	
adverbs		proper nouns		prepositions	
pronouns		conjunctions			

As the night turned dead, a noise crept along the windswept valley. Led by a horse-drawn wagon, a string of lurching, wheeled giants trundled and tracked its way across the uneven ground. In the centre of the field, the vehicles stopped and a man leapt down from the front of the wagon. He stroked his horse's neck, then strode to the rear of the wagon. He slid a thick, iron latch across the door and pulled down a set of rickety, wooden steps before climbing them, one shrieking creak at a time, and beginning his sinister scheme.

"What a night for a Halloween fright," said the stranger to himself.

Inside the wagon, he clicked his fingers and a candle burst into life. Firelight oozed from the wick and cast shadows onto the wooden walls, which were lined with shelves of glass bottles containing strange, mysterious liquids. Some glowed gently, some fizzed furiously and some bubbled like saucepans on the verge of boiling over.

Extract from the Twinkl Originals KS2 story 'Scare at Shadow Fair'

What word class is left over, after everything else is coloured in? _____

Can you write a sentence with the word 'light' as...

...a noun? _____

...a verb? _____

Word Classes Answers

Read the extract below. Use this key to choose your colours, then find as many words as you can which belong to each class.

Word Class		
common nouns	adjectives	verbs
adverbs	proper nouns	prepositions
pronouns	conjunctions	

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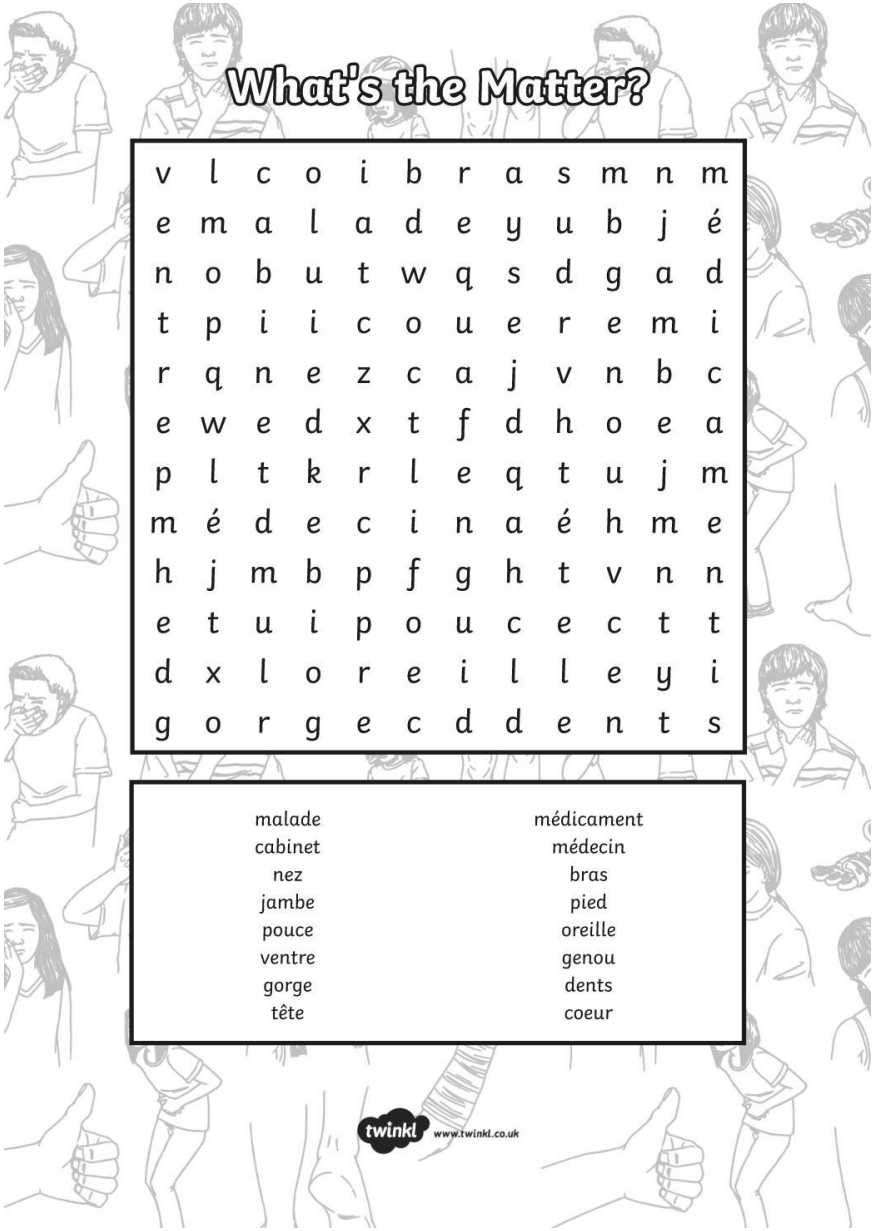
Extract from the Twinkl Originals KS2 story 'Scare at Shadow Fair'

What word class is left over, after everything else is coloured in? **determiners**

Can you write a sentence with the word 'light' as...

...a noun? **e.g. The bottles glowed with a mysterious light.**

...a verb? **e.g. The man was able to light the candle by clicking his fingers.**



What's the Matter?

v	l	c	o	i	b	r	a	s	m	n	m
e	m	a	l	a	d	e	y	u	b	j	é
n	o	b	u	t	w	q	s	d	g	a	d
t	p	i	i	c	o	u	e	r	e	m	i
r	q	n	e	z	c	a	j	v	n	b	c
e	w	e	d	x	t	f	d	h	o	e	a
p	l	t	k	r	l	e	q	t	u	j	m
m	é	d	e	c	i	n	a	é	h	m	e
h	j	m	b	p	f	g	h	t	v	n	n
e	t	u	i	p	o	u	c	e	c	t	t
d	x	l	o	r	e	i	l	l	e	y	i
g	o	r	g	e	c	d	d	e	n	t	s

malade
cabinet
nez
jambe
pouce
ventre
gorge
tête

médicament
médecin
bras
pied
oreille
genou
dents
coeur

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What's the Matter?

v	l	c	o	i	b	r	a	s	m	n	m
e	m	a	l	a	d	e	y	u	b	j	é
n	o	b	u	t	w	q	s	d	g	a	d
t	p	i	i	c	o	u	e	r	e	m	i
r	q	n	e	z	c	a	j	v	n	b	c
e	w	e	d	x	t	f	d	h	o	e	a
p	l	t	k	r	l	e	q	t	u	j	m
m	é	d	e	c	i	n	a	é	h	m	e
h	j	m	b	p	f	g	h	t	v	n	n
e	t	u	i	p	o	u	c	e	c	t	t
d	x	l	o	r	e	i	l	l	e	y	i
g	o	r	g	e	c	d	d	e	n	t	s

malade
cabinet
nez
jambe
pouce
ventre
gorge
tête

médicament
médecin
bras
pied
oreille
genou
dents
coeur

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J'ai mal à la tête.

J'ai mal au pouce.

J'ai mal aux dents.

J'ai mal au genou.

J'ai mal à la gorge.

J'ai mal à l'oreille.

J'ai mal au coeur.

J'ai mal au ventre.

J'ai mal au pied.

J'ai mal au nez.

J'ai mal à la jambe.

J'ai mal au bras.

Une journée fatiguant pour Docteur Santé

Voici Docteur Santé. Elle dort.	This is Dr Santé. She is asleep.
À six heures du matin, le réveil sonne.	At six o'clock, her alarm clock rings.
Elle se lève. Elle est fatiguée.	She gets up. She is tired.
Elle prend une douche	She takes a shower.
Mais elle est toujours fatiguée.	But she is still tired.
Puis, elle mange son petit déjeuner, mais elle est toujours fatiguée.	Next, she eats her breakfast, but she is still tired.
Madame Santé est médecin.	Madame Santé is a doctor.
À huit heures, elle arrive au cabinet médical.	At eight o'clock, she arrives at the surgery.
Aujourd'hui, il y a beaucoup de gens malades.	Today, there are lots of patients waiting.
Voici Antoine. Il est malade.	This is Antoine. He's poorly.
"Qu'est-ce qui ne va pas, Antoine ?" "J'ai mal à la tête."	"What's the matter Antoine?" "I've got a headache."
"Prends ce médicament. Ça ira mieux." "Merci Madame !"	"Take this medicine; you will feel better." "Thank you Doctor!"
Voici Mélissa. Elle est malade.	This is Mélissa. She's poorly.
"Qu'est-ce qui ne va pas, Mélissa ?" "J'ai mal au pouce."	"What's the matter Mélissa?" "I've got a sore thumb."
"Prends ce médicament. Ça ira mieux." "Merci Madame !"	"Take this medicine; you will feel better." "Thank you Doctor!"
Il y a toujours beaucoup de gens malades.	There are still lots of patients waiting.
Voici Bernadette-Sophie. Elle est malade.	This is Bernadette-Sophie. She's poorly.
"Qu'est-ce qui ne va pas, Bernadette-Sophie ?" "J'ai mal aux dents."	"What's the matter Bernadette-Sophie?" "I've got toothache."
"Prends ce médicament. Ça ira mieux." "Merci Madame !"	"Take this medicine; you will feel better." "Thank you Doctor!"
Voici Xavier. Il est malade.	This is Xavier. He's poorly.
"Qu'est-ce qui ne va pas, Xavier ?" "J'ai mal au genou."	"What's the matter Xavier?" "I've got a sore knee."
"Voilà. Ça ira mieux." "Merci Madame !"	"There you are; you'll feel better." "Thank you Doctor!"
Il y a toujours beaucoup de gens malades.	There are still lots of patients waiting.
À dix heures et demie, Docteur Santé boit un grand café, mais elle est toujours fatiguée.	At ten-thirty am, Doctor Santé has a large cup of coffee, but she is still tired.
La journée continue...	The day goes on...
"Je m'appelle Marius. J'ai mal à la gorge."	"My name is Mariusz. I've got a sore throat."
"Je m'appelle Zizu. J'ai mal à l'oreille."	"My name is Zizu. I've got ear ache."
"Je m'appelle Pilou. J'ai mal au coeur."	"My name is Pilou. I feel sick."
"Je m'appelle Joséphine. J'ai mal au ventre."	"My name is Joséphine. I've got tummy ache."
Pauvre Docteur Santé ! Elle veut dormir.	Poor Dr Santé! She wants to go to sleep.
Finalement, les derniers gens arrivent.	Finally, here come the last people.
"Bonjour, assieds-toi. Et qu'est-ce qui ne va pas ?"	"Hello, sit down. And what's the matter with you?"
"Rien. Je ne suis pas malade."	"Nothing. I'm not sick."
"Mais, si tu n'es pas malade, pourquoi es-tu ici ?"	"But, if you're not sick, why are you here?"
"C'est moi, maman : Nicolas. Papa et moi sommes ici pour te ramener à la maison !"	"It's me mummy: Nicholas. Daddy and I have come to take you home!"
"Génial ! Je suis très fatiguée ; allons-y !"	"Brilliant! I'm really tired; let's go!"
"Tu as passé une bonne journée maman ?...Maman ?"	"Have you had a good day mummy?...Mummy?"

Can you write a short play in French?

Compare Pulse Rates

Pick an exercise from your investigation that all the members of your family can do.

What exercise will you be doing? _____

How long for? _____

Name of family member	Age	Pulse rate (resting)	Pulse rate (after exercise)

Conclusion:

_____

_____

_____

_____

Tudor House

1. Jetty - Each floor was built a little larger than the floor underneath. This created an overhang effect.

2. Walls - Walls were half-timbered and the beams were left exposed.

3. Daub - Daub was a form of plaster, which was made from a mix of wet soil, sand, clay, straw and sometimes animal dung, that was used to coat the exterior walls in many Tudor homes. The daub was then lime-washed white.

4. Windows - Glass was expensive as each pane was made by hand. These were called 'casement windows'.

5. Timbers - The wooden timbers were often coated with black tar to protect them from rotting.

6. Roof - Older tudor houses had thatched roofs but most had roofs made from slate or stone tiles.

7. Chimney - Chimneys were patterned, and the bricks were made from moulded clay.

Spies and Espionage

Caesar Cipher Code Wheel

In the world of espionage, keeping information a secret is vital. Messages can be encrypted – made secret and decrypted – turned into plain text. One of the simplest ways to encrypt information is by using a Caesar Cipher. Named after the Roman Emperor Julius Caesar because he used it to communicate with his generals, this method involves 'shifting' the alphabet forwards so that each letter matches up to a different letter. In the table below, the alphabet has been shifted 4 places forwards. The number of places the alphabet is moved forwards is called the 'key' so the code set out below is a **Caesar Cipher with a key of 4.**

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d

We can then use this code to either encrypt or decrypt messages.

e.g. ESPIONAGE would become **iwtmsreki** in code.

1. Can you decode this message using the same key?

   aipp hsri kssh wxevx = _

   You can make the encryption and decryption process easier by using a cipher wheel to represent the shifts in the alphabet. If you are sending a message to someone else then you only need to provide them with the **key.**

2. Cut out the two wheels on the last page (printing or sticking them on to card would work even better) and fit them together one on top of the other, using a paper fastener pushed through the point which marks the centre of each wheel. Turn the paper fastener round one complete turn to ensure the wheel can rotate smoothly.

3. Line up the wheels so that both A's are matching. Imagine that you have been given a Caesar Cipher key of 6 – turn the inner wheel 6 spaces to the left in the direction indicated by the arrow. Your wheel is now set up to encrypt and decrypt using a key of 6. Use a paper clip if you want to hold the wheels in place to ensure your accuracy.

   If you are *encrypting* use the letter on the inside in your code.

   If you are *decrypting*, your message will come from the plain text letters on the outside.

4. Using the key of 6 can you decode this message?

   XOMNZ GMGOT _ _ _ _ _ _ _ _ _ _

5. Well done – now choose your own key ___ and encrypt the following message:

   You cant read this now _

   Fantastic! You have completed your basic training in Caesar Cipher Code!

6. Now you are ready to add the code wheel to your project. Stick the bigger disc down in your chosen place with the lower case letter 'a' facing 12 o'clock. Check that the inside disc can circulate freely.

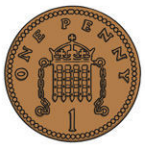
   Did you know? Some messages from spies have been found in hollowed out coins – almost impossible to spot in a pocket full of change!

7. Cut out the coins below and their bases. Stick the bases on to your project and stick the top part of the coin so the flap can be used to open and close the front of the coin.

8. Write a message to be decoded using the cipher wheel on the inside of each of the hollow coins. The value of the coin could be used as the 'key' for the code or you could find another ingenious way to indicate the key – e.g. a maths sum could reveal the answer!

Stick this side into your book

Stick this side into your book



Stick this side into your book

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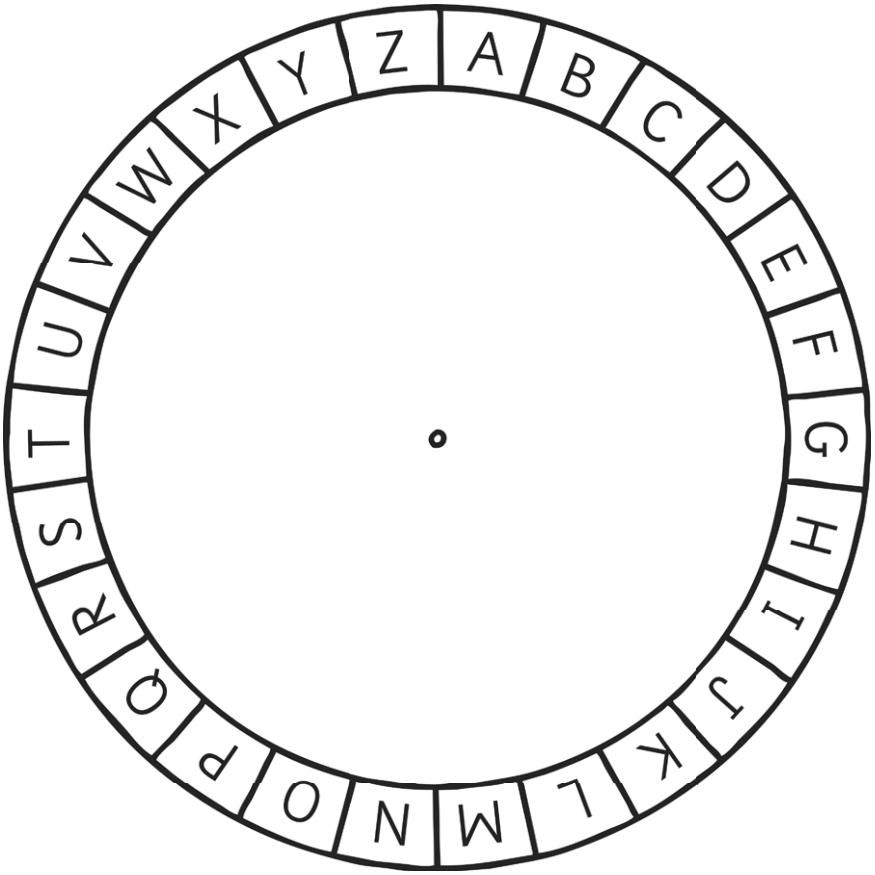
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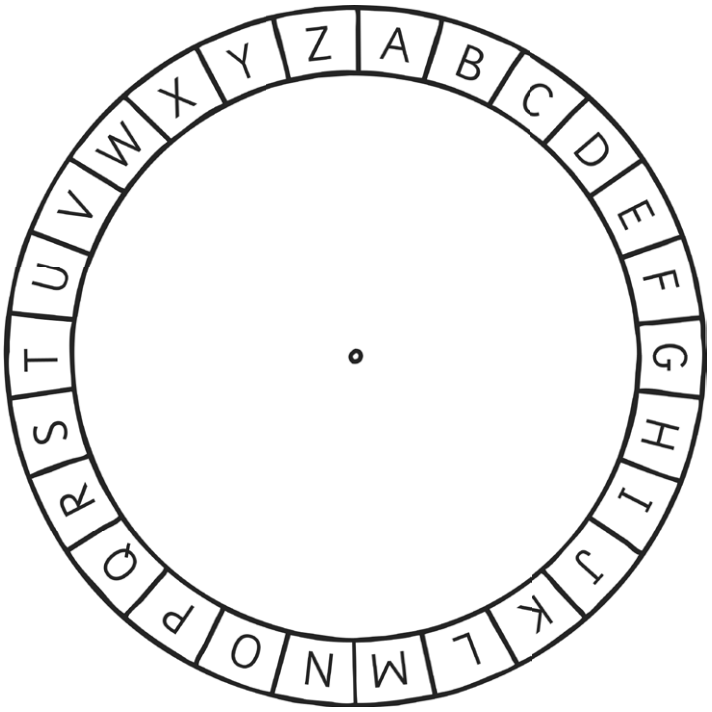
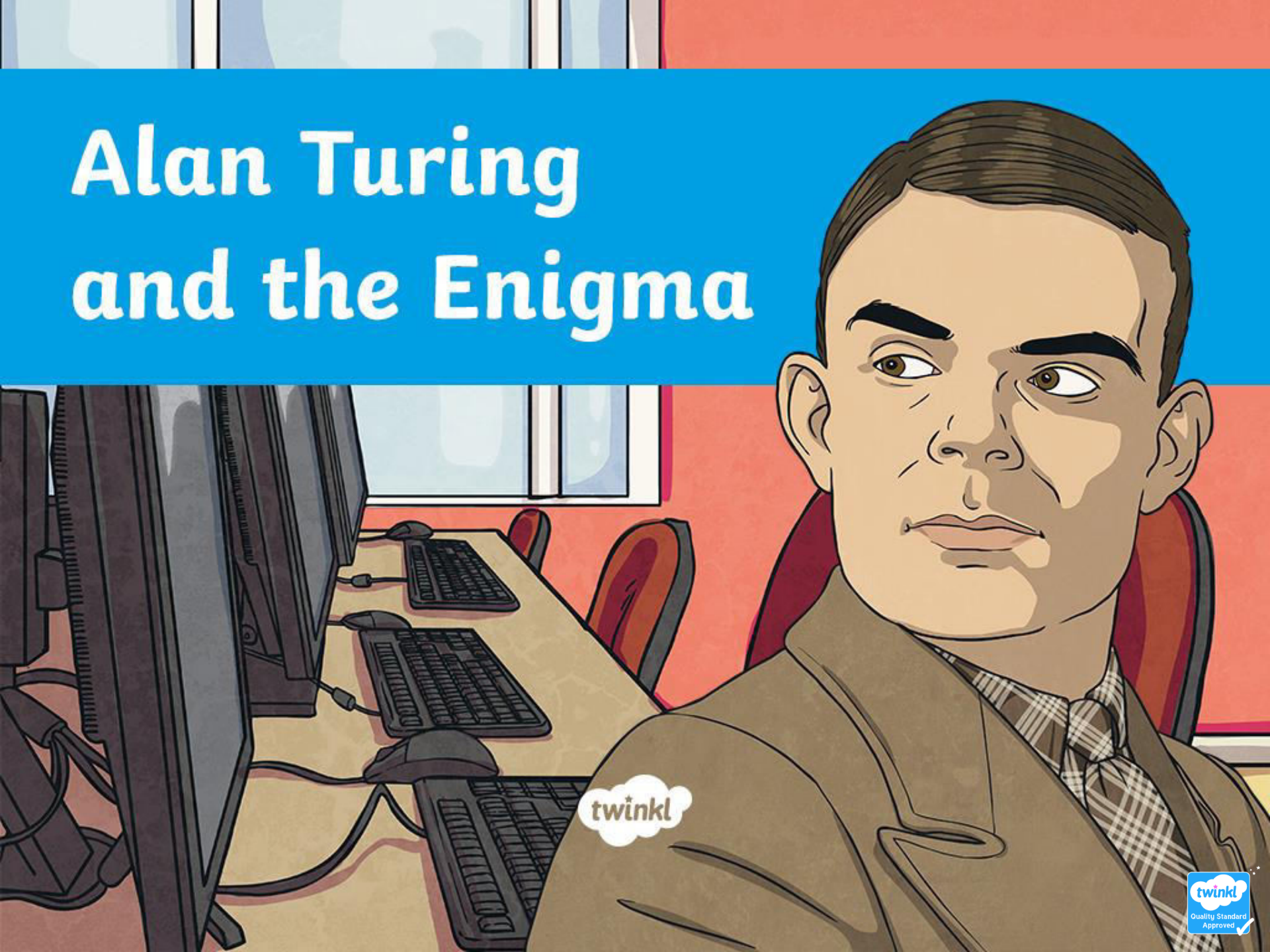

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Alan Turing and the Enigma



Who Was Alan Turing?

Alan Turing was a British mathematician. During the Second World War, he worked as a codebreaker, cracking German codes created by Enigma machines. His work was pivotal in the Allies' victory.

Alan Turing was born on 23rd June 1912. He had an older brother called John. Their father worked for the British civil service in India.

Turing's parents wanted their sons to be raised in Britain so the boys stayed with family friends while their parents were in India.

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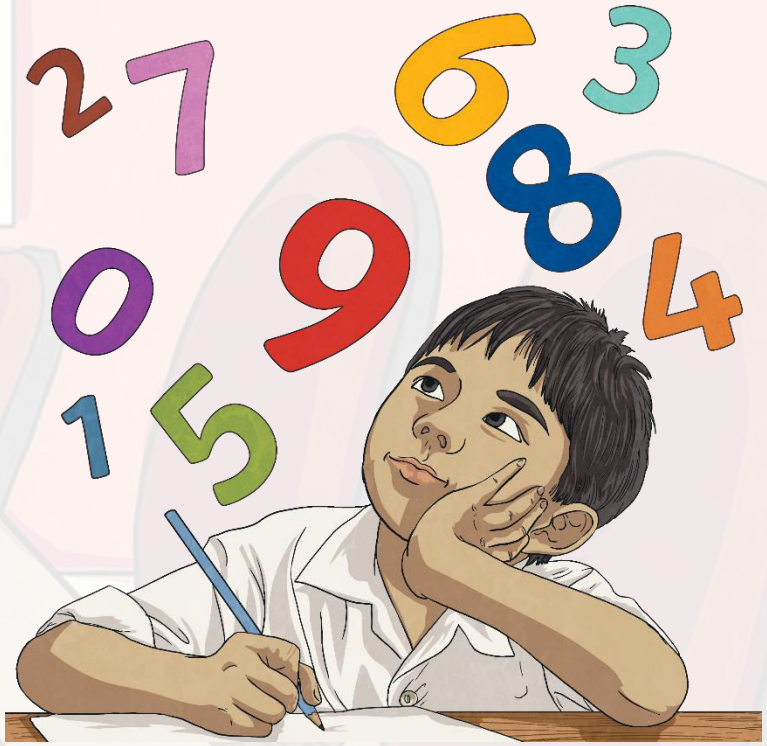
Alan Turing's Education

When Turing was 13, he went to a boarding school called Sherborne School. At the time, the school did not place much emphasis on mathematics and science so Alan felt quite discouraged.

While at the school, his close friend Christopher Morcom died of a disease called tuberculosis. Turing's grief inspired him to dedicate himself to scientific discoveries.

He later won a scholarship to study mathematics at King's College, Cambridge. He obtained a degree in mathematics with distinction.



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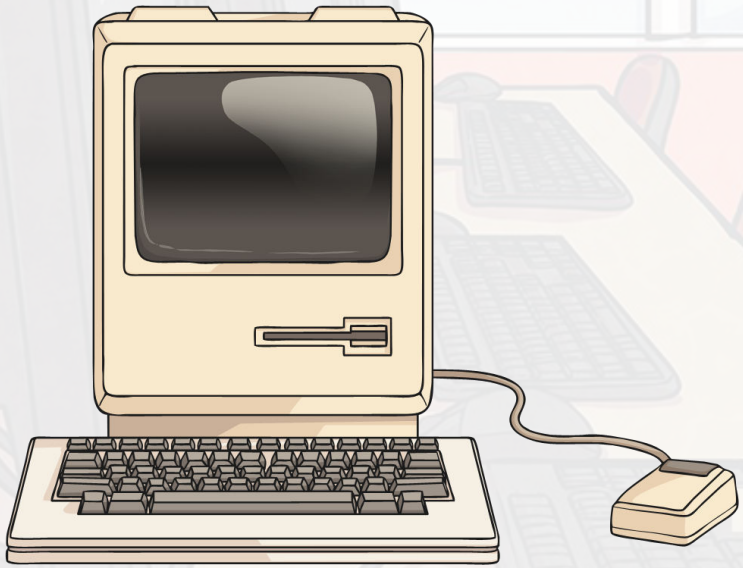
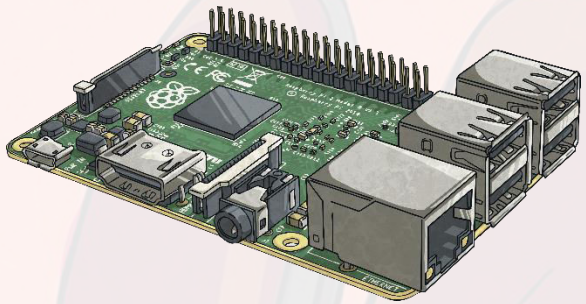
The Universal Machine

In 1936, Turing created the idea of a special machine that could follow simple codes. He called this the 'Universal Machine'.

These machines are now known as a 'Universal Turing Machine' and they formed a lot of the ideas behind computing.





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Second World War

Cryptanalysis is the study of **encrypted** messages. During the Second World War, Germany sent encrypted messages about its military strategies. To win the war, it was vital that the Allies were able to decode these messages.

A team of workers at a place called Bletchley Park were set the task of decoding these messages.

Encrypted – where information is changed into a code so it can only be understood by the recipient.

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Second World War

Not long after the First World War, a German man named Arthur Scherbius invented a machine called the Enigma.

The Enigma was a machine that looked like a typewriter. As you typed in your message, a different letter lit up. The message was converted into a code using these illuminated letters. The person receiving the message also had an Enigma. When they typed in the coded message, the letters from the original message lit up and it could be read. This meant that orders could be passed secretly.

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Bletchley Park

Bletchley Park is a stately home in Buckinghamshire. During the Second World War, it was the home of the Government Code and Cipher School (GC&CS).

Turing started work at Bletchley Park. Soon after his arrival, he had devised a way of cracking the German's code. He invented something called a 'Bombe', which tried out lots of different solutions for breaking a code before finding the correct one.

Although the 'Bombe' was successful, Bletchley Park didn't have enough machines or the workers to read all the German messages. Turing wrote to the prime minister, Winston Churchill. Before long, Bletchley Park had more workers and more 'Bombes'.

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The Impact of Turing's Work

Breaking the German code meant the Allies knew when and where attacks were planned.

Without Turing's discovery, military experts believe that the Second World War could have carried on for another two years. Consequently, millions of lives were saved.

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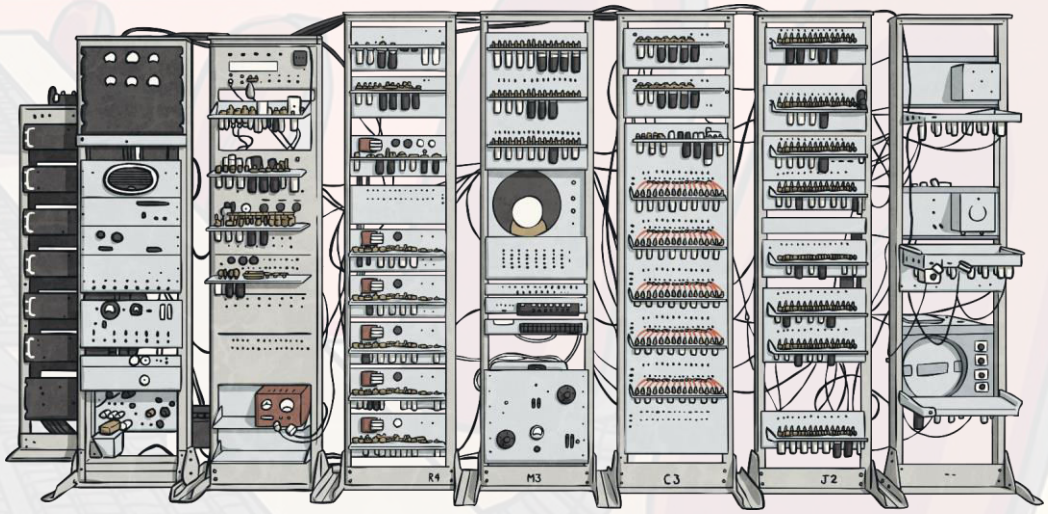
Turing's Work

Turing was awarded the OBE (Order of the British Empire) in 1946 for his wartime work.

He died on 7th June 1954.

On 15th July 2019, the Bank of England announced that Alan Turing's image will be featured on the new £50 note, which is due to enter circulation in 2021.



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Try It!

Try making your own Enigma code. Swap each letter in the alphabet with another one. For example, 'A' might become 'Q' and 'R' might become 'E'.

Once each letter has been allocated a different letter, write a coded message to your partner. Give them some clues: tell them which letter represents 'E', 'T' and 'H'. Can your partner work out the message? They might need to be given a few more letters.

A = Q, R = E, T = B, H = O

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Turing's Tragedy

Owing to the laws surrounding sexuality, Turing fought against prejudice through his life because he was homosexual. This led to him being arrested. Sadly, he died shortly after this on 7th June 1954.

In 2009, the British Government publicly apologised for the prejudice shown towards Turing.

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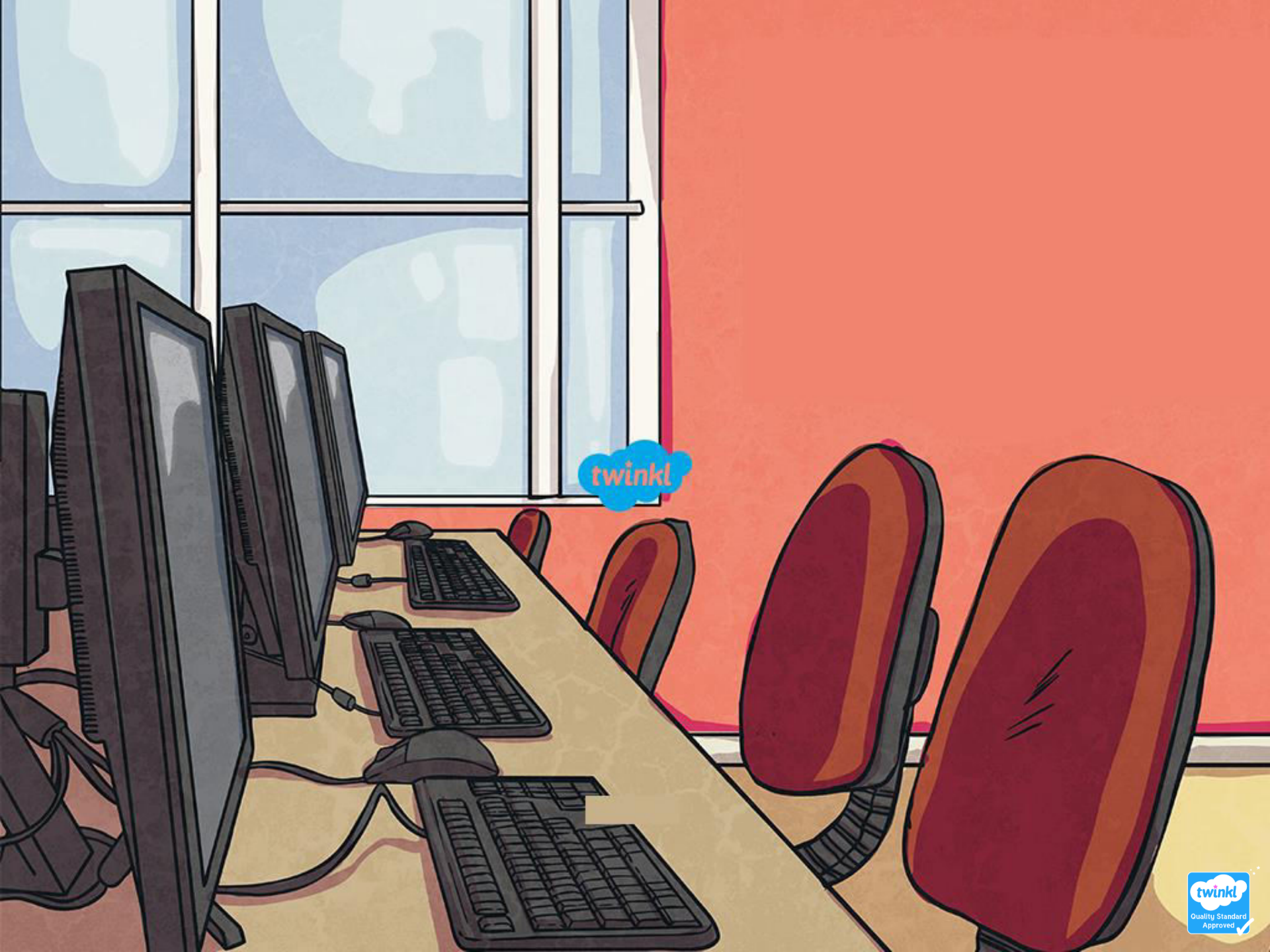
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History: Numbers and Symbols as Codes

Numbers have often been used as code in the past. Why might code have been used? For spying and plotting? During war?

Using the resources in your pack, write a paragraph to show how numbers were used as codes in the past. What Century were they used in? Who were they used by? How did the code system work? In the last box, look for ways that numbers are used as codes now. You have been given examples to help you get started.

Example	Explanation
The Caesar Cipher Code Wheel	
Alan Turing and the Enigma Code	
Examples of numbers used as codes • Passport identification • Number plates • Binary code • Barcodes	

Year 6 | Test 1

Name ..... Date .....

Time at start of test ..... Time at end of test .....

1) 40 × 12 = ☐

2) 90 × 8 = ☐

3) 500 ÷ 10 = ☐

4) 480 ÷ 40 = ☐

5) 12 × ☐ = 840

6) 48 ÷ 8 = ☐

7) 60 × ☐ = 180

8) 5.5 ÷ 0.5 = ☐

9) 1 × ☐ = 2

10) 18 ÷ ☐ = 2

11) 50 × 5 = ☐

12) 80 ÷ 40 = ☐

13) 24 ÷ 3 = ☐

14) 300 ÷ 50 = ☐

15) 7 × 1 = ☐

16) 9 × 0.8 = ☐

17) 7 × 80 = ☐

18) 80 ÷ 4 = ☐

19) 5 × 12 = ☐

20) 64 ÷ 8 = ☐

21) 24 ÷ 2 = ☐

22) 3.5 ÷ 5 = ☐

23) 5 × 0.7 = ☐

24) 0.8 × 3 = ☐

25) 7.2 ÷ 0.8 = ☐

26) 560 ÷ 7 = ☐

27) 5 × 0.4 = ☐

28) 9 × ☐ = 540

29) 350 ÷ 70 = ☐

30) 1200 ÷ ☐ = 12

31) 8 × 30 = ☐

32) 20 × ☐ = 40

33) 5 ÷ ☐ = 1

34) 500 ÷ 5 = ☐

35) 9 × 50 = ☐

36) 0.7 × 5 = ☐

37) 960 ÷ 12 = ☐

38) 330 ÷ 11 = ☐

39) 10 × 0.6 = ☐

40) 0.2 × 3 = ☐

41) 9.6 ÷ ☐ = 0.8

42) 10 × 5 = ☐

43) 480 ÷ 40 = ☐

44) 7 × 10 = ☐

45) 2.5 ÷ 0.5 = ☐

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Year 6 | Test 1 – Assessment

How did you do? Colour in the question numbers you got correct. The more white spaces you have for a section the more you need to practise that times table or operation.

Multiple of 10

1	2	3	4	5	7	11	12	14	17	18	28	29	30	31	32
34	35	37	38	43	26										

Decimals

8	16	22	23	24	25	27	36	39	40	41	45				

Multiplication

1	2	7	9	11	15	16	17	19	23	24	27	28	31	35	36
39	40	42	44	5	32										

Division

3	4	6	8	10	12	13	14	18	20	21	22	25	26	29	30
33	34	37	38	41	43	45									

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Year 6 | Test 2

Name ..... Date .....

Time at start of test ..... Time at end of test .....

1) $2 \times 8 =$ ☐

2) $80 \div$ ☐ $= 4$

3) $9 \times 0.4 =$ ☐

4) $990 \div 90 =$ ☐

5) $0.6 \times 12 =$ ☐

6) $360 \div 40 =$ ☐

7) $6 \div$ ☐ $= 0.6$

8) $0.7 \times 11 =$ ☐

9) $400 \div 50 =$ ☐

10) $10 \times 0.2 =$ ☐

11) $900 \div 90 =$ ☐

12) $0.8 \times 12 =$ ☐

13) $10 \div 1 =$ ☐

14) $7 \times 9 =$ ☐

15) $5.6 \div 7 =$ ☐

16) $4 \times 80 =$ ☐

17) $6 \times 110 =$ ☐

18) $160 \div 80 =$ ☐

19) $270 \div$ ☐ $= 90$

20) $0.6 \times$ ☐ $= 3$

21) $15 \div 5 =$ ☐

22) $80 \times 6 =$ ☐

23) $8 \div 4 =$ ☐

24) $6 \times 50 =$ ☐

25) $1.5 \div 0.3 =$ ☐

26) $6 \times 40 =$ ☐

27) $2.1 \div 7 =$ ☐

28) $12 \times 50 =$ ☐

29) $49 \div 7 =$ ☐

30) $1.5 \div 5 =$ ☐

31) $4 \times 0.2 =$ ☐

32) $5 \times 8 =$ ☐

33) $30 \times 2 =$ ☐

34) $21 \div 7 =$ ☐

35) $0.6 \div 2 =$ ☐

36) $5 \times$ ☐ $= 500$

37) $800 \div 8 =$ ☐

38) $0.9 \times 3 =$ ☐

39) $4.5 \div 5 =$ ☐

40) $9 \times 70 =$ ☐

41) ☐ $\times 8 = 5.6$

42) $200 \div 4 =$ ☐

43) $80 \div 8 =$ ☐

44) $11 \times 20 =$ ☐

45) $5 \times 4 =$ ☐

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Year 6 | Test 2 – Assessment

How did you do? Colour in the question numbers you got correct. The more white spaces you have for a section the more you need to practise that times table or operation.

1-12x

1	13	14	24	29	32	43	45								

Multiple of 10

2	4	6	9	11	16	17	18	19	22	24	26	28	33	36	37
40	42	43	44												

Decimals

3	5	7	8	10	12	15	20	25	27	30	31	35	38	39	41

Multiplication

1	3	5	8	10	12	14	16	17	20	22	24	26	28	31	32
33	36	38	40	41	44	45									

Division

2	4	6	7	9	11	13	15	18	19	21	23	25	27	29	30
34	35	37	39	42	43										

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Year 6 | Test 3

Name ..... Date .....

Time at start of test ..... Time at end of test .....

1) 2.4 ÷ 0.2 = ☐

2) 4 × ☐ = 1.6

3) 11 × 100 = ☐

4) 0.6 ÷ 2 = ☐

5) 30 × 10 = ☐

6) 5 ÷ 0.5 = ☐

7) 1 × 10 = ☐

8) 0.2 ÷ 2 = ☐

9) 40 ÷ 10 = ☐

10) 160 ÷ 2 = ☐

11) 7 × 90 = ☐

12) 60 × 3 = ☐

13) 100 ÷ 5 = ☐

14) 40 × 8 = ☐

15) 8 × 3 = ☐

16) 0.5 × ☐ = 2.5

17) 0.9 ÷ 3 = ☐

18) 360 ÷ 60 = ☐

19) 10 × 4 = ☐

20) 3 × ☐ = 270

21) 1080 ÷ 12 = ☐

22) 50 × 6 = ☐

23) 7 × 0.6 = ☐

24) 770 ÷ 70 = ☐

25) 9 × 0.9 = ☐

26) 2.7 ÷ 0.9 = ☐

27) 240 ÷ 6 = ☐

28) 70 × ☐ = 770

29) 210 ÷ 30 = ☐

30) 9 × 4 = ☐

31) 9.9 ÷ 0.9 = ☐

32) 20 × 11 = ☐

33) 5 × 0.3 = ☐

34) 60 × 7 = ☐

35) 700 ÷ 7 = ☐

36) 600 ÷ 6 = ☐

37) 270 ÷ 9 = ☐

38) 8 × 12 = ☐

39) 630 ÷ 90 = ☐

40) 10 × ☐ = 10

41) 0.3 × 9 = ☐

42) 6 × 100 = ☐

43) 640 ÷ 8 = ☐

44) 120 ÷ 4 = ☐

45) 11 × 0.5 = ☐

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Year 6 | Test 3 – Assessment

How did you do? Colour in the question numbers you got correct. The more white spaces you have for a section the more you need to practise that times table or operation.

1-12x

7	15	19	30	38	40										

Multiple of 10

3	5	9	10	11	12	13	14	18	20	21	22	24	27	28	29
32	34	35	37	39	42	43	44								

Decimals

1	2	4	6	8	16	17	23	25	26	31	33	41	45		

Multiplication

2	3	5	7	11	12	14	15	16	19	20	22	23	25	28	30
32	33	34	38	40	41	42	45								

Division

1	4	6	8	9	10	13	17	18	21	24	26	27	29	31	35
36	37	39	43	44											

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Year 6 | Test 4

Name ..... Date .....

Time at start of test ..... Time at end of test .....

1) 18 ÷ 3 = ☐

2) 24 ÷ 6 = ☐

3) 0.4 × 7 = ☐

4) 2 × 40 = ☐

5) 6 × 0.2 = ☐

6) 0.2 × 4 = ☐

7) 300 ÷ 6 = ☐

8) 21 ÷ 3 = ☐

9) 20 × 5 = ☐

10) 270 ÷ 30 = ☐

11) 2.5 ÷ 0.5 = ☐

12) 10 × 80 = ☐

13) 10.8 ÷ 12 = ☐

14) 18 ÷ 3 = ☐

15) 100 × 11 = ☐

16) 12 × ☐ = 96

17) 12 × 3 = ☐

18) 630 ÷ 9 = ☐

19) 810 ÷ 9 = ☐

20) 4 × ☐ = 1.6

21) 48 ÷ 12 = ☐

22) 180 ÷ 20 = ☐

23) 40 × 9 = ☐

24) 5 × 1 = ☐

25) 16 ÷ 4 = ☐

26) 44 ÷ 4 = ☐

27) 40 × 3 = ☐

28) 12 × 100 = ☐

29) 5 × 20 = ☐

30) 14 ÷ 2 = ☐

31) 5 × 0.8 = ☐

32) 1.8 ÷ 0.9 = ☐

33) 30 × 9 = ☐

34) 4.5 ÷ ☐ = 9

35) 0.9 × 3 = ☐

36) 54 ÷ 6 = ☐

37) 1.2 ÷ 3 = ☐

38) 7 × ☐ = 560

39) 9 × 50 = ☐

40) 10.8 ÷ 0.9 = ☐

41) 80 ÷ 40 = ☐

42) 450 ÷ ☐ = 5

43) 11 ÷ 10 = ☐

44) 5 × 40 = ☐

45) 3.6 ÷ 12 = ☐

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Year 6 | Test 4 – Assessment

How did you do? Colour in the question numbers you got correct. The more white spaces you have for a section the more you need to practise that times table or operation.

1-12x

1	2	8	14	16	17	21	24	25	26	30	36			

Multiple of 10

4	7	9	10	12	15	18	19	22	23	27	28	29	33	38
39	41	42	44											

Decimals

3	5	6	11	13	20	31	32	34	35	37	40	45		

Multiplication

3	4	5	6	9	12	15	16	17	20	23	24	27	28	29
31	33	35	38	39	44									

Division

1	2	7	8	10	11	13	14	18	19	21	22	25	26	30
32	34	36	37	40	41	43	45							

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Year 6 | Test 5

Name ..... Date .....

Time at start of test ..... Time at end of test .....

1) 4.5 ÷ 5 = ☐

2) 40 × 8 = ☐

3) 3 × ☐ = 2.7

4) 27 ÷ ☐ = 9

5) 9 × 6 = ☐

6) 11 × 50 = ☐

7) 2.4 ÷ 0.3 = ☐

8) 220 ÷ 11 = ☐

9) 30 × 6 = ☐

10) 88 ÷ 11 = ☐

11) 12 × 0.5 = ☐

12) 4.8 ÷ 8 = ☐

13) 2 ÷ ☐ = 2.5

14) 9 × 50 = ☐

15) 1100 ÷ 100 = ☐

16) 0.5 × 6 = ☐

17) ☐ × 1 = 12

18) 8 ÷ 4 = ☐

19) 100 ÷ 10 = ☐

20) 12 × 8 = ☐

21) 0.9 × 2 = ☐

22) 400 ÷ 100 = ☐

23) 11 ÷ 1 = ☐

24) 1 × 2 = ☐

25) 3 × 40 = ☐

26) 60 ÷ 10 = ☐

27) 12 × 2 = ☐

28) 1.2 ÷ 6 = ☐

29) 12 × 0.1 = ☐

30) 80 ÷ 20 = ☐

31) 220 ÷ 110 = ☐

32) 70 × 9 = ☐

33) 5 × ☐ = 30

34) 0.4 × 5 = ☐

35) 2.8 ÷ 0.7 = ☐

36) 100 ÷ 50 = ☐

37) 7 × 0.7 = ☐

38) 120 ÷ 10 = ☐

39) 90 × 9 = ☐

40) 3.6 ÷ 9 = ☐

41) 270 ÷ 90 = ☐

42) 60 × 5 = ☐

43) 8 × 0.4 = ☐

44) 1.6 ÷ 8 = ☐

45) 1100 ÷ 100 = ☐

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Year 6 | Test 5 – Assessment

How did you do? Colour in the question numbers you got correct. The more white spaces you have for a section the more you need to practise that times table or operation.

1-12x

4	5	10	17	18	19	20	23	24	27	38					

Multiple of 10

2	6	8	9	14	15	22	25	26	30	31	32	36	39	41	42
45															

Decimals

1	3	7	11	12	13	16	21	28	29	34	35	37	40	43	44

Multiplication

2	3	5	6	9	11	14	16	17	20	21	24	25	27	29	32
33	34	37	39	42	43										

Division

1	4	7	8	10	12	13	15	18	19	22	23	26	28	30	31
35	36	38	40	41	44	45									

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Year 6 | Test 1 – Answers

1) 40 × 12 = **480**
2) 90 × 8 = **720**
3) 500 ÷ 10 = **50**
4) 480 ÷ 40 = **12**
5) 12 × **70** = 840
6) 48 ÷ 8 = **6**
7) 60 × **3** = 180
8) 5.5 ÷ 0.5 = **11**
9) 1 × **2** = 2
10) 18 ÷ **9** = 2
11) 50 × 5 = **250**
12) 80 ÷ 40 = **2**
13) 24 ÷ 3 = **8**
14) 300 ÷ 50 = **6**
15) 7 × 1 = **7**
16) 9 × 0.8 = **7.2**
17) 7 × 80 = **560**
18) 80 ÷ 4 = **20**
19) 5 × 12 = **60**
20) 64 ÷ 8 = **8**
21) 24 ÷ 2 = **12**
22) 3.5 ÷ 5 = **0.7**
23) 5 × 0.7 = **3.5**
24) 0.8 × 3 = **2.4**
25) 7.2 ÷ 0.8 = **9**
26) 560 ÷ 7 = **80**
27) 5 × 0.4 = **2**
28) 9 × **60** = 540
29) 350 ÷ 70 = **5**
30) 1200 ÷ **100** = 12
31) 8 × 30 = **240**
32) 20 × **2** = 40
33) 5 ÷ **5** = 1
34) 500 ÷ 5 = **100**
35) 9 × 50 = **450**
36) 0.7 × 5 = **3.5**
37) 960 ÷ 12 = **80**
38) 330 ÷ 11 = **30**
39) 10 × 0.6 = **6**
40) 0.2 × 3 = **0.6**
41) 9.6 ÷ 12 = **0.8**
42) 10 × 5 = **50**
43) 480 ÷ 40 = **12**
44) 7 × 10 = **70**
45) 2.5 ÷ 0.5 = **5**

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Year 6 | Test 2 – Answers

1) 2 × 8 = **16**
2) 80 ÷ **20** = 4
3) 9 × 0.4 = **3.6**
4) 990 ÷ 90 = **11**
5) 0.6 × 12 = **7.2**
6) 360 ÷ 40 = **9**
7) 6 ÷ **10** = 0.6
8) 0.7 × 11 = **7.7**
9) 400 ÷ 50 = **8**
10) 10 × 0.2 = **2**
11) 900 ÷ 90 = **10**
12) 0.8 × 12 = **9.6**
13) 10 ÷ 1 = **10**
14) 7 × 9 = **63**
15) 5.6 ÷ 7 = **0.8**
16) 4 × 80 = **320**
17) 6 × 110 = **660**
18) 160 ÷ 80 = **2**
19) 270 ÷ **30** = 9
20) 0.6 × **5** = 3
21) 15 ÷ 5 = **3**
22) 80 × 6 = **480**
23) 8 ÷ 4 = **2**
24) 6 × 50 = **300**
25) 1.5 ÷ 0.3 = **5**
26) 6 × 40 = **240**
27) 2.1 ÷ 7 = **0.3**
28) 12 × 50 = **600**
29) 49 ÷ 7 = **7**
30) 1.5 ÷ 5 = **0.3**
31) 4 × 0.2 = **0.8**
32) 5 × 8 = **40**
33) 30 × 2 = **60**
34) 21 ÷ 7 = **3**
35) 0.6 ÷ 2 = **0.3**
36) 5 × **100** = 500
37) 800 ÷ 8 = **100**
38) 0.9 × 3 = **2.7**
39) 4.5 ÷ 5 = **0.9**
40) 9 × 70 = **630**
41) **0.7** × 8 = 5.6
42) 200 ÷ 4 = **50**
43) 80 ÷ 8 = **10**
44) 11 × 20 = **220**
45) 5 × 4 = **20**

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Year 6 | Test 3 – Answers

1) 2.4 ÷ 0.2 = **12**

2) 4 × **0.4** = 1.6

3) 11 × 100 = **1100**

4) 0.6 ÷ 2 = **0.3**

5) 30 × 10 = **300**

6) 5 ÷ 0.5 = **10**

7) 1 × 10 = **10**

8) 0.2 ÷ 2 = **0.1**

9) 40 ÷ 10 = **4**

10) 160 ÷ 2 = **80**

11) 7 × 90 = **630**

12) 60 × 3 = **180**

13) 100 ÷ 5 = **20**

14) 40 × 8 = **320**

15) 8 × 3 = **24**

16) 0.5 × **5** = 2.5

17) 0.9 ÷ 3 = **0.3**

18) 360 ÷ 60 = **6**

19) 10 × 4 = **40**

20) 3 × **90** = 270

21) 1080 ÷ 12 = **90**

22) 50 × 6 = **300**

23) 7 × 0.6 = **4.2**

24) 770 ÷ 70 = **11**

25) 9 × 0.9 = **8.1**

26) 2.7 ÷ 0.9 = **3**

27) 240 ÷ 6 = **40**

28) 70 × **11** = 770

29) 210 ÷ 30 = **7**

30) 9 × 4 = **36**

31) 9.9 ÷ 0.9 = **11**

32) 20 × 11 = **220**

33) 5 × 0.3 = **1.5**

34) 60 × 7 = **420**

35) 700 ÷ 7 = **100**

36) 600 ÷ 6 = **100**

37) 270 ÷ 9 = **30**

38) 8 × 12 = **96**

39) 630 ÷ 90 = **7**

40) 10 × **1** = 10

41) 0.3 × 9 = **2.7**

42) 6 × 100 = **600**

43) 640 ÷ 8 = **80**

44) 120 ÷ 4 = **30**

45) 11 × 0.5 = **5.5**

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Year 6 | Test 4 – Answers

1) 18 ÷ 3 = **6**
2) 24 ÷ 6 = **4**
3) 0.4 × 7 = **2.8**
4) 2 × 40 = **80**
5) 6 × 0.2 = **1.2**
6) 0.2 × 4 = **0.8**
7) 300 ÷ 6 = **50**
8) 21 ÷ 3 = **7**
9) 20 × 5 = **100**
10) 270 ÷ 30 = **9**
11) 2.5 ÷ 0.5 = **5**
12) 10 × 80 = **800**
13) 10.8 ÷ 12 = **0.9**
14) 18 ÷ 3 = **6**
15) 100 × 11 = **1100**
16) 12 × **8** = 96
17) 12 × 3 = **36**
18) 630 ÷ 9 = **70**
19) 810 ÷ 9 = **90**
20) 4 × **0.4** = 1.6
21) 48 ÷ 12 = **4**
22) 180 ÷ 20 = **9**
23) 40 × 9 = **360**
24) 5 × 1 = **5**
25) 16 ÷ 4 = **4**
26) 44 ÷ 4 = **11**
27) 40 × 3 = **120**
28) 12 × 100 = **1200**
29) 5 × 20 = **100**
30) 14 ÷ 2 = **7**
31) 5 × 0.8 = **4**
32) 1.8 ÷ 0.9 = **2**
33) 30 × 9 = **270**
34) 4.5 ÷ **0.5** = 9
35) 0.9 × 3 = **2.7**
36) 54 ÷ 6 = **9**
37) 1.2 ÷ 3 = **0.4**
38) 7 × **80** = 560
39) 9 × 50 = **450**
40) 10.8 ÷ 0.9 = **12**
41) 80 ÷ 40 = **2**
42) 450 ÷ **90** = 5
43) 11 ÷ 10 = **1.1**
44) 5 × 40 = **200**
45) 3.6 ÷ 12 = **0.3**

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Year 6 | Test 5 – Answers

1) 4.5 ÷ 5 = **0.9**
2) 40 × 8 = **320**
3) 3 × **0.9** = 2.7
4) 27 ÷ **3** = 9
5) 9 × 6 = **54**
6) 11 × 50 = **550**
7) 2.4 ÷ 0.3 = **8**
8) 220 ÷ 11 = **20**
9) 30 × 6 = **180**
10) 88 ÷ 11 = **8**
11) 12 × 0.5 = **6**
12) 4.8 ÷ 8 = **0.6**
13) 2 ÷ **5** = 0.4
14) 9 × 50 = **450**
15) 1100 ÷ 100 = **11**
16) 0.5 × 6 = **3**
17) **12** × 1 = 12
18) 8 ÷ 4 = **2**
19) 100 ÷ 10 = **10**
20) 12 × 8 = **96**
21) 0.9 × 2 = **1.8**
22) 400 ÷ 100 = **4**
23) 11 ÷ 1 = **11**
24) 1 × 2 = **2**
25) 3 × 40 = **120**
26) 60 ÷ 10 = **6**
27) 12 × 2 = **24**
28) 1.2 ÷ 6 = **0.2**
29) 12 × 0.1 = **1.2**
30) 80 ÷ 20 = **4**
31) 220 ÷ 110 = **2**
32) 70 × 9 = **630**
33) 5 × **6** = 30
34) 0.4 × 5 = **2**
35) 2.8 ÷ 0.7 = **4**
36) 100 ÷ 50 = **2**
37) 7 × 0.7 = **4.9**
38) 120 ÷ 10 = **12**
39) 90 × 9 = **810**
40) 3.6 ÷ 9 = **0.4**
41) 270 ÷ 90 = **3**
42) 60 × 5 = **300**
43) 8 × 0.4 = **3.2**
44) 1.6 ÷ 8 = **0.2**
45) 1100 ÷ 100 = **11**

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THIRD SPACE LEARNING

What are your values?

Multiply decimals by integers

1 Use place value counters to solve the calculations.

a) 3.2 × 3 = ☐

Ones	Tenths
1 1 1	0.1 0.1
1 1 1	0.1 0.1
1 1 1	0.1 0.1

b) 4.6 × 2 = ☐

Ones	Tenths
1 1 1 1	0.1 0.1 0.1 0.1 0.1 0.1
1 1 1 1	0.1 0.1 0.1 0.1 0.1 0.1

2 Solve the multiplication. Draw your answer.

12.2 × 3 = ☐

Tens	Ones	Tenths

3 Nijah uses long multiplication to solve 3.72 × 3

		3	7	2	
	×			3	
		0	0	6	
		2	1	0	
		9	0	0	
	1	1	1	6	

Use long multiplication to work out the calculations.

a)

		4	8	6	
	×			4	

b)

		2	0	9	
	×			6	

4 Work out the multiplications.

a) 5.2 × 4 = ☐

b) 14.3 × 3 = ☐

c) 6 × 9.1 = ☐

d) ☐ = 2.34 × 3

e) 11.505 × 4 = ☐

f) 9.602 × 6 = ☐

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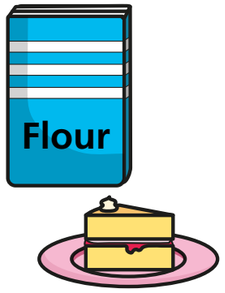
5 0.25 kg of flour is needed to make one cake.

How much flour is needed to make four cakes?



6 Work out the multiplications.

a) 7.2 × 2 = ☐

7.2 × 4 = ☐

14.4 × 4 = ☐

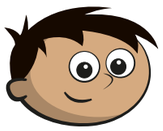
7.2 × 8 = ☐

b) ☐ = 3.45 × 3

☐ = 34.5 × 3

☐ = 345 × 3

7 Amir is solving 3.4 × 4



To solve this, I did 34 × 4, which was 136

Then I multiplied my answer by 10 to get an answer of 1,360

Do you agree with Amir? _____

Explain why.

8 Use the digits 1, 2, 3 and 4 once each to create a calculation.

1	2	3	4

☐ . ☐ ☐ × ☐

a) How many different products can you make?

b) What is the greatest possible product?

☐

c) What is the smallest possible product?

☐

d) What is the product closest to 12?

☐

Compare answers with a partner.

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Multiply decimals by integers

1 Use place value counters to solve the calculations.

a) 3.2 × 3 = 9·6

Ones	Tenths
1 1 1	0.1 0.1
1 1 1	0.1 0.1
1 1 1	0.1 0.1

b) 4.6 × 2 = 9·2

Ones	Tenths
1 1 1 1	0.1 0.1 0.1 0.1 0.1 0.1
1 1 1 1	0.1 0.1 0.1 0.1 0.1 0.1

2 Solve the multiplication. Draw your answer.

12.2 × 3 = 36·6

Tens	Ones	Tenths
0 0 0	0 0 0 0 0 0	0 0 0 0 0 0

3 Nijah uses long multiplication to solve 3.72 × 3

		3	7	2	
	×			3	
		0	0	6	
		2	1	0	
		9	0	0	
	1	1	1	6	

Use long multiplication to work out the calculations.

a)

		4	8	6	
	×			4	
		0	2	4	
		3	2	0	
	1	6	0	0	
	1	9	4	4	

b)

		2	0	9	
	×			6	
		0	5	4	
		0	0	0	
	1	2	0	0	
	1	2	5	4	

4 Work out the multiplications.

a) 5.2 × 4 = 20·8

b) 14.3 × 3 = 42·9

c) 6 × 9.1 = 54·6

d) 7·02 = 2.34 × 3

e) 11.505 × 4 = 46·02

f) 9.602 × 6 = 57·612

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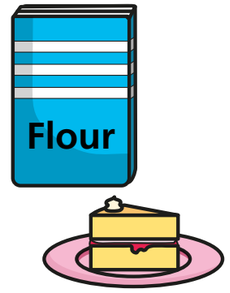
5 0.25 kg of flour is needed to make one cake.

How much flour is needed to make four cakes?



1 kg

6 Work out the multiplications.

a) 7.2 × 2 = 14·4

7.2 × 4 = 28·8

14.4 × 4 = 57·6

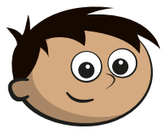
7.2 × 8 = 57·6

b) 10·35 = 3.45 × 3

103·5 = 34.5 × 3

1,035 = 345 × 3

7 Amir is solving 3.4 × 4



To solve this, I did 34 × 4, which was 136
Then I multiplied my answe by 10 to get an answer of 1,360

Do you agree with Amir? NO

Explain why.

34 is ten times bigger than 3·4 so he shawld have divided by 10 to get 13·6

8 Use the digits 1, 2, 3 and 4 once each to create a calculation..

1	2	3	4

☐ · ☐☐ × ☐

a) How many different products can you make?

b) What is the greatest possible product?

12·84

c) What is the smallest possible product?

2·34

d) What is the product closest to 12?

12·36

Compare answers with a partner.

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Divide decimals by integers

1 Use place value counters to work out the divisions.

a) 8.4 ÷ 4 = ☐

Ones	Tenths
1 1 1 1 1 1 1 1	0.1 0.1 0.1 0.1

b) 12.3 ÷ 3 = ☐

Tens	Ones	Tenths
10	1 1	0.1 0.1 0.1

2 Work out the division. Draw your answer.

16.4 ÷ 4 = ☐

Tens	Ones	Tenths

3 Brett uses short division to work out 13.2 ÷ 6

$$\begin{array}{r} 02.2 \\ 6\overline{)13^{1}.1^{1}2} \end{array}$$

Use short division to work out the calculations.

a)

$$\begin{array}{r} \\ 7\overline{)22.4} \end{array}$$

b)

$$\begin{array}{r} \\ 8\overline{)18.48} \end{array}$$

4 Work out the divisions.

a) 25.6 ÷ 8 = ☐

b) 14.8 ÷ 4 = ☐

c) 18.48 ÷ 6 = ☐

d) ☐ = 19.45 ÷ 5

e) 202.35 ÷ 3 = ☐

f) 105.12 ÷ 9 = ☐

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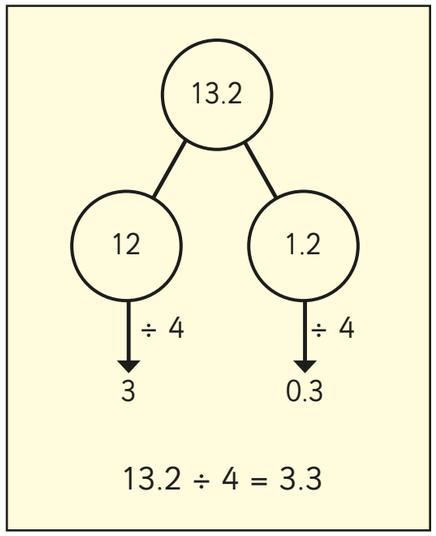
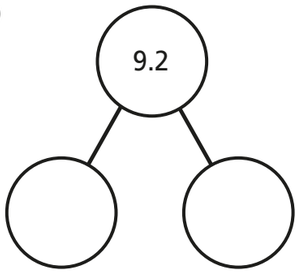
5 Esther solves 13.2 ÷ 4 by partitioning 13.2 into two numbers that are easier to divide.

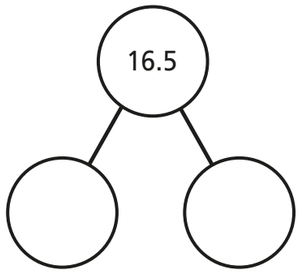


Use Esther's method to complete the part-whole model and calculation.

a)



b)



9.2 ÷ 4 = ☐

16.5 ÷ 3 = ☐

Compare answers with a partner. Did you partition your numbers in the same way?

6 Work out the divisions.

a) 9.64 ÷ 4 = ☐

96.4 ÷ 4 = ☐

0.964 ÷ 4 = ☐

9.64 ÷ 8 = ☐

b) 19.44 ÷ 9 = ☐

19.53 ÷ 9 = ☐

19.62 ÷ 9 = ☐

7 Fill in the missing numbers.

3.6 ÷ 4 = 36 ÷ ☐

3.6 ÷ 4 = ☐ ÷ 8

8 Complete the calculation.

8.4 ÷ ☐ = 4.2 ÷ ☐

How many different solutions can you find?

What patterns do you notice? Talk about it with a partner.

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Divide decimals by integers

1 Use place value counters to work out the divisions.

a) 8.4 ÷ 4 = 2·1

Ones	Tenths
1 1 / 1 1 / 1 1 / 1 1	0.1 0.1 / 0.1 0.1

b) 12.3 ÷ 3 = 4·1

Tens	Ones	Tenths
10	1 1	0.1 0.1 / 0.1

2 Work out the division. Draw your answer.

16.4 ÷ 4 = 4·1

Tens	Ones	Tenths

3 Brett uses short division to work out 13.2 ÷ 6

$$\begin{array}{r} 02.2 \\ 6\overline{)13^{1}.1^{1}2} \end{array}$$

Use short division to work out the calculations.

a)

$$\begin{array}{r} 03.2 \\ 7\overline{)2^{2}2^{1}.4} \end{array}$$

b)

$$\begin{array}{r} 02.31 \\ 8\overline{)1^{1}8^{2}.48} \end{array}$$

4 Work out the divisions.

a) 25.6 ÷ 8 = 3·2

b) 14.8 ÷ 4 = 3·7

c) 18.48 ÷ 6 = 3·08

d) 3·89 = 19.45 ÷ 5

e) 202.35 ÷ 3 = 67·45

f) 105.12 ÷ 9 = 11·68

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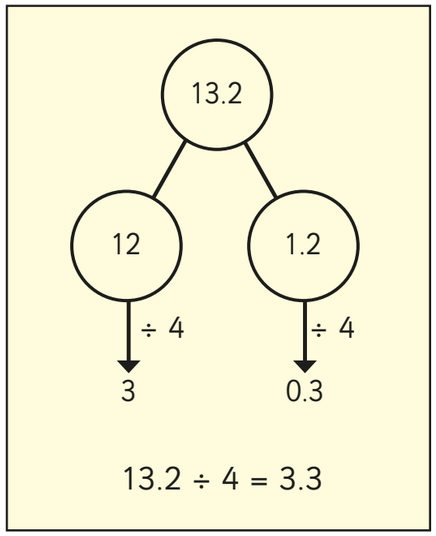
5 Esther solves 13.2 ÷ 4 by partitioning 13.2 into two numbers that are easier to divide.



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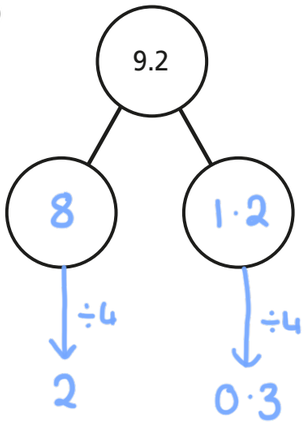
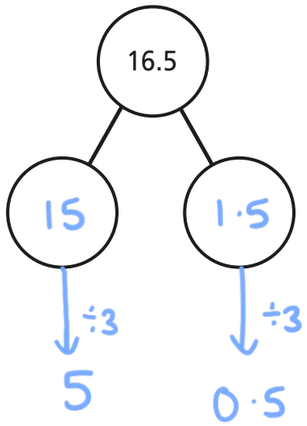


9.2 ÷ 4 = 2·3

b)



16.5 ÷ 3 = 5·5

Compare answers with a partner. Did you partition your numbers in the same way?

6 Work out the divisions.

a) 9.64 ÷ 4 = 2·41

96.4 ÷ 4 = 24·1

0.964 ÷ 4 = 0·241

9.64 ÷ 8 = 1·205

b) 19.44 ÷ 9 = 2·16

19.53 ÷ 9 = 2·17

19.62 ÷ 9 = 2·18

7 Fill in the missing numbers.

3.6 ÷ 4 = 36 ÷ 40

3.6 ÷ 4 = 7·2 ÷ 8

8 Complete the calculation.

e.g. 8.4 ÷ 2 = 4.2 ÷ 1

How many different solutions can you find?

What patterns do you notice? Talk about it with a partner.

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Division to solve problems

1 There are 1,360 children in a school.

A quarter of the children walk to school.

How many children walk to school?

2 Huan has saved his pocket money for 5 weeks.

He gets the same pocket money every week.

He has saved £16.65

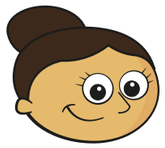
How much pocket money does Huan get each week?

3 Tom is running a 6-kilometre race.

He has run one-third of the race so far.

How many more kilometres does Tom have left to run?

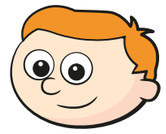
4 Dora, Ron and Teddy are making paper chains.



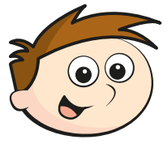
Dora

My paper chain is 1.1 m long.

Dora's paper chain is twice as long as mine.



Ron



Teddy

My paper chain is three times longer than Ron's.

a) How long is Ron's paper chain?

b) How long is Teddy's paper chain?

5 A water bottle holds 2 litres.

A leak in the bottle means 25 ml drips out each day.

How many days will it take until the bottle is empty?

days

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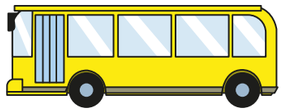
6 **a)** A school bus can hold 30 people.

There are 726 children going on a school trip.

How many buses are needed?



b) A cake needs 4 eggs.

How many cakes can be made from 345 eggs?

7 Shop A sells 5 tins of paint for £23.40

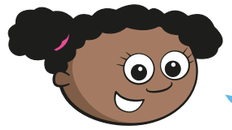
Shop B sells 3 tins of the same paint for £14.01

Which shop should Aisha buy her paint from? _____

Explain your reasoning.

8 146 ÷ 5 = 29 remainder 1

117 ÷ 4 = 29 remainder 1



This means that
117 ÷ 4 = 146 ÷ 5

Do you agree with Whitney? _____

Explain your thinking.

9 I'm thinking of a 3-digit number.

When I divide it by 5, I am left with a remainder of 3

When I divide it by 10, I am left with a remainder of 8

It rounds to 200 to the nearest 100

It has one hundred.

What could my number be?

Create your own problem like this for a partner.

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Division to solve problems

1 There are 1,360 children in a school.

A quarter of the children walk to school.

How many children walk to school?

340

2 Huan has saved his pocket money for 5 weeks.

He gets the same pocket money every week.

He has saved £16.65

How much pocket money does Huan get each week?

£3·33

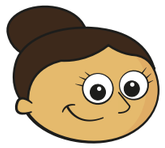
3 Tom is running a 6-kilometre race.

He has run one-third of the race so far.

How many more kilometres does Tom have left to run?

4km

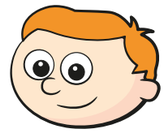
4 Dora, Ron and Teddy are making paper chains.



Dora

My paper chain is 1.1 m long.

Dora's paper chain is twice as long as mine.



Ron

Teddy

My paper chain is three times longer than Ron's.

a) How long is Ron's paper chain?

0·55m

b) How long is Teddy's paper chain?

1·65m

5 A water bottle holds 2 litres.

A leak in the bottle means 25 ml drips out each day.

How many days will it take until the bottle is empty?

80 days

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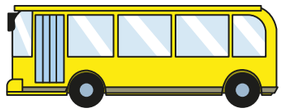
6 **a)** A school bus can hold 30 people.

There are 726 children going on a school trip.

How many buses are needed?



25

b) A cake needs 4 eggs.

How many cakes can be made from 345 eggs?

86

7 Shop A sells 5 tins of paint for £23.40

Shop B sells 3 tins of the same paint for £14.01

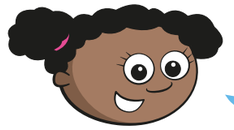
Which shop should Aisha buy her paint from? B

Explain your reasoning.

Shop A is £4·68 per tin. Shop B is £4·67 per tin so shop B is cheaper

8 146 ÷ 5 = 29 remainder 1

117 ÷ 4 = 29 remainder 1



This means that
117 ÷ 4 = 146 ÷ 5

Do you agree with Whitney? No

Explain your thinking.

The remainder isn't worth the same amount.

146 ÷ 5 = 29·2, 117 ÷ 4 = 29·25

29·2 ≠ 29·25

9 I'm thinking of a 3-digit number.

When I divide it by 5, I am left with a remainder of 3

When I divide it by 10, I am left with a remainder of 8

It rounds to 200 to the nearest 100

It has one hundred.

What could my number be?

1 _ 8 — 5, 6, 7, 8 or 9

e.g. 198

Create your own problem like this for a partner.

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Decimals as fractions

1 Complete the sentences.

a)

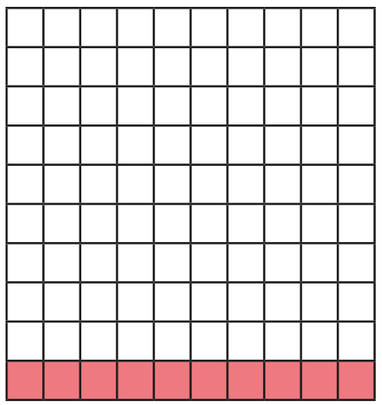
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

The whole has been divided into ☐ equal parts.

Each part is worth ☐

This is equivalent to ☐

b)



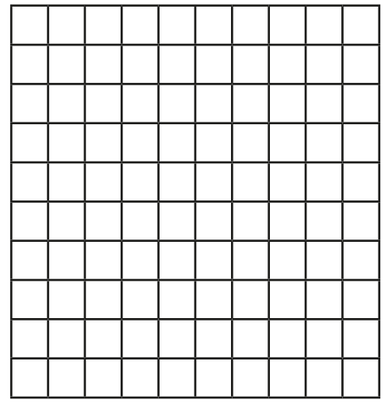
The whole has been divided into ☐ equal parts.

Each part is worth ☐

☐ parts out of ☐ are shaded.

This is equivalent to ☐

2 **a)** Shade 0.17 of the hundred square.



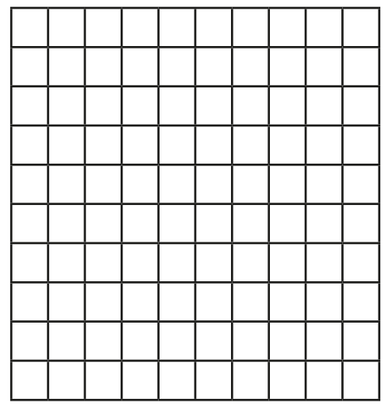
Complete the sentence.

☐ parts out of ☐ are shaded.

Write 0.17 as a fraction.

0.17 = ☐

b) Shade 0.2 of the hundred square.



Complete the sentence.

☐ parts out of ☐ are shaded.

Write 0.2 as a fraction in its simplest form.

0.2 = ☐

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3

0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

0.2	0.2	0.2	0.2	0.2

Use the bar models to fill in the missing numbers.

$0.2 = \frac{\square}{10} = \frac{1}{\square}$

$0.4 = \frac{\square}{10} = \frac{2}{\square}$

$\frac{\square}{\square} = \frac{\square}{10} = \frac{4}{5}$

4 Fill in the missing numbers.

a) $0.54 = \frac{\square}{100} = \frac{\square}{50}$

b) $0.6 = \frac{\square}{10} = \frac{\square}{5}$

c) $0.3 = \frac{\square}{10} = \frac{\square}{100}$

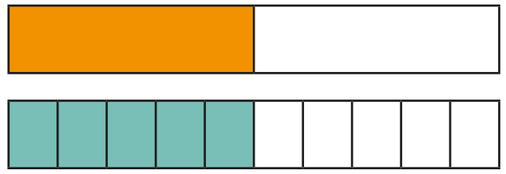
d) $\frac{\square}{\square} = \frac{9}{100}$

e) $\frac{\square}{\square} = \frac{9}{10}$

f) $\frac{21}{50} = \frac{\square}{100} = \frac{\square}{\square}$

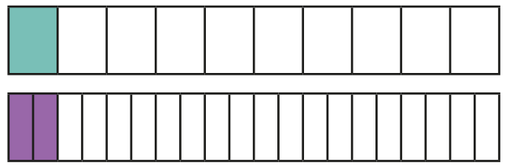
5 Use the bar models to fill in the missing numbers.

a)



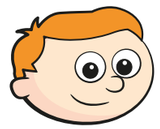
$\frac{1}{2} = \frac{\square}{10} = \frac{\square}{\square}$

b)



$\frac{\square}{\square} = \frac{\square}{10} = \frac{\square}{20}$

6



Ron says: $0.3 = \frac{3}{10}$ so $0.37 = \frac{37}{10}$

Draw a diagram to show that Ron is wrong.

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Decimals as fractions

1 Complete the sentences.

a)

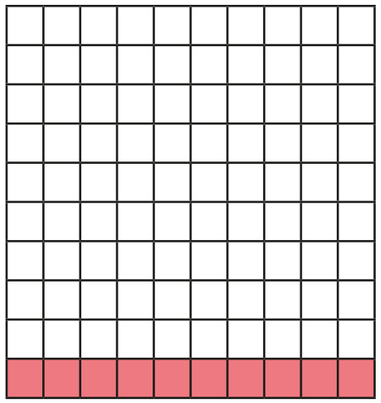
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

The whole has been divided into [10] equal parts.

Each part is worth [0·1]

This is equivalent to [$\frac{1}{10}$]

b)



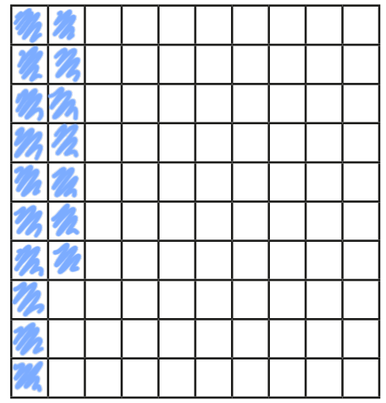
The whole has been divided into [100] equal parts.

Each part is worth [0·01]

[10] parts out of [100] are shaded.

This is equivalent to [$\frac{10}{100}$] or $\frac{1}{10}$

2 **a)** Shade 0.17 of the hundred square.



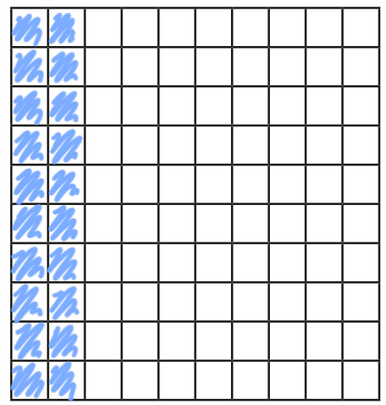
Complete the sentence.

[17] parts out of [100] are shaded.

Write 0.17 as a fraction.

0.17 = [$\frac{17}{100}$]

b) Shade 0.2 of the hundred square.



Complete the sentence.

[20] parts out of [100] are shaded.

Write 0.2 as a fraction in its simplest form.

0.2 = [$\frac{1}{5}$]

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3

0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

0.2	0.2	0.2	0.2	0.2

Use the bar models to fill in the missing numbers.

$0.2 = \frac{\boxed{2}}{10} = \frac{1}{\boxed{5}}$

$0.4 = \frac{\boxed{4}}{10} = \frac{2}{\boxed{5}}$

$\boxed{0.8} = \frac{\boxed{8}}{10} = \frac{4}{5}$

4 Fill in the missing numbers.

a) $0.54 = \frac{\boxed{54}}{100} = \frac{\boxed{27}}{50}$

b) $0.6 = \frac{\boxed{6}}{10} = \frac{\boxed{3}}{5}$

c) $0.3 = \frac{\boxed{3}}{10} = \frac{\boxed{30}}{100}$

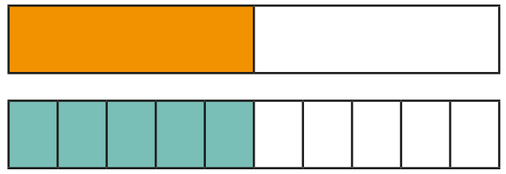
d) $\boxed{0.09} = \frac{9}{100}$

e) $\boxed{0.9} = \frac{9}{10}$

f) $\frac{21}{50} = \frac{\boxed{42}}{100} = \boxed{0.42}$

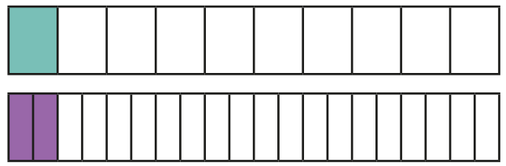
5 Use the bar models to fill in the missing numbers.

a)



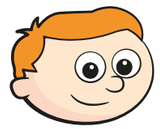
$\frac{1}{2} = \frac{\boxed{5}}{10} = \boxed{0.5}$

b)



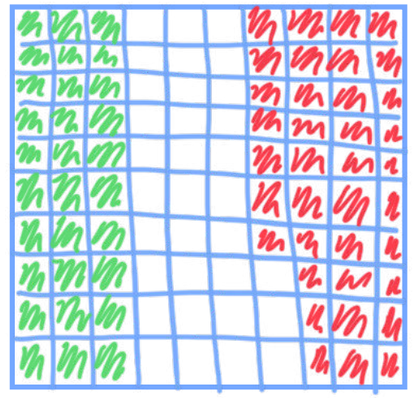
$\boxed{0.1} = \frac{\boxed{1}}{10} = \frac{\boxed{2}}{20}$

6



$0.3 = \frac{3}{10}$ so $0.37 = \frac{37}{10}$

Draw a diagram to show that Ron is wrong.



$0.3 = \frac{3}{10}$

$0.37 = \frac{37}{100}$

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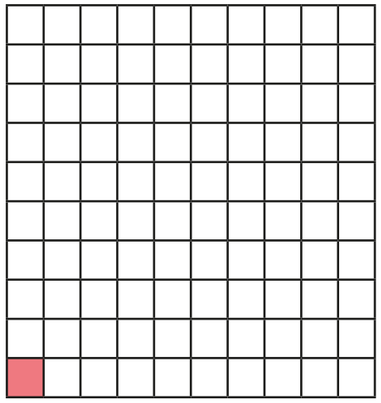
Fractions to decimals (1)

1 Complete the sentences.

a)

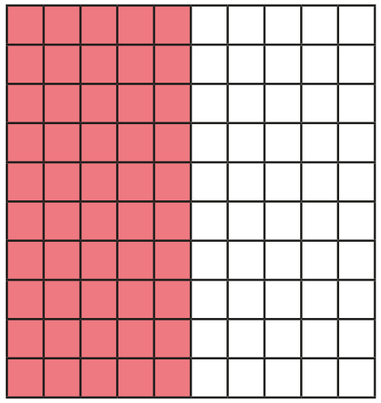


Each square represents $\frac{\square}{100}$

$\frac{\square}{100}$ of the whole square is shaded.

This is equivalent to ☐ as a decimal.

b)

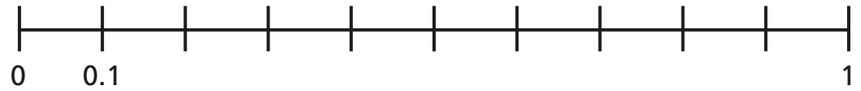


$\frac{\square}{100}$ of the whole square is shaded.

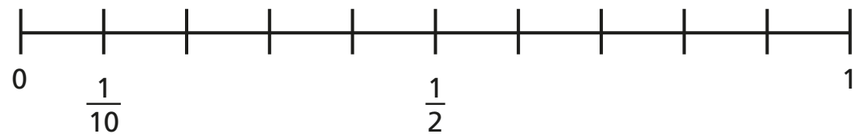
This can be simplified to $\frac{\square}{\square}$

This is equivalent to ☐ as a decimal.

2 **a)**

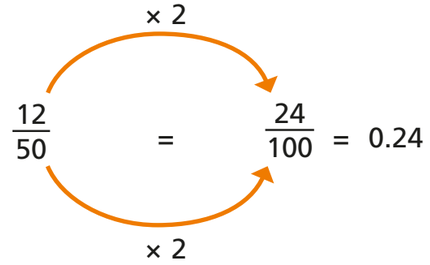


b)



What is the same and what is different about the number lines?

3 To convert a fraction to a decimal, you can use equivalent fractions to make the denominator 100



Use this method to find the equivalent decimals for the fractions.

a) $\frac{28}{50} = \frac{\square}{100} = \square$

b) $\frac{6}{20} = \frac{\square}{100} = \square$

c) $\frac{9}{25} = \frac{\square}{100} = \square$

d) $\frac{24}{200} = \frac{\square}{100} = \square$

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4 Some fractions can be converted to have a denominator of 1,000 to find their decimal equivalent.

$$\frac{62}{500} \xrightarrow{\times 2} \frac{124}{1000} = 0.124$$

a) $\frac{27}{500} = \frac{\square}{1000} = \square$

b) $\frac{62}{250} = \frac{\square}{1000} = \square$

c) $\frac{51}{200} = \frac{\square}{1000} = \square$

d) $\frac{128}{2{,}000} = \frac{\square}{1000} = \square$

5 Convert the fractions to their decimal equivalents.

a) $\frac{1}{5} = \square$

$\frac{1}{10} = \square$

$\frac{1}{20} = \square$

$\frac{1}{40} = \square$

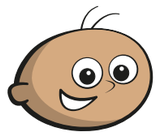
b) $\frac{1}{20} = \square$

$\frac{2}{20} = \square$

$\frac{3}{20} = \square$

$\frac{6}{20} = \square$

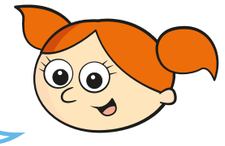
6 Tommy, Alex and Eva are working out the decimal equivalent of $\frac{60}{200}$



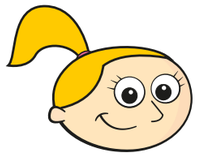
Tommy

You need to convert it to have a denominator of 100 to find the decimal equivalent.

I disagree. You need to convert it to have a denominator of 1,000



Alex



Eva

Both of you are right!

Who do you agree with? _____

Explain your thinking.

_____

_____

_____

7 0.5 is equivalent to $\frac{1}{2}$, $\frac{5}{10}$, $\frac{50}{100}$

Are these the only fractions that are equivalent to 0.5?

How many fractions can you find?

Compare answers with a partner.

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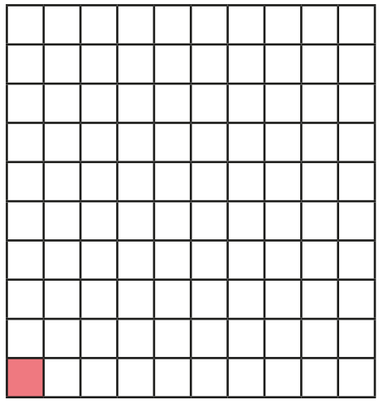
Fractions to decimals (1)

1 Complete the sentences.

a)

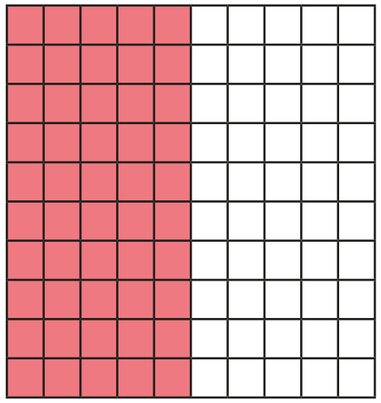


Each square represents $\frac{1}{100}$

$\frac{1}{100}$ of the whole square is shaded.

This is equivalent to 0·01 as a decimal.

b)



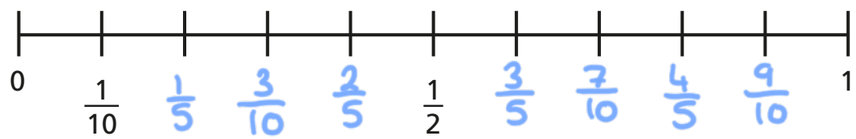
$\frac{50}{100}$ of the whole square is shaded.

This can be simplified to $\frac{1}{2}$

This is equivalent to 0·5 as a decimal.

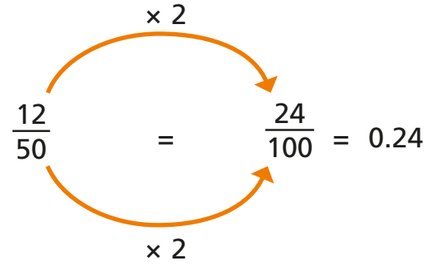
2 **a)**

b)



What is the same and what is different about the number lines?

3 To convert a fraction to a decimal, you can use equivalent fractions to make the denominator 100



Use this method to find the equivalent decimals for the fractions.

a) $\frac{28}{50} = \frac{56}{100} =$ 0·56

b) $\frac{6}{20} = \frac{30}{100} =$ 0·3

c) $\frac{9}{25} = \frac{36}{100} =$ 0·36

d) $\frac{24}{200} = \frac{12}{100} =$ 0·12

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4 Some fractions can be converted to have a denominator of 1,000 to find their decimal equivalent.

$\frac{62}{500}$ (× 2) = $\frac{124}{1000}$ = 0.124

a) $\frac{27}{500} = \frac{54}{1000} =$ 0·054

b) $\frac{62}{250} = \frac{248}{1000} =$ 0·248

c) $\frac{51}{200} = \frac{255}{1000} =$ 0·255

d) $\frac{128}{2{,}000} = \frac{64}{1000} =$ 0·064

5 Convert the fractions to their decimal equivalents.

a) $\frac{1}{5} =$ 0·2

$\frac{1}{10} =$ 0·1

$\frac{1}{20} =$ 0·05

$\frac{1}{40} =$ 0·025

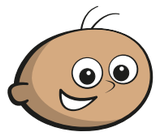
b) $\frac{1}{20} =$ 0·05

$\frac{2}{20} =$ 0·1

$\frac{3}{20} =$ 0·15

$\frac{6}{20} =$ 0·3

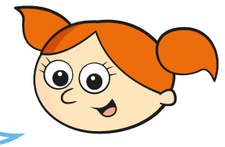
6 Tommy, Alex and Eva are working out the decimal equivalent of $\frac{60}{200}$



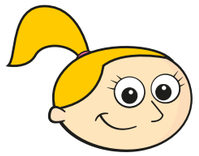
Tommy

You need to convert it to have a denominator of 100 to find the decimal equivalent.

I disagree. You need to convert it to have a denominator of 1,000



Alex



Eva

Both of you are right!

Who do you agree with? Eva

Explain your thinking.

Tommy's method: $\frac{60}{200} = \frac{30}{100} = 0{\cdot}30 = 0{\cdot}3$

Alex's method: $\frac{60}{200} = \frac{300}{1{,}000} = 0{\cdot}300 = 0{\cdot}3$

They get the same answer.

7 0.5 is equivalent to $\frac{1}{2}$, $\frac{5}{10}$, $\frac{50}{100}$

Are these the only fractions that are equivalent to 0.5?

How many fractions can you find?

various answers.

Compare answers with a partner.

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