

HILL WEST
Primary

FOUR OAKS

Home Learning Pack

Year 6

Week Beginning 1.3.21



Table of Contents (clickable links)

Monday	1
Tuesday	8
Wednesday	15
Thursday	21
Friday	26
Science	39
Geography	43
French	48
Computing	49
Design and Technology	49
PDW	52
Answers	58

Home Learning Links

Oak National Academy

Oak National Academy is an online classroom and resource hub. It provides high-quality video lessons and resources to support teachers, parents and pupils.

www.thenational.academy

BBC Bitesize

With BBC Bitesize it is easy to keep learning at home. You can access regular daily lessons in English, maths and other core subjects.

<https://www.bbc.co.uk/bitesize>

Read Works.org

Read Works offers access to 3000+ comprehension for all age groups. Just sign up for a free account to access fantastic texts.

<https://www.readworks.org/>

Education Quizzes

A series of short quizzes for children to complete related to the National Curriculum subjects. Just select KS1 for Reception, Year 1 & Year 2 and select KS2 for Years 3-6.

<https://www.educationquizzes.com/ks2/>

Top Marks

A range of activities here but especially good interactive activities for maths.

<https://www.topmarks.co.uk/>

Classroom Secrets

The platform is aimed at primary aged children and covers subjects such as maths, reading, grammar and spelling. The platform is really child-friendly so that they're able to access it on their own. There are a load of games and interactive activities from phonics to SATs

<https://kids.classroomsecrets.co.uk/>

National Geographic

National Geographic is a great platform for learning and it's totally free. There are online games, resources and competitions, too.

<https://www.natgeokids.com/uk/teacher-category/primary-resources/>

Reading Eggspress

<https://readingeggs.co.uk/>

Top Marks

A website for great interactive maths games.

<https://www.topmarks.co.uk/>

Times Tables Rockstars

This is a great times tables game, practice all of the tables up to 12 x 12. Your child's username and password can be found in their Homework Book.

<https://trockstars.com/>

Monster SATs

On-screen and paper-based resources, including curriculum-based games for primary schools.

<https://www.monstersats.co.uk/group-login-page/>

SPaG.com

SPaG.com provides KS1 and KS2 practice punctuation & grammar tests. Plus 80 additional tests covering grammar objectives for every year group

<https://www.spag.com/>

White Rose Maths Hub

Daily 'home learning' lessons for Years 1-9. Every lesson comes with a short video showing you clearly and simply how to help your child complete the activity successfully.

<https://whiterosemaths.com/homelearning/>

Khan Academy

A great website for learning, with all activities and videos for every topic. A favourite of Mr Ellison.

<https://www.khanacademy.org>

Codeclub

Fancy something a bit different. Try out the Code Club website for free tutorials and guides on creating code in a range of platforms.

<https://projects.raspberrypi.org/en/codeclub>

Duolingo

Fancy something a bit different. Try out the Code Club website for free tutorials and guides on creating code in a range of platforms.

Top tips to develop reading skills during lockdown

To view free Oxford Reading Tree texts online access

www.oxfordowl.co.uk .

Try to access Reading Eggs at least once each week.

Ask your child to create a book review for the favourite book that they have read during lockdown. Tweet @hillwestprimary to share your child's thoughts!

For engaging activities to further support your children's literacy skills from home visit

Access daily Letters and Sounds Phonics lessons at www.lessonsandsounds.org.uk

For phonics practise access Phonics Play!

To help your child grasp complex vocabulary use the 'SEEC' method.

- 1) **Select** – read the text beforehand, highlighting any complex vocabulary.
- 2) **Explain** – give multiple examples and pupil-friendly definitions.
- 3) **Explore** – dig into the root meanings of each word, and further questions that the word poses.
- 4) **Consolidate** – give your child the opportunity to use the words in conversation and revisit the word later in written activities and quizzes.

Access the Oak National Academy's virtual library to read/ listen to the weekly text.

Look at the top 100 children's books that are listed in your child's homework diary. Highlight any of these books that your child has read.

Create quizzes about your child's evening book.

To enhance your child's vocabulary follow @VocabularyNinja on twitter!

Use audiobooks as a supplement to reading, not a replacement. Listening to an audiobook is different to reading a book, and so your child might not develop the same comprehension skills while listening. However, audiobooks might help pupils get immersed in ideas and stories, and as a result motivate them to pick up a book.

www.worldofdavidwalliams.com/elevenses

Visit David Walliams' website to listen to a different section of his books each day.

www.bookstrust.org.uk/books-and-reading/bookfinder/

Visit the Books Trust website to find a suitable book for your child based on their age and interests.

www.bbc.co.uk/newsround

Encourage your child to read different news articles each day. Not only will it enhance their knowledge of current affairs, it will develop their confidence with reading non-fiction texts.

Before Zoom 9:00 – 11:00am

- ☐ Reading for Pleasure
- ☐ Reading Eggs
- ☐ Arithmetic starters
- ☐ Handwriting
- ☐ SPaG retrieval practice/Questions in pack
- ☐ Complete other self-directed tasks set by teacher. (Science, Topic, Art, French etc.)

Zoom AM Session 11:00am

Arithmetic

Maths

Complete independent sheets + R&P.

*** if finished – marks answers from back of pack ***

Zoom PM Session 1:30pm

Reading/Spag

Writing/Topic/Science

Writing/Topic/Science

Key Question Week 8: How do our hearts work?
Key Text for Linked Learning: The Raft by by Jim Lamarche
Linked Learning: Geography, Design Technology.
Linking to their Geography work, where they have been investigating the wildlife, habitats and environments, children will use their reading skills to examine the features and language choices found withing a non-chronological report, answering questions about linked texts and how the author tailors their language for their audience. They will then write their non-chronological reports using the notes they created the previous week using further organisational and presentational devices to structure their text and guide the reader. In Grammar, they will revisit the colon to introduce a list, using semi-colons within lists and bullet points to list information, with the opportunity to apply this to their non-chronological report.
Maths: Continuing with the topic of ratio, children will use the term 'scale factors' and enlarge shapes according to given ratios. They will also apply the skills they have learnt to solve problems in a variety of contexts.
Science: The Circulatory System: Children will identify the functions of the heart, blood vessels and blood by investigating how the different parts of the circulatory system work.
Geography: Children will learn about what the taiga is like; where the taiga is found and what plants and animals live there.
Computing: Children will consider the principles and benefits of effective communication online. They should recognise that the standards of behaviour we use offline also apply on the internet, even if social media allows greater anonymity.
Design Technology: By completing research, children will design their own Biome for the correct climate of where they live.
R.E: In RE, children will learn about Sikhism and its values.
P.E: Netball Children will develop their passing and catching. They will then develop their running, jumping, throwing and catching in isolation and in combination in the context of passing and catching in netball. Home learners could tune into Joe Wicks for his live PE sessions on You Tube.
MFL: The children will learn to use verb avoir, 'to have' in French.

Year 6 Spellings by term

Y6 Half term 1	Y6 Half term 2	Y6 Half Term 3	Y6 Half Term 4	Y6 HalfTerm 5	Y6HalfTerm 6
aggressive	convenience	controversy	prejudice	sufficient	decided
awkward	mischievous	correspond	accommodate	determined	absolutely
desperate	committee	embarrass	accompany	explanation	education
disastrous	interrupt	especially	signature	pronunciation	information
temperature	interfere	exaggerate	foreign	programme	knowledge
relevant	attached	cemetery	apparent	shoulder	insignificant
variety	available	necessary	appreciate	sweltering	ecstatic
existence	average	sacrifice	persuade	sauntered	woeful
suggest	competition	hindrance	individual	equipped	dejected
lightning	conscience	nuisance	language	identity	unobtrusive

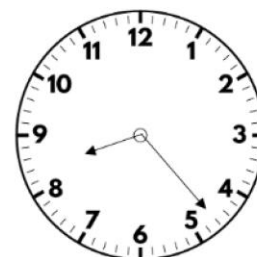
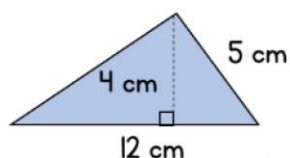
Monday

Number: Ratio

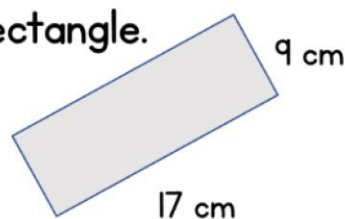
Calculating scale factors

<https://www.bbc.co.uk/bitesize/articles/z2vm8hv>

- 1) Work out the area of the triangle.



- 2) Calculate the perimeter of the rectangle.



- 3) If $a = 13$, work out the value of $3a + 1$

- | | |
|----|------------------------------|
| 4) | Add together 9,526 and 3,675 |
|----|------------------------------|

1	$13 \times 9 =$
---	-----------------

1

4	$215 \div 1 =$
---	----------------

A blank 20x10 grid with a 5x2 rectangle highlighted in the bottom right corner.

2	$\frac{4}{9} - \frac{4}{9} =$
---	-------------------------------

1 mark

5	$91 \times 6 =$
---	-----------------

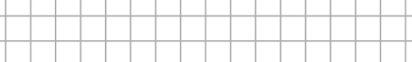
1 m

3	$7077 + 893 =$
---	----------------

A blank 20x10 grid for drawing a rectangle. The grid is 20 units wide and 10 units high. A small rectangle is drawn in the bottom right corner, spanning from the 18th to the 20th column and the 8th to the 10th row.

1 mark

6	$1.98 + 0.019 =$
---	------------------

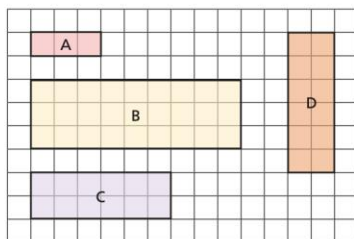


A blank 20x10 grid with a small rectangle in the bottom right corner.

1 m

Calculating scale factors

- 1 Complete the sentences.

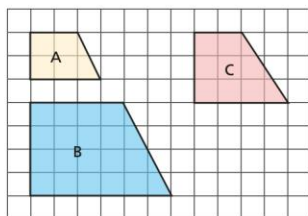


Shape B is an enlargement, by a scale factor of , of shape A.

Shape C is an enlargement, by a scale factor of , of shape A.

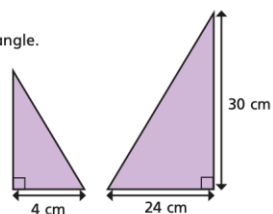
Shape D is an enlargement, by a scale factor of , of shape A.

- 2 Shape B is an enlargement of shape A. Shape C is not an enlargement of shape A.



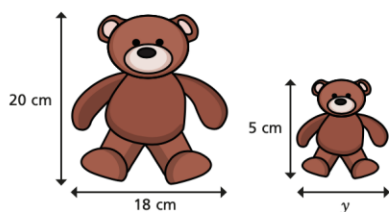
Talk to a partner about why this is the case.

- 5 The two triangles are similar.
Find the area of the smaller triangle.



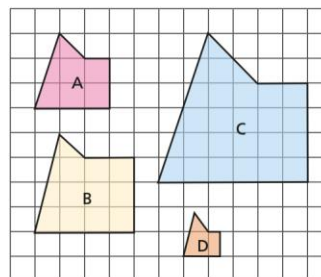
area = cm²

- 6 These two children's toys are similar.
Find the length marked y .



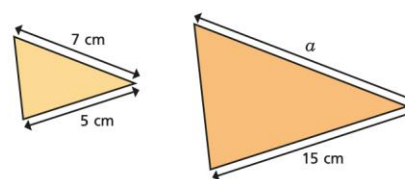
$y =$ cm

- 3 Tick all the shapes that are an enlargement of shape A.



How do you know which shapes are enlargements?

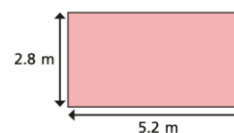
- 4 The two triangles are similar.
Find the length of a .



$a =$ cm

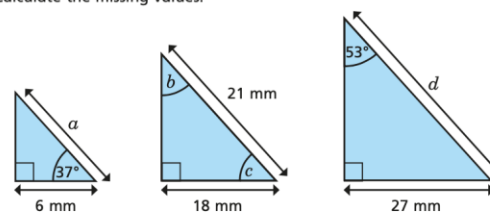
© White Rose Maths 2019

- 7 The rectangle is enlarged by a scale factor.
The perimeter of the enlarged rectangle is 64 m.
What is the scale factor of enlargement?



scale factor =

- 8 The diagram shows three similar triangles.
Calculate the missing values.



$\alpha =$ $b =$ $c =$ $d =$

A rectangle has a perimeter of 16 cm.
An enlargement of this rectangle has a perimeter of 24 cm.

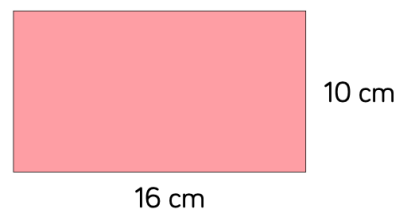
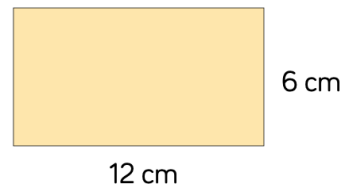
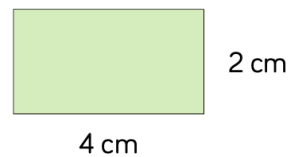
The length of the smaller rectangle is 6 cm.

Draw both rectangles.

Always, sometimes, or never true?

To enlarge a shape you just need to do the same thing to each of the sides.

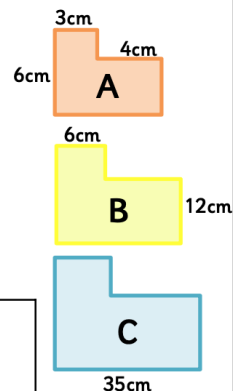
Ron says that these three rectangles are similar.



Do you agree?
Explain your answer.

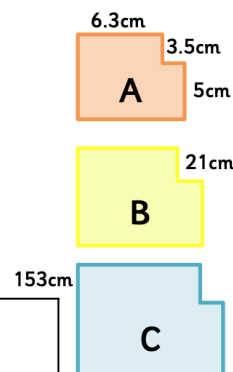
9. Which of these statements are true and which are false?

- Compared to shape A, shape B is enlarged by scale factor 2.
- Compared to shape B, shape C is enlarged by scale factor 2.5.
- Compared to shape A, shape C is enlarged by scale factor 5.
- Each shape is an enlarged version of the previous one.



11. Which of these statements are true and which are false?

- Compared to shape A, shape B is enlarged by scale factor 5.
- Compared to shape B, shape C is enlarged by scale factor 3.
- Compared to shape A, shape C is enlarged by scale factor 18.
- Each shape is an enlarged version of the previous one.



English

Handwriting

Copy a line of each word into your books. Check your spelling as you go. Write each word into a sentence. Not sure what it means? Check the internet or grab a dictionary! ☺

sufficient

suggest

SPaG



Unit: Punctuation: the colon, semicolon, and more

<https://www.khanacademy.org/humanities/grammar/punctuation-the-colon-semicolon-and-more>

1. Circle the **adverb** that shows how Dave danced.

Dave put on his best shirt before dancing energetically.

2. Circle the right words in each of the boxes to make sure that the sentences are written in **Standard English**.

Dave has lived in London since/whilst he was a boy.

He could of/have moved but decided to stay.

3. Tick the correct box to say which clause is underlined in the following sentences:

Sentence	Main Clause	Subordinate Clause
<u>If he listened really hard</u> , Dave could hear music coming from next door.		
Dave always goes to dance practice <u>even when he's not feeling one hundred percent</u> .		
Although it wasn't far to go, <u>Dave always drove to work</u> .		

4. Choose the correct **conjunction** for each of the gaps in these sentences, only use each word **once**.

although until because

- a. _____ I am short, I can reach the top of my wardrobe.
b. _____ of the rain, we are staying in today.
c. _____ I hear the door bell, I am not getting up from my seat.



Complete Reading

Eggs Lesson

Find a word to complete the vocabulary deconstruction grid.

Antonyms:

Prefix:

Root word:

Suffix:

Synonyms:

Word:

Etymology:

Definition:

Sentences:

THE PEPPERED MOTH

by Anita Loughrey

Peppered moths can be found all across Britain in gardens, hedgerows, parks and woodlands. They are usually covered with black and white speckles, giving them a pale, 'peppered' appearance. Due to this pattern the moths are able to blend into the lichen growing on trees. This camouflage protects the moths by helping them to hide their identity from predators, such as robins, swallows and other birds. They also avoid predators by being nocturnal, remaining inactive and hidden during the day.

Natural Selection

In contrast, there is also a black variety of peppered moth – created as a result of a naturally occurring genetic mutation. The first black peppered moth was recorded in Manchester in 1848. The black moths are not so easily camouflaged on the pale lichen covering tree trunks, so are more likely to be eaten by predators. For this reason, fewer black peppered moths survive to breed and pass their characteristics onto the next generation. This process of survival where a species is better adapted to its environment (and subsequently survive and have more offspring) is known as natural selection. This process of natural selection was outlined by both Charles Darwin and Alfred Russell Wallace in their theories of evolution.



Peppered moths are camouflaged against lichen found on trees.

Theory of Evolution

Charles Darwin was a famous British naturalist. On December 27th, 1831, he set sail on a five-year expedition to explore and study the animals in the tropics. He spent five weeks in the Galapagos Islands (near Ecuador, South America). Whilst at the Galapagos Islands, he collected specimens and classified many different species of animal.

Darwin discovered a wide variety of different characteristics between the same species of animals he observed on each of the islands. For instance, the tortoises on Pinta Island have shells that rise at the front so they can lift their heads to eat tree cactuses, whereas tortoises on Isabella Island have dome-shaped shells because there are plants for them to eat on the ground. He believed these subtle adaptations occurred over time in order for the creatures to survive in their environment.

Alfred Russell Wallace was another British naturalist, who was inspired by Darwin's work to carry out his own observations. He wrote a letter to Darwin explaining how his own research into natural selection supported Darwin's discoveries. Both Darwin's and Wallace's theories of evolution were published together.

Even though the peppered moth was studied by neither Darwin nor Wallace, the insect can be seen to confirm their evolutionary theories of natural selection because significantly more light peppered moths are recorded to be in existence, in comparison to the number of black peppered moths.



Adaptation

During the industrial revolution, 98% of the peppered moths in the city of Manchester were recorded to be totally black, with no speckling at all. This was because air pollution from coal fires and factories killed the lichen and covered trees and walls with a layer of soot. As a consequence, the black peppered moths were better adapted to this new environment, as they were able to camouflage themselves on the darker surfaces to protect themselves from predators. This adaptation meant they were more likely to reproduce and lay eggs that would hatch more black peppered moths and the black gene was more likely to be passed onto future generations. Hence, fewer of the speckled peppered moths were in existence by the end of the nineteenth century.



This photo shows how the colourings of the different moths can help them to camouflage against different backgrounds.

Research

In 1952, the scientist Dr Henry Bernard Kettlewell conducted a series of experiments to discover if natural selection had actually caused the number of black peppered moths to increase. He collected data from all over Britain to map the population of speckled and black peppered moths. He found that in the countryside, where there was less pollution, the black moths were rare in comparison to in the industrial cities, where high populations of black moths were documented.

Dr Kettlewell also conducted field studies to compare the speckled and black populations of peppered moths. First, he located speckled and black moths on the tree trunks in both polluted and unpolluted areas. Observations were made to see how long they could keep their identity hidden, recording the amount of time it took birds to spot the two varieties of peppered moth in these different environments.

His studies showed that in polluted areas it took twice as long for a bird to find a black peppered moth on a dark tree than a speckled one, compared with unpolluted areas where black moths were found twice as often on trees with light lichen. He concluded that if a peppered moth was able to camouflage itself in its environment, it had a much greater chance of survival, which supported Darwin's and Wallace's theories of natural selection.



Black peppered moths are more easily seen by

Evolutionary Process

In the mid-twentieth century, laws were passed to reduce air pollution. As the air quality improved, the lichen grew and the cities became cleaner. The speckled peppered moth could again use camouflage to protect itself from predators and the black variation became more vulnerable, as it was easier to spot. For this reason, the speckled peppered moth began to become more common again nationwide.

This evolutionary process demonstrates how natural selection works in both directions, always favouring the variety of moth that is better suited to the environment. Furthermore, the peppered moth has become a symbol of hope that other species can also survive by adapting to changes in the environment caused by humans.



Read the information in the first paragraph.
Find and copy a word that means **blend in**.

1 mark

Which animals eat the peppered moth?

1 mark

Which type of peppered moth is more commonly found in gardens, hedgerows, parks and woodlands?

1 mark

Why did the numbers of black peppered moths increase in Manchester?

1 mark

The characteristics of the peppered moth and how it has evolved

Activity 1 – Active or passive?

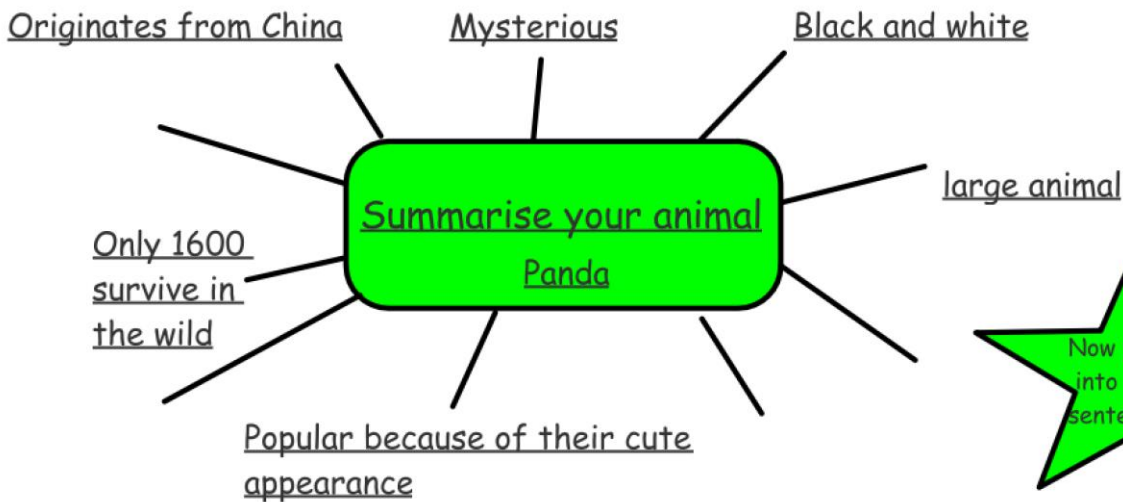
Complete the table, ticking to show whether each sentence is using active or passive verbs.

	Active Verb	Passive Verb
Peppered moths have been studied by scientists.		
Laws were passed to reduce air pollution.		
Predators hunt the moths.		
Air pollution covered walls with soot.		
How often birds spotted the moths was recorded by scientists.		

Sentence 2 is an example of an agentless passive verb.
We could add in 'by governments' as the agent.

To write an introduction

Monday 1st March



Now put them
into
sentences

Originates from China Mysterious
Black and white large animal
Popular because of their cute appearance
Only 1600 survive in the wild

Use the following VIP words
and phrases to create an
introduction.

Originating from China, Panda's are thought to be mysterious creatures. Popular with humans because of their cute black and white fur with black patches around their eyes. They are a large animal but only 1600 survive in the wild.

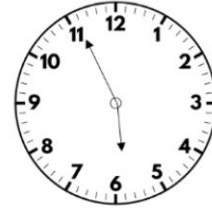
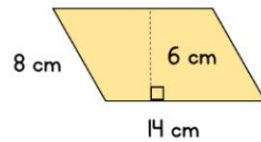
Tuesday

Number: Ratio

Ratio and proportion problems

<https://www.bbc.co.uk/bitesize/articles/zffq4xs>

- 1) Calculate the area of the parallelogram.



- 2) A square has area 81 cm^2 .
How long are the sides of the square?

- 3) Solve the equation $10 = b - 10$

- 4) Work out $3\frac{3}{4} \times 5$

7	$505 + 3679 =$
---	----------------

A blank 20x10 grid with a 5x2 rectangle highlighted in the bottom right corner.

1 mark

8	$309\ 122 - 45\ 829 =$
---	------------------------

A blank 20x10 grid with a 5x2 rectangle highlighted in the bottom right corner.

1 mark

9	$1440 \div 12 =$
---	------------------

A large rectangular grid consisting of 20 columns and 10 rows of small squares. A smaller rectangle is drawn in the bottom right corner, spanning 5 columns and 3 rows of the grid units.

1 mark

Ratio and proportion problems

Maths

- 1 Whitney buys 6 cans of lemonade for £3

a) How much do 12 cans cost?

b) How much do 3 cans cost?

c) How much do 15 cans cost?



- 2 The ratio of red to green grapes in a bowl is 3:1

a) Explain what this means.

b) There are 12 more red grapes than green grapes.
What is the total number of grapes in the bowl?

- 4 Dexter has some 20p and 50p coins in a jar.
For every three 20p coins he has one 50p coin.
There are 12 coins in the jar in total.
How much money is in the jar?

- 5 A drink is made using 3 parts orange juice to 2 parts lemonade.
Esther makes 1.2 litres of this drink.
How much orange juice does she need?

 ml

- 6 Two shops sell the same cereal but in different-sized boxes.

Shop A 500 g of cornflakes £2.10	Shop B 750 g of cornflakes £3.30
---	---

Which shop is better value for money? Shop

Explain why.

- 3 Amir is making some chocolate chip biscuits.

He has this list of ingredients to make 6 biscuits.

Chocolate chip biscuits (makes 6)

120 g butter
72 g sugar
180 g plain flour
60 g chocolate chips

- a) How much of each ingredient does Amir need to make 2 biscuits?

butter g

plain flour g

sugar g

chocolate chips g

- b) How much of each ingredient does Amir need to make 10 biscuits?

butter g

plain flour g

sugar g

chocolate chips g

- c) Amir has 240 g of chocolate chips.

What is the maximum number of biscuits he can make?

- 7 Dora draws two similar rectangles.

My larger rectangle is 4 times the size of the smaller one.



The perimeter of the larger rectangle is 48 cm.

The length and width of both rectangles are even numbers.
What is the largest possible area for the small rectangle?

 cm²

- 8 Aisha has two boxes of sweets.

- In the first box, the ratio of red sweets to green sweets is 3:1
- In the second box, for every 2 orange sweets there are 3 yellow sweets.
- There is the same number of sweets in each box.
- There are 12 yellow sweets in the second box.

How many sweets are in the first box?

This recipe makes 10 flapjacks.

Flapjacks

120 g butter
100 g brown sugar
4 tablespoons golden syrup
250 g oats
40 g sultanas

Amir has 180 g butter.

What is the largest number of flapjacks he can make?

How much of the other ingredients will he need?

Alex has two packets of sweets.



In the first packet, for every 2 strawberry sweets there are 3 orange.

In the second packet, for one strawberry sweet, there are three orange.

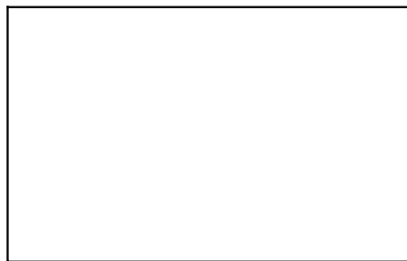
Each packet has the same number of sweets.

The second packet contains 15 orange sweets.

How many strawberry sweets are in the first packet?

9. Sheren has this recipe for risotto.

Exactly how much of each ingredient will she need to make enough for 19 of her friends?



Risotto (serves 4)

2 onions
6 rashers of bacon
300g risotto rice
1.2 litres vegetable stock
100g frozen peas
60g sweetcorn

11. Daanish has this recipe for lamb skewers.

Exactly how much of each ingredient will he need to make enough for 24 of his friends?



Lamb Skewers (serves 9)

1,200g lamb
30g fresh mint
1.5 red chillies
3 red onions
6 yellow peppers
150g natural yoghurt

English

Handwriting

Copy a line of each word into your books. Check your spelling as you go. Write each word into a sentence. Not sure what it means? Check the internet or grab a dictionary! ☺

symbol

system

SPaG



Unit: Punctuation: the colon, semicolon, and more

<https://www.khanacademy.org/humanities/grammar/punctuation-the-colon-semicolon-and-more>

5. Which sentence is a **command**? Tick **one**.

- I just love doughnuts. ☐
- Will you be coming round for tea later? ☐
- Pick up that piece of paper. ☐
- Yorkshire is in the north of England. ☐

6. Write a **synonym** in the box to replace the underlined word so that the sentence has the same meaning.

When Dave visited the supermarket, he was **flabbergasted** to see how cheap the grapes were.

7. Which of these sentences needs a **question mark**? Tick **one**.

- Please could I have a return ticket to York ☐
- I enjoy answering questions ☐
- If you think you like pies, you should try these ☐
- There are three pies left ☐

8. Which of these sentences has used a **question mark** correctly? Tick **one**.

- "Would you like to come to the cinema with me," asked Dave? ☐
- "Would you like to come to the cinema with me?" asked Dave. ☐
- "Would you like to come to the cinema with me"? asked Dave. ☐
- "Would you like to come? to the cinema with me," asked Dave. ☐



Complete Reading Eggs Lesson

TEXT ON MONDAY'S LESSON

- 13** Tick **one** box in each row to show whether each statement is **true** or **false**

	True	False
The first black peppered moth was recorded in 1848.		
Peppered moths are active at night.		
50% of peppered moths were totally black during the industrial revolution.		
A reduction in air pollution meant that the numbers of speckled peppered moths increased.		

2 marks

How do the peppered moths support Darwin's theory of evolution?

1 mark

Read the paragraph titled **Theory of Evolution**.

Complete the table to show how the different tortoises on different islands have adapted.

Island	How the tortoises have adapted
Pinta Island	
Isabella island	

2 marks

Activity 2 – Active and passive verbs

Change these sentences so that they are written using passive verbs.

Many people have read Charles Darwin's books.

Lichen covers trees.

Rewrite these sentences so that they are written using active verbs.

The peppered moths are protected by their camouflage.

Specimens were collected by Darwin on the Galapagos Islands.

Tuesday 2nd March

Today you are going to continue to write your report about your chosen animal.

Appearance

Giant pandas have the same type of body shape as other bears. They have thick black and white fur which some scientists think may be to disguise them in the snowy and rocky surroundings where they live. An adult can grow up to 1.5 metres and weigh up to 150 kilograms. They might look cute but they have razor-like claws. They also have powerful jaws for crushing and grinding bamboo!

You are going to look back at your plan to help you write the rest of your report.

Habitat

Giant pandas in the wild live on mountainous slopes in western China. Their habitat is densely populated with fir trees and bamboo. It is the forests in these mountains that attract the panda as bamboo is their favourite food.

Diet

In the wild, their main diet is bamboo. To survive, they need to eat for most of the day. In zoos, they eat 15 to 30 kilograms of food every day and spend 10 to 16 hours feeding. In zoos, they have a specially prepared diet of bamboo, eggs, fish and honey.

Remember you're using your notes to paraphrase the information.

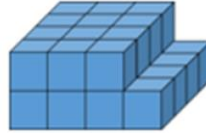
Wednesday

Number: Ratio

Ratio and proportion problems 2

<https://www.bbc.co.uk/bitesize/articles/zffq4xs>

- 1) Find the volume of the solid.



- 2) What is the area of the rectangle?



- 3) $C = 2t + 17$

Work out C when $t = 25$

- 4) Work out $112.2 \div 6$

10	$2.309 \times 100 =$
<div style="border: 1px solid black; width: 100%; height: 100%;"></div>	
1 mark	

11	$58.2 - 9.47 =$
<div style="border: 1px solid black; width: 100%; height: 100%;"></div>	
1 mark	

12	$\frac{7}{8} - \frac{2}{3} =$
<div style="border: 1px solid black; width: 100%; height: 100%;"></div>	
1 mark	

Ratio and proportion problems (2)

- 1 7 pencils cost £3.64



How much do 4 pencils cost?

£

- 2 A machine can make 120 nails in 4 seconds.

a) How many nails does the machine make in 20 seconds?

b) How many nails does the machine make in one minute?

- 5 Amir has a box of counters.

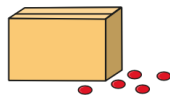
For every 5 red counters in the box there are 2 green counters.

Amir removes 21 red counters.

There are now the same number of red and green counters in the box.

How many green counters are in the box?

Show all your workings.



- 6 The ratio of boys to girls in a class is 1:3
There are 15 girls in the class.

a) How many boys are in the class?

b) How many children are in the class in total?

- 7 The ratio of blue to green balloons is 2:3
There are 20 balloons altogether.

a) How many blue balloons are there?

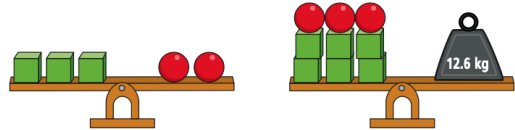
- 3 A farmer says, "For every 2 horses in a field I need to put out 3 bales of hay."

a) How many bales of hay are needed for 8 horses?

b) How many bales of hay are needed for 3 horses?

c) If there are 18 bales of hay in a field, how many horses could the farmer put there?

- 4 Alex balances some scales.



Work out the mass of one of the cubes.

kg

© White Rose Maths 2020

b) How many green balloons are there?

- 8 Three points lie in a straight line.



- The distance from A to B is 3 times the distance from B to C.
- The distance from A to B is 27 cm.

What is the distance from A to C?

cm

- 9 The ratio of 20p coins to 5p coins in a money box is 5:2
There are fifteen 20p coins.
How much money is in the box?

- 1) Mani wants to buy two friendship bracelets, one for her and one for a friend.



£6.24 for 6 friendship bracelets.

Brilliant Bracelets


£7.60 for 8 friendship bracelets.


Jewellery For You

- a) Which shop should she buy the bracelets from to get the best price?
- b) How much would it cost her?
- 2) Below is a recipe to make a chocolate cake that serves 10 people.

Recipe for Chocolate Cake

250g butter 

200g flour 

100g sugar 

2 eggs 

300g chocolate 

4 tbsp vanilla 

Look at each child's statement about the recipe. Correct any statements which are wrong.

Kulijeet says, "If I was using the recipe to make a cake for one person, I would need 25g of butter, 10g of sugar and 3g of chocolate."

Hamish says, "I need 60g of flour and 60g of chocolate to make a cake for 3 people."

Rhys says, "I will need to buy 4 eggs and put in 5tbsp of vanilla if I use the recipe to make a cake for 15 people."

Samira says, "I have 380g butter in my cupboard so I have enough butter to make a chocolate cake that serves 15 people."

- 3) Mei, Eva and Aron are discussing how much pocket money they each get.

Mei:

I get £5.80 every two weeks.

Eva:

I get 12.40 every four weeks.

Aron:

I get £9.60 every three weeks.

True or false? Explain your answers fully.

- a) Aron would receive £12.90 pocket money over a period of 4 weeks.
- b) Over a period of 3 weeks, Eva would get more pocket money than Mei.

twinkl.com

11. Habib is shopping for groceries, but these savoury items only come packaged in bulk. Calculate the cost of each individual item.

Super Saver

Bhajis 6 for £3.12	Samosas 9 for £3.42	Spring Rolls 5 for £1.30	Pakorras 8 for £3.44
-----------------------	------------------------	-----------------------------	-------------------------

Food Zone

Bhajis 3 for £1.53	Samosas 7 for £2.59	Spring Rolls 6 for £1.62	Pakorras 3 for £1.92
-----------------------	------------------------	-----------------------------	-------------------------

Mega Mart

Bhajis 4 for £1.96	Samosas 5 for £1.95	Spring Rolls 3 for £1.05	Pakorras 6 for £3.42
-----------------------	------------------------	-----------------------------	-------------------------

Where is each item least expensive?

--

English

Handwriting

Copy a line of each word into your books. Check your spelling as you go. Write each word into a sentence. Not sure what it means? Check the internet or grab a dictionary! ☺

temperature

thorough

SPaG



Unit: Punctuation: the colon, semicolon, and more

<https://www.khanacademy.org/humanities/grammar/punctuation-the-colon-semicolon-and-more>

9. Underline the **expanded noun phrase** in the following sentence:

Before lunchtime, Jasmine snacked on a delicious, nutritious fruit salad.

.....

10. Tick for each sentence whether it is in **present progressive tense** or **past progressive tense**.

Sentence	Present Progressive	Past Progressive
Dave was playing a great tune on his guitar.		
Dave is singing while he cooks his meal.		
Dave was lighting a firework at the Bonfire Night display.		
Dave is sneaking into the kitchen to get some chocolate.		

.....

11. Add the **three** missing **commas** into this sentence.

After washing his hair Dave got into his car which he had also cleaned that day and drove off on his night out.

.....

12. Label whether each of these words is an **adjective** or **noun**.

Dave was climbing a particularly **steep** hill when his **shoe** fell off and landed in a **muddy** puddle.

↑

↑

↑

.....

13. Match each **root word** with the correct **suffix** to create a **verb**:

note

ate

pulse

ise

critic

ify



Complete Reading Eggs Lesson

Chose a word from The Raft, place it in the centre and complete the vocabulary deconstruction sheet.

<u>Antonyms:</u>	<u>Prefix:</u>	<u>Root word:</u>	<u>Suffix:</u>
<u>Synonyms:</u>	<u>Word:</u>	<u>Etymology:</u>	
<u>Definition:</u>			
<u>Sentences:</u>			

TEXT ON MONDAY'S LESSON

Where did these scientists complete much of their research?

Charles Darwin _____

Dr Henry Bernard Kettlewell _____

1 mark

Why do you think Alfred Russell Wallace wrote to Charles Darwin about his discoveries?

1 mark

Dr Kettlewell also **conducted** field studies ...

What does the **conducted** mean in this sentence?

Tick **one**

☐ visited ☐ found out

☐ carried out ☐ pollution

1 mark

Tick the sentence which is **punctuated correctly**.

☐ I bought a lot of food for the party; crisps, cakes and breadsticks.

☐ My hair was still wet after my bath; Mike showed me his latest painting.

☐ The car was running low on petrol; Dad needed to find a petrol station.

Polly's mum wouldn't let her walk to the shops alone

Mr. Turner forgot to charge his phone

The fence is still wet

Tom practised running almost every day

Mike loves curry

he eats a chicken tikka every Friday.

It ran out of power before lunch.

I have just finished painting it.

she was afraid Polly would get lost.

he wanted to win the race.

Challenge 1

Match the two clauses that would be joined with a semi-colon.

Challenge 2

Write the sentences in your book.

Punctuate each of these sentences using a **semicolon**.

It was very hot we had the windows open all day.

You shouldn't leave lights on when you're not in the room it wastes electricity.

Bina is getting up early tomorrow she has a long drive to Manchester.

To continue to write report.

Wednesday 3rd March

How has your creature adapted to its habitat?

Adaptation

During the industrial revolution, 98% of the peppered moths in the city of Manchester were recorded to be totally black, with no speckling at all. This was because air pollution from coal fires and factories killed the lichen and covered trees and walls with a layer of soot. As a consequence, the black peppered moths were better adapted to this new environment, as they were able to camouflage themselves on the darker surfaces to protect themselves from predators. This adaptation meant they were more likely to reproduce and lay eggs that would hatch more black peppered moths and the black gene was more likely to be passed onto future generations. Hence, fewer of the speckled peppered moths were in existence by the end of the nineteenth century.



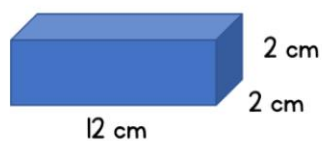
This photo shows how the colourings of the different moths can help them to camouflage against different backgrounds.



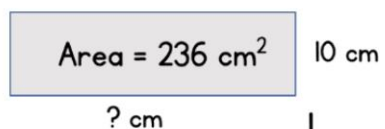
Thursday

Number: Ratio	
Ratio and proportion problems 3	https://www.bbc.co.uk/bitesize/articles/zffq4xs

- 1) Find the volume of the cuboid.



- 2) Find the length of the missing side.



- 3) How many m are there is $6\frac{1}{2}$ km?

- 4) Divide 5,176 by 8

13 $4231 \times 43 =$

	4	2	3	1
x			4	3

2 marks

14 $6372 \div 59 =$

5	9	6	3	7	2
---	---	---	---	---	---

2 marks

15 $\frac{1}{2} \times \frac{7}{12} =$

1 mark

- 1) Freya is making fruit smoothies using this recipe:



Recipe for Fruit Smoothie
(serves 4 people)

500g bananas

200g strawberries

180g raspberries

360ml milk

80ml natural yogurt

- Write the quantities of each ingredient Freya will need if she makes a smoothie for herself and her friend.
 - Freya is making smoothies for 6 people. Write the quantities of each ingredient she will need.
 - Freya holds a birthday party for a total of 16 people. Give the quantities of each ingredient she will need for the party.
 - Freya is using 400ml of natural yogurt. How many people is she making smoothies for?
- 2) A beef stew is cooked for 40 minutes for every 1 litre of stew. For how many hours will it need to be cooked if there is $4\frac{1}{2}$ litres of stew?
- 3) Two friends are sharing a collection of 48 football cards. Jack gives Owen three cards for every one card that he keeps for himself.

How many football cards does Jack keep for himself?



- 4) There are two shops that sell the same glue sticks.

Special Offer

Only £2.96 for
4 glue sticks!

The Stationery Shop

Special Offer

Just £6.57 for
9 glue sticks!

Cheap Stationery

Which shop sells glue sticks for the lowest price?
Explain how you know.

twinkl.com

- 1) Two different shops are selling the same cans of drink. Each shop is running a different special offer.



Shop 1:

SPECIAL OFFER

Get 3 cans for
the price of 2!



Shop 2:

SPECIAL OFFER

Get 5 cans for
the price of 3!



- Which shop will give me the cheapest price for each individual can of drink and by how much?
- I decide to buy 30 cans of drink for a party. If I use the special offers, how much will it cost me to buy the drinks from each shop?
- Shop 3 sells 6 cans for the price of 4.

Shop 3:



Out of the three shops, which is it cheapest for me to buy 30 cans from?

- 2) There are two bags of marbles.



In the first bag, for every 3 red marbles there are 2 green marbles.

In the second bag, for every 1 red marble there are 2 green marbles.

There are the same number of marbles in each bag.

The second bag of marbles contains 10 green marbles.

How many red marbles are in the first bag?

twinkl.com

Shu, Lowri and Hamish are discussing how much pocket money they each get.

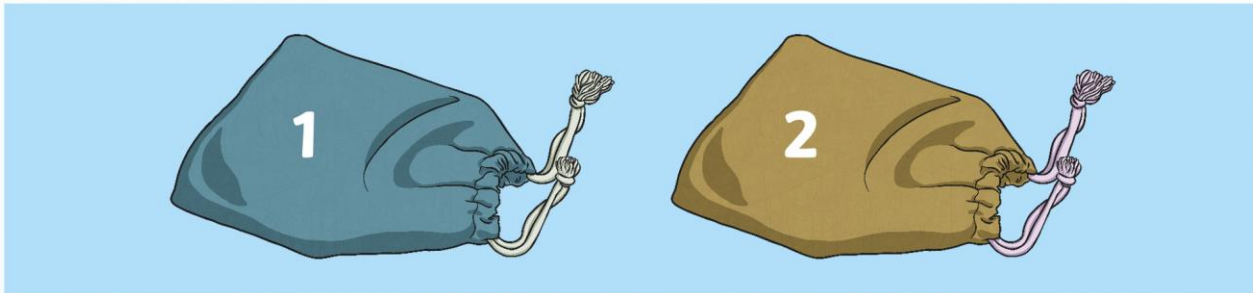
<div style="background-color: #007bff; color: white; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">Shu</div> 	<div style="background-color: #007bff; color: white; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">Lowri</div> 	<div style="background-color: #007bff; color: white; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">Hamish</div> 
I get £6.20 every two weeks.	I get 12.80 every four weeks.	I get £9.90 every three weeks.

True or false? Explain your answers fully.

a) Hamish would receive £13.20 pocket money over a period of 4 weeks.

b) Over a period of 3 weeks, Shu would get more pocket money than Lowri.

There are two bags of marbles.



In the first bag, for every 3 red marbles there are 5 green marbles.

In the second bag, for every 2 red marbles there are 4 green marbles.

There are the same number of marbles in each bag.

The second bag of marbles contains 8 red marbles.

How many green marbles are in the first bag?

English

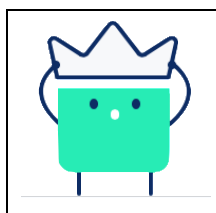
Handwriting

Copy a line of each word into your books. Check your spelling as you go. Write each word into a sentence. Not sure what it means? Check the internet or grab a dictionary! ☺

twelfth

variety

SPaG



Unit: Punctuation: the colon, semicolon, and more

<https://www.khanacademy.org/humanities/grammar/punctuation-the-colon-semicolon-and-more>

14. Circle the words in this sentence that need **capital letters**.

when dave sings an elvis song, he dreams about living in america.

.....

15. Which of these sentences is **grammatically correct**? Tick **one**.

Dave was the bestest dancer out of him and his brother.

☐

Dave was a much betterer dancer than his brother.

☐

Dave was bestest at dancing than his brother.

☐

Dave was much better at dancing than his brother.

☐

.....

16. Underline **both** of the **modal verbs** in these sentences:

Everyone could see Dave as he appeared over the horizon. If he kept sprinting, he might win the race.

.....

17. Tick the box where a **semi-colon** should go to separate the independent clauses:

Every year, Dave goes on holiday to Whitby it often rains while he's there.

☐☐☐

.....

18. Place **commas** around the **relative clause** in this sentence:

Dave's dishwasher which he had owned for almost ten years had started to leak water.



Complete Reading Eggs Lesson

TEXT ON MONDAY'S LESSON

According to scientists, where were more speckled peppered moths found?

1 mark

Dr Kettlewell completed his experiments in 1952. Give **two** reasons why he may have chosen to study the peppered moth?

1. _____

2. _____

2 marks

The author has organised the report using **headings**.

Draw lines to match each heading with the main content of that section.

Natural Selection	Describing Charles Darwin's discoveries
Theory of Evolution	How some species are better adapted to different habitats
Adaptation	How the peppered moth changed to suit its environment
Research	How species and their habitats can change and evolve over time
Evolutionary Process	Discoveries made by Dr Kettlewell

2 marks

Tick the sentence where a *colon* is correctly used.

- ☐ I bought lots of ingredients for the cake some: butter, a bag of flour, eggs and a bar of chocolate.
- ☐ I bought lots of :ingredients for the cake some butter, a bag of flour, eggs and a bar of chocolate.
- ☐ I bought lots of ingredients for the cake: some butter, a bag of flour, eggs and a bar of chocolate.

One thing ruined the picnic:

He left three things behind at school:

At the shop I bought lots of fruit:

Mike tidied three rooms:

lemons, limes, apples, bananas and oranges.

his hat, scarf and coat.

his bedroom, the kitchen and the living room.

ants!

Challenge 1
Match the clauses to the correct extra information.

Challenge 2
Write the sentences in your book.

Insert a *colon* into each sentence.

I have only one word to say to you no.

Polly met three friends at the park Tia, Bina and Dylan.

Mike has a favourite food curry.

You will need to summarise the key points from your report.
What is the key information you want your reader to remember?
Is your creature endangered or are they a new species?

Although the Panda is a popular creature, it is still endangered. It is feared that the species will soon become extinct as their habitat is being destroyed which is cutting off their vital food supply. Poachers continue to hunt them reducing their numbers even further. Therefore, if something is not done to protect these Pandas as a matter of urgency, these cute popular bears will be only seen in pictures.

Name _____

1 Complete the sentences.



For every 1 apple, there are pears.

1 mark



For every 2 oranges, there are lemons.

1 mark

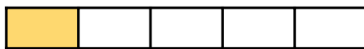


Complete the sentence.

For every 1 cone, there are spheres.

1 mark

6 Part of a bar is shaded.



What fraction of the bar is shaded? _____

1 mark

What is the ratio of shaded parts to non-shaded parts? _____

1 mark

7 For every 3 boys in a class, there are 2 girls.



If there are 20 children in the class, how many girls are there? _____

2 marks

8 The ratio of red to blue cubes in a tower is 1 : 5

There are 8 red cubes in the tower.

How many blue cubes are there in the tower? _____

1 mark

9 Ellie has some red and green grapes.

For every 3 green grapes she has 5 red grapes.
She has 24 green grapes.

How many more red grapes than green grapes does Ellie have? _____

2 marks

3 Pat has these coins.



Harry has these coins.



Pat says that for every 3 coins she has, Harry has 5 coins.
Is Pat correct? Explain your answer.

1 mark

4



The ratio of circles to squares is :

1 mark



Complete the sentences two ways.

The ratio of rectangles to triangles is :

The ratio of rectangles to triangles is :

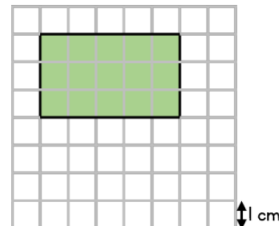
2 marks

5 Circle the equivalent ratios.

2 : 8 4 : 1 3 : 12 1 : 4 3 : 16

2 marks

10 A field is drawn to scale 1 cm on the grid represents 4 metres in real life.



What is the length of the field? _____ m

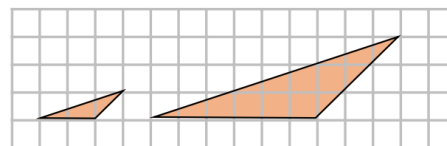
1 mark

Another field is 10 m long and 8 m wide.
Draw this field on the grid above.

2 marks

11 Here are two triangles.

Triangle A is an enlargement of Triangle B.



What is the scale factor of enlargement? _____

1 mark

Circle how confident you feel with ratio.

1 2 3 4 5
Not Very
confident confident

Vintage Car Festival

Your school are planning to run a vintage car festival to raise funds over the summer. Year 6 have been asked to help out with planning and running the event.



There's plenty of work to do and lots of mathematical thinking needed to get the festival off the ground – read on and rise to the challenge.

The school have looked into the council rules regarding the number of people and cars they will be allowed to have on site. The Head Teacher has given you a link to a website which gives guidance and she wants you to calculate how many tickets they can sell for cars and visitors.

1. The school site is 250m^2 . How many people and cars can attend the festival?

You need to inform the local police as they have to provide 2 officers for every 50 visitors who attend, to help with traffic and security. We can assume each car will have 2 people with it and these must be counted in the policing figures.

2. How many police officers can we expect to be in attendance?

3. There is a fundraising target of £2500 for ticket sales. Taking this into account, how much should you charge per ticket to meet the target?

The ratio of adult to children's tickets is likely to be 2:1.

4. If you set your children's tickets at £5, how much will your adult tickets need to be to ensure you make enough money? Round your ticket price to the nearest 50p.

Quick Links

[Festival search](#)

[Police contact](#)

[Resources](#)

[Refuse support](#)

[Gallery](#)

[Contact Us](#)

Health and Safety:
community projects

Attendance & Tickets

For every 5m^2 of the site, you can sell 4 tickets.

For every 10m^2 , you are able to host 3 cars.

The Year 5 children and their parents have decided to run a car wash at the event and will need plenty of water and soap to do a really good job. There are rolling barrels which can hold 40 litres of water. The children have calculated that they will use soap and water in the ratio of 1:19.



5. If they plan to wash 50 cars, and each car needs 15 litres of soapy water, how many barrels will they fill and transport? How much soap will they need?

We need to advertise the event to car owner clubs and visitors. The school produce two flyers: one for car owners and one for visitors.

6. Using the information in question 2, what ratio should they print the flyers for owners to visitors? Write the ratio in its simplest form.

Looking at previous events, the printers advise that you deliver more flyers than the number of people you expect to attend. Their suggested ratio is 4:1 (4 flyers for every 1 expected attendee).

7. How many flyers should the school order for car owners and visitors?

Year 4 decide to raise money by selling photos of people in their favourite car. They canvas the owners who have signed up and $\frac{4}{5}$ of the replies agree to take part.

8. What ratio of owners agreed?



The cost of photo paper varies widely from one shop to another.

9. Which of the following represents the best value for money?

<input type="checkbox"/>	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>120 sheets</p> <p>£10.80</p> </div>	<input type="checkbox"/>	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>90 sheets</p> <p>£9.45</p> </div>	<input type="checkbox"/>	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>250 sheets</p> <p>£20</p> </div>
--------------------------	---	--------------------------	---	--------------------------	--

To staff the event, school will be relying on volunteers. All parents in school are asked whether they can help out. $\frac{3}{8}$ of the 400 parents reply and the ratio of yes to no is 3:2.

10. How many parents have agreed to help?

To book a place at the event, vintage car owners must complete a form giving details of their car's make, model and colour. There have been so many entries that you now need to manage how to display the cars. To ensure the festival looks inviting, a good mix of colours will need to be parked along side each other. The school council devise a ratio to ensure each arena is enticing to visitors. So far red, green and black cars have all entered. The ratio is 4:2:1.

11. You have space for 48 red cars, how many green and black spaces are there?

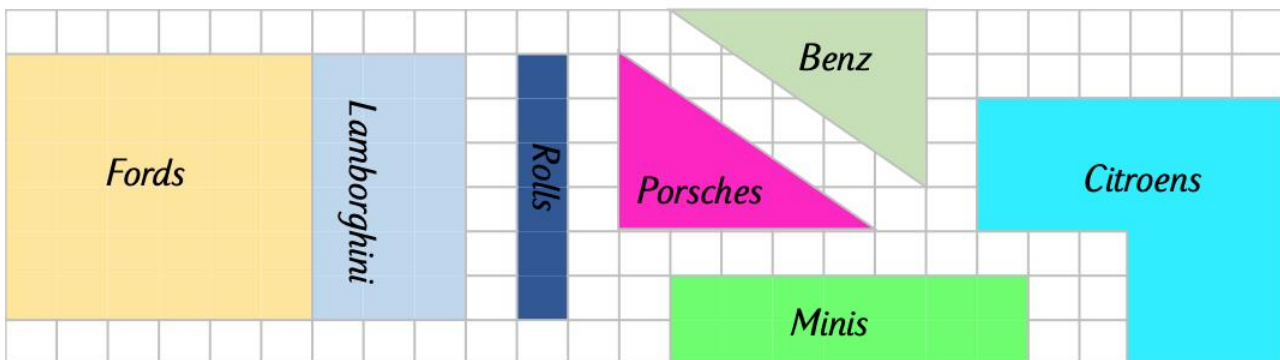
At the last minute, an influx of yellow cars applications arrive. The council decide there should be as many yellow cars as green and black put together.



12. Write the new ratio for red, green, black and yellow entries.

13. How many cars do we have altogether now? By how much will the school have to increase their space? (use Qu 1. to help)

A plan of the different car displays is created so that the areas can be marked out before the day. See the original plan below.



Due to an increase in the number of Porsches, Benz, Minis and Rolls vintage vehicles, the fields need to be made larger by a scale factor of 1.5. There have been less Ford, Lamborghini and Citroen entries than expected so they will need to be reduced by a scale factor of $\frac{1}{3}$.

14. Use the grid on the next page to redraw the plan. You may need to rotate the grid to complete the task. Remember to label your parking areas.

The festival is underway and your help has been invaluable in ensuring the day runs smoothly. All that is left to do is decide which car is your favourite and go get a photo!!



Final Map of Parking for Car Festival.

This image shows a full page of blank graph paper. The grid consists of thin, light gray horizontal and vertical lines that intersect to form a uniform pattern of small squares across the entire surface. There are no margins, text, or other markings on the paper.

English Handwriting

Copy a line of each word into your books. Check your spelling as you go. Write each word into a sentence. Not sure what it means? Check the internet or grab a dictionary! 😊

vegetable

vehicle

SPaG



Unit: Punctuation: the colon, semicolon, and more

<https://www.khanacademy.org/humanities/grammar/punctuation-the-colon-semicolon-and-more>

19. Which of these **plural possessive apostrophe** sentences is correct? Tick **one**.

All of his friends' tents were pitched in a line on the camping field.

☐

All of his friend's tents were pitched in a line on the camping field.

☐

All of his friends tents' were pitched in a line on the camping field.

☐

All of his friends tent's were pitched in a line on the camping field.

☐

20. **Underline** the **conjunction** in these sentences:

Dave loves his fish and chips. Although he knows that fatty food is unhealthy, he still eats them twice a week.

21. Which of these sentences shows the correct agreement between **subject** and **verb**? Tick **one**.

At Dave's birthday party, everyone eat cake.

☐

At Dave's birthday party, everyone bring presents.

☐

At Dave's birthday party, everyone plays party games.

☐

At Dave's birthday party, everyone sing 'Happy Birthday'

☐

22. Add the missing **commas** to the following sentence.

Dave got a joke book a remote control helicopter a new jumper and some gift vouchers for his birthday.

23. Put a **pair of brackets** around the **parenthesis** in the sentence below:

Dave's journey to Whitby took a long time almost four hours because of a terrible traffic jam on the motorway.



Complete Reading Eggs Lesson

Read the final paragraph and complete the sentence below.

The peppered moth has become a symbol of _____ 1 mark

What can humans learn from the study of the peppered moth?

2 marks

Complete, proofread and edit your reports.

Purpose: to write a report describing how a species has adapted to its environment and evolved over time

.....

Revisited Skills Check

I can ...	Self Assessment	Teacher Assessment
use capital letters, full stops exclamation and question marks correctly.		
include noun phrases, using adjectives and prepositional phrases to expand the nouns.		
use headings to help organise paragraphs.		
consistently use the correct tense.		

Reports Skills Check

I can ...	Self Assessment	Teacher Assessment
plan writing using ideas from other texts that I have read.		
use technical and precise vocabulary.		
use passive verbs.		
use a range of cohesive devices (adverbials, conjunctions, pronouns etc).		
include facts to add information for my reader.		
use a range of layout devices: headings, subheadings, diagrams, glossaries, bullet points.		
Proofread my work, checking for errors with: punctuation grammar subject and verb agreement.		
Use a dictionary when proofreading my work for spelling errors.		

Science

Circulatory System

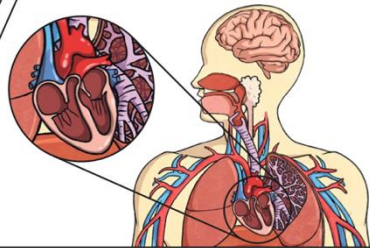
Animals Including Humans

Year 6

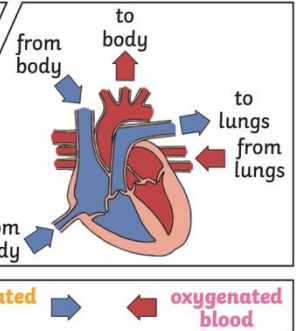
Key Vocabulary

circulatory system	A system which includes the heart, veins, arteries and blood transporting substances around the body.
heart	An organ which constantly pumps blood around the circulatory system .
blood vessels	The tube-like structures that carry blood through the tissues and organs. Veins, arteries and capillaries are the three types of blood vessels.
oxygenated blood	Oxygenated blood has more oxygen. It is pumped from the heart to the rest of the body.
deoxygenated blood	Deoxygenated blood is blood where most of the oxygen has already been transferred to the rest of the body.

The **heart** pumps blood to the lungs to get oxygen. It then pumps this **oxygenated blood** around the body.

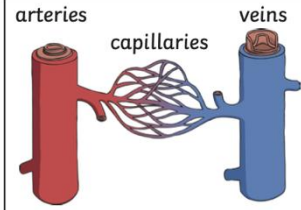


Mammals have **hearts** with four chambers. Notice how the blood that has come from the body is **deoxygenated**, and the blood that has come from the lungs is **oxygenated** again. The blood isn't actually red and blue: we just show it like that on a diagram.



Capillaries are the smallest **blood vessels** in the body and it is here that the exchange of water, nutrients, oxygen and carbon dioxide takes place.

Arteries carry **oxygenated blood** away from the **heart**.



Veins carry **deoxygenated blood** toward the **heart**.

If you linked up all of the body's blood vessels, including arteries, capillaries, and veins, they would measure over 60,000 miles.

Animals Including Humans

Year 6

Key Vocabulary

drug	A substance containing natural or man-made chemicals that has an effect on your body when it enters your system.
alcohol	A drug produced from grains, fruits or vegetables when they are put through a process called fermentation.
nutrients	Substances that animals need to stay alive and healthy.

Plasma is liquid. The other parts of your blood are solid.



Platelets help you stop bleeding when you get hurt.



Red blood cells carry oxygen through your body.

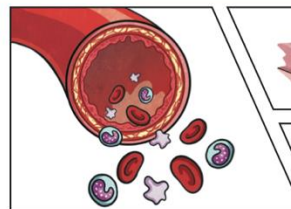


White blood cells fight infection when you're sick.

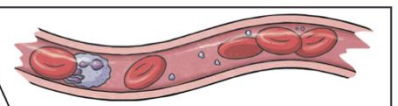
Drugs, **alcohol** and smoking have negative effects on the body.



A healthy diet involves eating the right types of **nutrients** in the right amounts.



The liquid part of blood contains water and protein. This is called plasma.



Blood transports:

- gases (mostly oxygen and carbon dioxide);
- nutrients** (including water);
- waste products.

Regular exercise:

- strengthens muscles including the heart muscle;
- improves circulation;
- increases the amount of oxygen around the body;
- releases brain chemicals which help you feel calm and relaxed;
- helps you sleep more easily;
- strengthens bones.

It can even help to stop us from getting ill.





Retrieval practice

1. How many teeth are in a complete set of adult human teeth? Circle the correct answer.

32

20

28

2. What are the three main functions of the human skeleton?

a. _____

b. _____

c. _____

3. Fill in the table

Organ	Main function (job)
	Pumps blood around the body.
lungs	
	The centre of where we make decisions and control the entire body.
liver	
skin	
	Filters the liquid in our body and produces urine
stomach	

Previous learning:

4. What is adaptation?

How is oxygen transported around our bodies?



2. Fill in the gaps in the passage below.

- Cells
- organs
- blood
- circulatory
- oxygen
- lungs
- heart
- oxygen
- carbon
- circulation
- veins
- blood

The human circulatory system is a group of _____ and vessels which transports _____ around the body. Without it, your _____ would never receive the _____ and food they need to function. Your _____ is busy beating all the time in order to pump _____ through your arteries and keep it in _____. Once it has dropped off the food and oxygen the blood is transported back to your heart through your _____. The lungs are also a part of the _____ system. Blood is pumped to the _____ where it drops off waste _____ dioxide and picks up fresh _____ before going around the body again.



3. Read the following passage about the components of blood.

Blood transports materials around the body and protects against disease. It contains several different components; each component has a different job. Red blood cells transport oxygen. White blood cells protect against disease. Blood platelets help the blood to clot and repair a cut. Plasma is a liquid that carries these cells. It also transports important nutrients.

Blood

Red Blood Cells



Platelets



White Blood Cells



4. Fill in the table using the passage above.

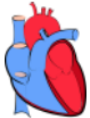
Component of blood	Function
	Help protect against disease.
platelets	
	A liquid that carries blood cells and other nutrients.
red blood cells	

**5. Describe the steps of the circulatory system.**

- Oxygen
- blood
- Carbon dioxide
- pumps
- collects
- disposes



First, _____



Next, _____



Then, _____



After that, _____



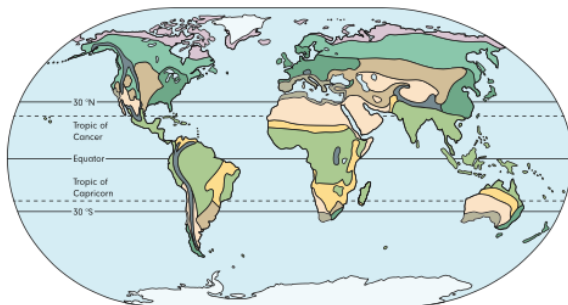
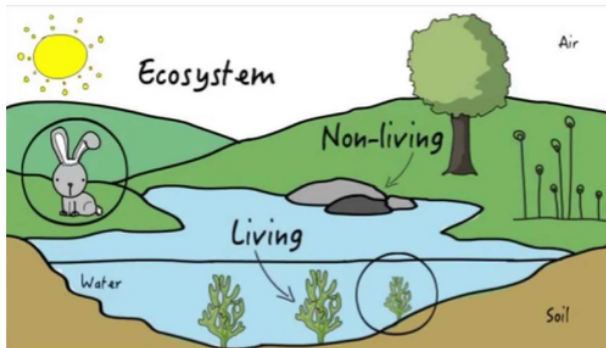
Finally, _____

Geography

Biomes

Vocabulary

Biome	A large area of land with a particular climate, type of plants and animals.
Ecosystem	A community of living and non-living things that work together.
Climate	The general weather conditions and patterns in an area.
Deciduous	A tree that sheds its leaves in the autumn.
Dormant	When a plant or animal is in a deep, long sleep.
Equator	The imaginary line that runs around the middle of the earth
Fauna	The animals that normally live in a particular biome.
Flora	The plants that normally grow in a particular biome.
Latitude	Imaginary lines goes around the earth horizontally.
Temperate	Mild weather, further away from the equator.
Tropics	Any place on earth near the equator.
Deforestation	Cutting down trees.



Key	
Tropical forest	Temperate broadleaf forest
Savanna	Northern coniferous forest
Desert	Tundra
Chaparral	High mountains (coniferous forest and alpine tundra)
Temperate grassland	Polar ice

The Six Major Biomes

Tropical Rainforest	<ul style="list-style-type: none"> Very steady temperature between 20°C and 25°C. Rains all year long. The trees are very tall and varied. Most of the plants are evergreen, not deciduous. 	
Temperate Deciduous Forest	<ul style="list-style-type: none"> Temperature ranges from -30°C to 30°C. Goes through all four seasons. Range of trees, most lose their leaves in the autumn. Even rainfall throughout most of the year. 	
Coniferous forest (Taiga)	<ul style="list-style-type: none"> Temperature ranges from -54°C to 30°C. Low average temperature. Most of the trees are evergreen. Largest land biome. 	
Tundra	<ul style="list-style-type: none"> Temperature ranges from -34°C to 6°C. Coldest of all the biomes. Little rain, lots of frost. No trees grow, and only a few small plants. 	
Grasslands (Savanna)	<ul style="list-style-type: none"> Dry season and a rainy season. Temperature ranges from -40°C to 40°C+. Mostly grass grows, occasional individual trees. 	
Desert	<ul style="list-style-type: none"> Temperatures over 50°C in the day, below freezing at night. Very few clouds and very little rain. Very few plants or animals. 	

Link

<https://www.nationalgeographic.org/encyclopedia/taiga/>

Lesson

04

What is the taiga?



Retrieval Practice

1. Where can the tundra be found?
2. In winter, what is it like in the tundra?
3. Tundra is found in the UK.
True / false
4. What controls where a biome is located?
5. Why are biomes really important to humans?
 - a. Biomes provide nice places to visit.
 - b. Biomes provide food and water for humans.
 - c. Biomes allow humans to live however they want without consequences.



5. Use the information to answer the questions.

a. Why is there a low level of biodiversity in the tundra?

b. How have plants adapted to survive in the tundra?

c. Why is change to the climate of the tundra a serious problem?



6. What is the tundra?

Tips:

- Where is the tundra found?
- What is the climate like in the tundra?
- What plants and animals live in the tundra?
- Why is the tundra very fragile?



2. Read the information about the taiga.

Taiga is also known as coniferous forest and boreal forest. Taiga is the largest land-based biome and is largely found across northern North America, northern Europe and Northern Asia. It is usually found just below the tundra biome, where temperatures have risen and rainfall increased enough to allow trees to grow. Taiga is also found in mountainous areas that are not as far north, as similar conditions are found up in the mountains. The winters are long and cold, and the summers are quite short and mild, with lots of rain.



3. Use the information to answer the questions and unjumble the sentences.

a. What is the taiga also known as?

b. quite a lot of The taiga receives precipitation.

c. Where is the taiga found?

d. the largest is The taiga land-based biome.



4. Complete the passage below by adding in the missing words from the word bank below.

The Flora (plants) and Fauna (animals) of the Taiga

Compared to other biomes, the taiga has less _____, meaning there are fewer different species of plants and animals. The most common type of _____ found in the taiga is the conifer, which is also called an evergreen because they don't lose their needles in the winter. The taiga is quite a difficult place to survive because of the _____ temperatures during the winter. This means that animals that live in the taiga have to be especially adapted to _____ in these conditions. For example, animals have to have _____ coats and be able to eat the limited selection of foods available in the taiga. Some animals migrate to warmer places for the _____. In the taiga, predators such as _____, eagles and wolves hunt mammals such as moose, deer and _____.

- tree
- warm
- biodiversity
- winter
- bears
- low
- survive
- squirrels



5. Use the passage above to answer the questions.

a. Why are conifer trees also called evergreen trees?

b. Describe one way in which some animals survive in the taiga.

c. What is the name of one predator found in the taiga?

d. Which of the following animals would you not find in the taiga?
















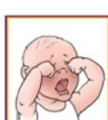









French

Revisit French Phonics. Then work on having a conversation with a partner or family member.

Follow link for this week's lesson.

French grammar: Avoir (to have)

<https://www.bbc.co.uk/bitesize/topics/z6d98xs/articles/z9c4f82>

1.  a / à	2.  an / en / on	3.  q / qu / c / k	4.  sssh ch	5.  eeuh e *
6.  ay é / er* / es / ez / et / ai*	7.  (h)er eu / oeu	8.  guh g	9.  juh ge / j	10.  nyuh gn
11.  eee i / y	12.  an in / ain	13.  au o / au / eau	14.  wa oi	15.  ou
16.  grr r / rr	17.  sss s / ç / c+e / c+i	18.  t t / th	19.  (n)ew u	<p>H is silent at the start of a word.</p> <p>French consonants at the end of words are silent except</p> <p>C, F, L, R.</p> <p>Remember</p> <p>Clear French Language Rules.</p>
20.  uh un	21.  zzz z	22.  eean ien	23.  air ei / ai* è / è er*	

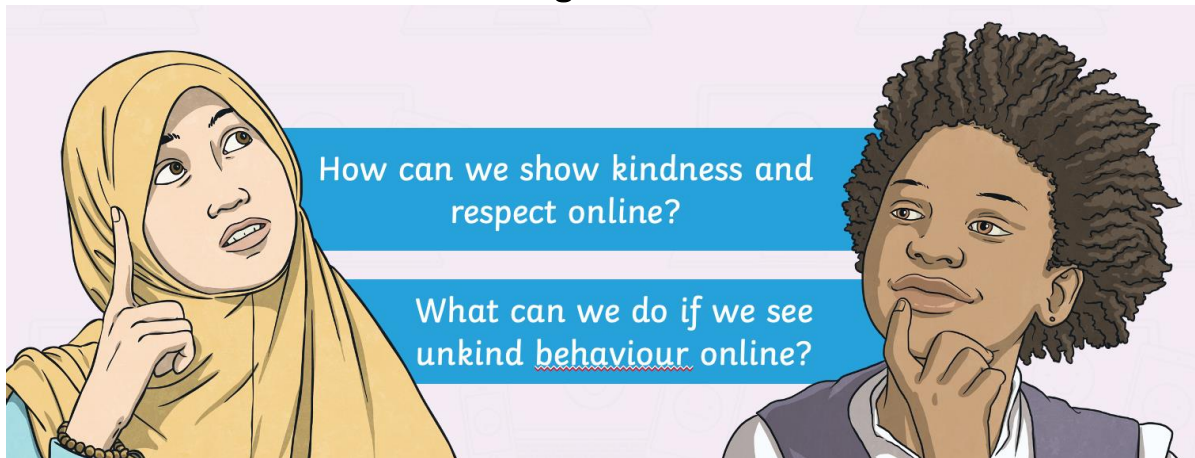
	Hello!	Bonjour Salut	Good day Hi
	How are you?	Comment ça va? Ça va très bien! Ça va comme ci, comme ça. Ça va bien, merci. Ça ne va pas bien. Ça va mal.	How are you? I'm very well. So, so. Good, thank you. Not so good. Bad.
	What's your name?	Comment t'appelles-tu? Je m'appelle...	What are you called? I am called ...
	How old are you?	Quel âge as-tu? J'ai ... ans. Et toi?	What age are you? I am (have) ... years. And you?
	Colours	What is your favourite colour?	Quelle est votre couleur préférée?
	Animals	What is your favourite animal?	quel est votre animal préféré?
	Good bye	Au revoir à bientôt	Good bye See you soon



Computing

Digital Kindness

The Big Questions

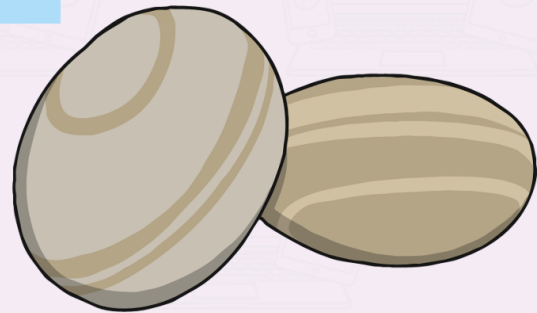


Sticks and Stones may break my bones
but words will never hurt me!

Have you ever heard this saying?

Do you think this is true?

Can words be hurtful?



Are there any other types of behaviour that aren't physical that can upset and hurt people?

There are several different types of cyberbullying:

- Name-calling**
Calling someone mean, nasty or rude names.
- Harassment**
Sending constant harmful or threatening messages to someone.

Tricking
Pretending to be someone's friend online, tricking them into sharing personal information, then sharing it with others.

Trolling
Posting information about someone online that will upset them or cause problems for them. The information may be false.

Exclusion
Deliberately leaving someone out of groups or chats.

Sort the cards into the different types of cyberbullying.

Types of cyberbullying:

- name-calling;
- harassment;
- tricking;
- trolling;
- exclusion.

Archie is being left out of all the group chats that his friends from the hockey club are in.



Frank gets called a horrible name by someone every time he plays his favourite game online.



Athizda has seen a lie on social media about her stealing.



Lewis keeps receiving threatening text messages.



Sienna hasn't received an email invite to a party but everyone else in the class has.



Morgan sent a photo of themselves to an online friend and the friend made it look horrible then shared it with the class.



Bernice has received seven emails saying very unkind and hurtful things about her.



Naomi received lots of mean messages about the fact that she has two dads.



Stevie's friend tricked her into saying that she didn't like her teacher then the friend posted the information online.



Someone posted false information about Danny online, saying that it was him that flooded the school toilets.



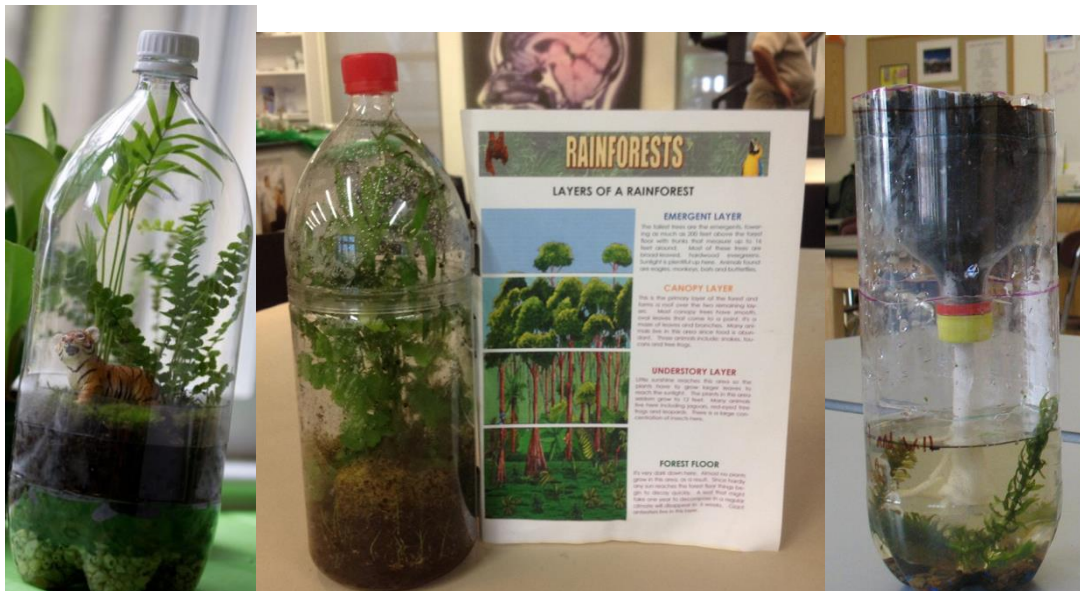
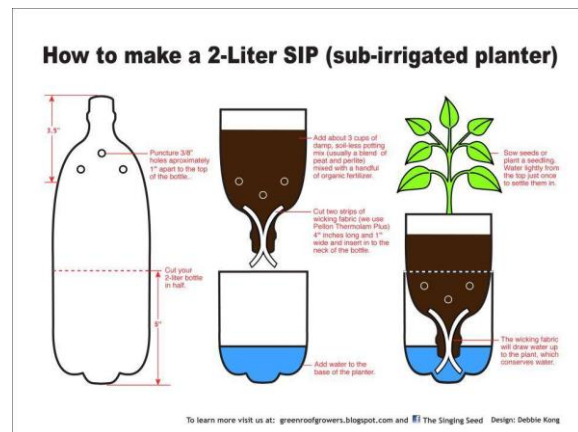
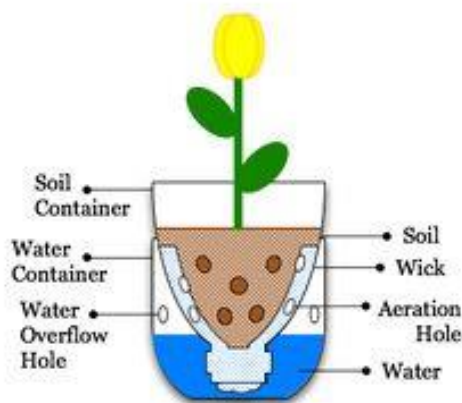
Design and Technology

Over the next few weeks, we will be researching and creating our own biomes, using what we have learnt in Geography.

Using materials and resources you can collect easily; you will create a biome of your choice.

Use your geography knowledge organiser for key words.
Hint: Search 'biome in a bottle' or 'build a desert biome' for ideas.

Create an annotated design of your biome. (consider which materials (or plants and seeds) you are confident you can find or get.



RE

SIKHISM

YEAR 6



Key Vocabulary	
Sikhism	One of the world's main religions.
Sikh	Someone who follows Sikhism .
Guru	Spiritual teacher.
Guru Nanak	The founder of Sikhism .
gurdwara	A Sikh place of worship.
Guru Granth Sahib	The Sikh holy text.
sargun	The belief that God is everywhere and in everything.
nirgun	The belief that God is above and beyond everything.

God is referred to by many names, including:

- Waheguru (Wonderful Teacher);
- Sath Nam (Eternal Reality);
- Akal Purakh (Eternal One).



Main Beliefs

Sikhs believe that:

- there is only one God;
- God cannot be described as either male nor female;
- God is both **sargun** and **nirgun**;
- God created the world and created people to know the difference between right and wrong;
- images of God are forbidden as is worshipping them;
- all people are equal.



Worship

Sikhs worship both in public and in private. **Sikhs** worship together in the **gurdwara**. The word **gurdwara** means 'door to the **Guru**'.

Shoes must be removed and hair covered before entering the main prayer hall to worship. Men and women sit cross-legged on opposite sides, facing the **Guru Granth Sahib**.

Sri Harmandir Sahib

The Sri Harmandir Sahib is also known as the Golden Temple. It is located in Amritsar, India. Its doors open from all sides to welcome people of all faiths.



Key Vocabulary

Nam Japna	The duty of keeping God in mind at all times.
Kirt Karna	The duty of earning an honest living and avoiding crime, begging and gambling.
Vand Chhakna	The duty of giving to charity and caring for others.
shabads	Sacred hymns in the Guru Granth Sahib .

The Ten Gurus

There were ten **Gurus** who spread God's message:

Guru Nanak, Guru Angad, Guru Amar Das, Guru Ram Das, Guru Arjan, Guru Hargobind, Guru Har Rai, Guru Harkrishan, Guru Tegh Bahadur and Guru Gobind Singh.

Symbols

The Khanda is the main symbol of **Sikhism**. The Ik Onkar means 'there is only one God'.



The Guru Granth Sahib

The **Guru Granth Sahib** is the **Sikh** holy book. It contains the messages of all the **Gurus**. It is covered by a rumala when not in use.

The chaur is made from yak's hair. It is waved over the **Guru Granth Sahib** as a sign of respect.

The **Guru Granth Sahib** contains 5867 **shabads**, which were written by six of the ten **Gurus**. They are known as Gurbani (the word of the **Gurus**). The introduction includes the 'Mool Mantar', which contains all the important **Sikh** beliefs.

The 5 Ks

Kesh: **Sikhs** leave hair uncut to show obedience to God.

Kangha: A wooden comb that helps **Sikhs** to keep their hair in place.

Kara: A steel bangle that reminds **Sikhs** to behave well.

Kachera: These are shorts worn as underwear.

Kirpan: A tiny sword worn by **Sikhs**.



How did Sikhism begin?

Religion seems to have existed for as long as humans have. Our earliest religions were pagan – local, based in nature and often polytheistic – but gradually universal, monotheistic (single God) religions emerged. One of the earliest of these monotheistic religions began around 3,500 years ago, and was called Judaism; it is the first of the Abrahamic religions.

The other major Abrahamic religions are Christianity (beginning around 30 CE) and Islam (beginning around 620 CE). Other religions have many Gods (such as Hinduism, which is older than Judaism) or no God (such as Buddhism, which began around 600 BCE).



**1. Put these religions in order, from the earliest to the most recent.
Add approximate dates of when these religions began**

• Buddhism • Christianity • Hinduism • Islam • Judaism



A more recent religion is Sikhism, which began around 1500 CE. Today there are currently over 25 million Sikhs living all over the world, which makes it the fifth largest religion in the world. The religion began in an area of north India known as Punjab, and was founded by Guru Nanak Dev. The word 'Guru' means teacher or disciple, who Sikhs believe revealed the truth of God to other humans.

Although Sikhism is often described as a monotheistic religion, Guru Nanak describes the whole universe as being 'one'. What this means is that even though the universe seems like it is made of many things, it is really just one thing. This is known as monism, or 'oneness'. Guru Nanak called this idea Ik.

In this sense, God is everything and everything is God. There is nothing outside of God, who is greater than the universe. This view is known as panentheism and is a difficult concept to understand.



2. Watch this video which explains the idea of monism and panentheism.

<https://www.youtube.com/watch?v=pTRTtYUONGs>



3. How does panentheism differ from the theism of the Abrahamic religions?

Theism

- _____
- _____
- _____
- _____

Panentheism

- _____
- _____
- _____
- _____

Guru Nanak was born to Hindu parents in an empire that was divided in its religious beliefs. Although Punjab had been historically Hindu, the new rulers were Muslims. Nanak decided to go on a great pilgrimage and visit the Holy sites of both religions (including Mecca) to decide whether he should follow Islam or Hinduism.

At the time, Hinduism had a caste system. This means that people were put into different four different categories, with some priests and intellectuals (Brahmins) being seen as better than other people, like labourers who did manual jobs like building. Below all of the castes, or levels, were a group known as untouchables. It was forbidden for Hindus to interact or eat with this group.

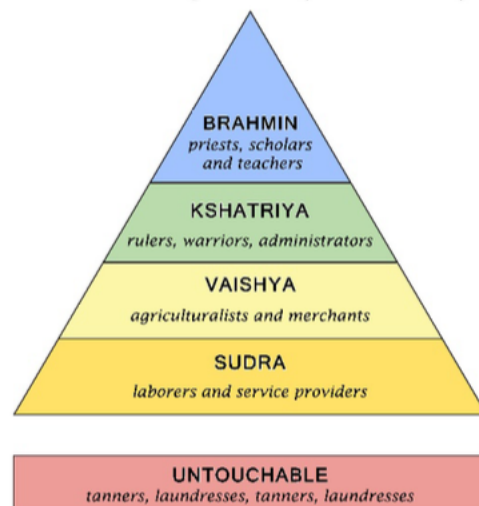


4. What is important for people to consider when deciding which religion to follow?

However, he was not completely satisfied with either, and in particular disliked the authority of priests and more transactional elements of religion. Following his pilgrimage, Nanak received a message from God, who told him that he had been released from the endless cycle of birth, death and rebirth.

Sikhs believe that God revealed to Nanak that all people are equal and that all people can be at one with God through prayer and living a good life. There are no Muslims or Hindus, only people. Nanak did still retain certain parts of Islamic and Hindu teaching, but began to teach followers of each religion that there was a new way, a new path to God. He spent 20 years teaching this new message.

Varna system (Hinduism)





5. How does the caste system go against Nanak's understanding of God?

Guru Nanak wanted to break down this system. His belief that everyone was equal, and that God was in everyone – God was everyone – meant that the caste system did not make sense to him. To show this, Nanak created a community where everyone could eat together, regardless of their status. This communal meal was known as langar and is still an important part of Sikhism today. Everyone cooks together and shares food together.

These new Sikh communities welcomed anyone who wanted to join. They prayed together and did community work for others. Before Nanak died, he named one of his followers, Angad Dev, to become the next teacher – the next Guru.



6. Write the main events of Guru Nanak's life on this a timeline: Sketch a picture to represent the part of his life.

1469

Nanak Dev
is born.



7. Watch this video. What are the important features of Sikhism?



8. Redraft your response following a class discussion.

VIDEO: <https://www.bbc.co.uk/teach/class-clips-video/religious-studies-ks2-what-is-sikhism/zn4h382>

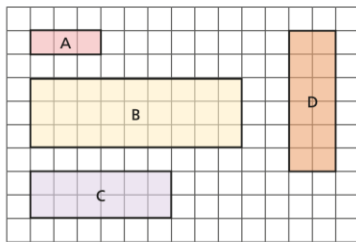
Answers

Arithmetic

question	answer	marks
1	117	1
2	0	1
3	7970	1
4	215	1
5	546	1
6	1.999	1
7	4184	1
8	263 293	1
9	120	1
10	230.9	1
11	48.73	1
12	$\frac{5}{24}$	1
13	181 933	2
14	108	2
15	$\frac{7}{24}$	1
16	$\frac{1}{27}$	1
17	27.18	1
18	349.36	1

Calculating scale factors

- 1 Complete the sentences.

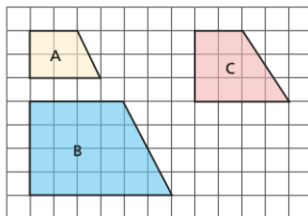


Shape B is an enlargement, by a scale factor of $\boxed{3}$, of shape A.

Shape C is an enlargement, by a scale factor of $\boxed{2}$, of shape A.

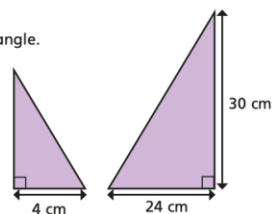
Shape D is an enlargement, by a scale factor of $\boxed{2}$, of shape A.

- 2 Shape B is an enlargement of shape A. Shape C is not an enlargement of shape A.



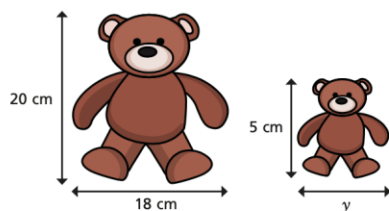
Talk to a partner about why this is the case.

- 5 The two triangles are similar.
Find the area of the smaller triangle.



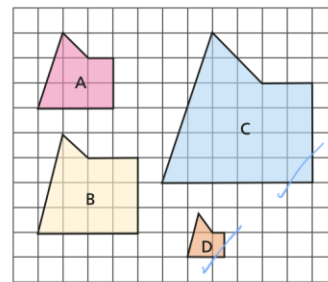
area = $\boxed{10}$ cm²

- 6 These two children's toys are similar.
Find the length marked y .



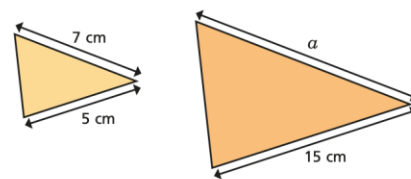
$y = \boxed{4.5}$ cm

- 3 Tick all the shapes that are an enlargement of shape A.



How do you know which shapes are enlargements?

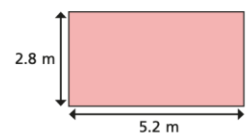
- 4 The two triangles are similar.
Find the length of a .



$a = \boxed{21}$ cm

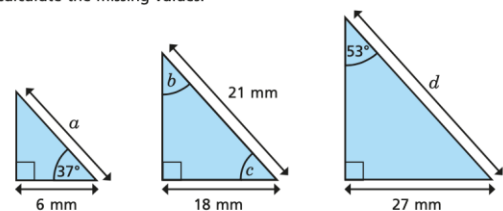
© White Rose Maths 2019

- 7 The rectangle is enlarged by a scale factor.
The perimeter of the enlarged rectangle is 64 m.
What is the scale factor of enlargement?

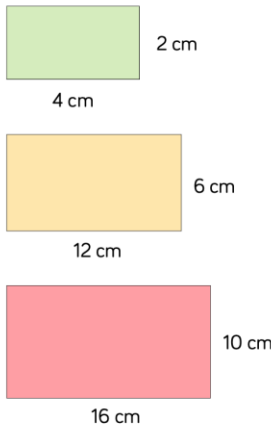


scale factor = $\boxed{4}$

- 8 The diagram shows three similar triangles.
Calculate the missing values.

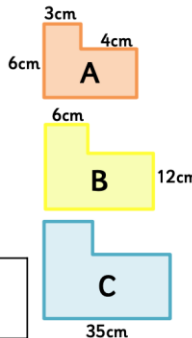


$a = \boxed{7 \text{ mm}}$ $b = \boxed{53^\circ}$ $c = \boxed{37^\circ}$ $d = \boxed{31.5 \text{ mm}}$

<p>A rectangle has a perimeter of 16 cm. An enlargement of this rectangle has a perimeter of 24 cm.</p> <p>The length of the smaller rectangle is 6 cm.</p> <p>Draw both rectangles.</p>	<p>Smaller rectangle: length – 6 cm width – 2 cm</p> <p>Larger rectangle: length – 9 cm width – 3 cm</p> <p>Scale factor: 1.5</p>	<p>Ron says that these three rectangles are similar.</p>  <p>Do you agree? Explain your answer.</p>	<p>Ron is incorrect. The orange rectangle is an enlargement of the green rectangle with scale factor 3. The red rectangle, however, is not similar to the other two as the side lengths are not in the same ratio.</p>
<p>Always, sometimes, or never true?</p> <p>To enlarge a shape you just need to do the same thing to each of the sides.</p>	<p>Sometimes. This only works when we are multiplying or dividing the lengths of the sides. It does not work when adding or subtracting.</p>		

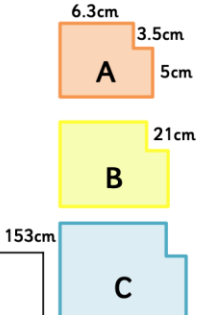
9. Which of these statements are true and which are false?

- Compared to shape A, shape B is enlarged by scale factor 2.
- Compared to shape B, shape C is enlarged by scale factor 2.5.
- Compared to shape A, shape C is enlarged by scale factor 5.
- Each shape is an enlarged version of the previous one.



11. Which of these statements are true and which are false?

- Compared to shape A, shape B is enlarged by scale factor 5.
- Compared to shape B, shape C is enlarged by scale factor 3.
- Compared to shape A, shape C is enlarged by scale factor 18.
- Each shape is an enlarged version of the previous one.



Mastery

9. They are all true.

11. They are all true except for a. Shape B is an enlarged by scale factor 6 not 5.

Ratio and proportion problems

White
Rose
Maths

- 1 Whitney buys 6 cans of lemonade for £3

- a) How much do 12 cans cost?
- b) How much do 3 cans cost?
- c) How much do 15 cans cost?



- 2 The ratio of red to green grapes in a bowl is 3:1

- a) Explain what this means.

For every 3 red grapes there is 1 green grape.

- b) There are 12 more red grapes than green grapes.
What is the total number of grapes in the bowl?

- 4 Dexter has some 20p and 50p coins in a jar.
For every three 20p coins he has one 50p coin.
There are 12 coins in the jar in total.
How much money is in the jar?

- 5 A drink is made using 3 parts orange juice to 2 parts lemonade.
Esther makes 1.2 litres of this drink.
How much orange juice does she need?

ml

- 6 Two shops sell the same cereal but in different-sized boxes.

Shop A 500 g of cornflakes £2.10	Shop B 750 g of cornflakes £3.30
---	---

Which shop is better value for money? Shop A

Explain why.

- 3 Amir is making some chocolate chip biscuits.

He has this list of ingredients to make 6 biscuits.

Chocolate chip biscuits (makes 6)

120 g butter
72 g sugar
180 g plain flour
60 g chocolate chips

- a) How much of each ingredient does Amir need to make 2 biscuits?

butter g plain flour g

sugar g chocolate chips g

- b) How much of each ingredient does Amir need to make 10 biscuits?

butter g plain flour g

sugar g chocolate chips g

- c) Amir has 240 g of chocolate chips.

What is the maximum number of biscuits he can make?

© White Rose Maths 2019

- 7 Dora draws two similar rectangles.

My larger rectangle is 4 times the size of the smaller one.



The perimeter of the larger rectangle is 48 cm.

The length and width of both rectangles are even numbers.


What is the largest possible area for the small rectangle?

cm²

- 8 Aisha has two boxes of sweets.

- In the first box, the ratio of red sweets to green sweets is 3:1
- In the second box, for every 2 orange sweets there are 3 yellow sweets.
- There is the same number of sweets in each box.
- There are 12 yellow sweets in the second box.

How many sweets are in the first box?

<p>This recipe makes 10 flapjacks.</p> <div> <p>Flapjacks</p> <p>120 g butter 100 g brown sugar 4 tablespoons golden syrup 250 g oats 40 g sultanas</p> </div> <p>Amir has 180 g butter.</p> <p>What is the largest number of flapjacks he can make?</p> <p>How much of the other ingredients will he need?</p>	<p>He has enough butter to make 15 flapjacks. He will need 150 g brown soft sugar, 6 tablespoons golden syrup, 375 g oats and 60 g sultanas.</p>	<p>Alex has two packets of sweets.</p>  <p>In the first packet, for every 2 strawberry sweets there are 3 orange.</p> <p>In the second packet, for one strawberry sweet, there are three orange.</p> <p>Each packet has the same number of sweets.</p> <p>The second packet contains 15 orange sweets.</p> <p>How many strawberry sweets are in the first packet?</p>	<p>Second packet: 15 orange 5 strawberry.</p> <p>So there are 20 sweets in each packet.</p> <p>First packet: 8 strawberry 12 orange</p> <p>The first packet contains 8 strawberry sweets.</p>
--	--	---	---

<p>9. Sheren has this recipe for risotto.</p> <p>Exactly how much of each ingredient will she need to make enough for 19 of her friends?</p> <div></div>	<p>Risotto (serves 4)</p> <p>2 onions</p> <p>6 rashers of bacon</p> <p>300g risotto rice</p> <p>1.2 litres vegetable stock</p> <p>100g frozen peas</p> <p>60g sweetcorn</p>
<p>11. Daanish has this recipe for lamb skewers.</p> <p>Exactly how much of each ingredient will he need to make enough for 24 of his friends?</p> <div></div>	<p>Lamb Skewers (serves 9)</p> <p>1,200g lamb</p> <p>30g fresh mint</p> <p>1.5 red chillies</p> <p>3 red onions</p> <p>6 yellow peppers</p> <p>150g natural yoghurt</p>

Mastery

9. Sheren needs 9.5 onions, 28.5 rashers of bacon, 1,425g risotto rice, 5.7 litres vegetable stock, 475g frozen peas and 285g sweetcorn.

11. Daanish needs 3,200g lamb, 80g fresh mint, 4 red chillies, 8 red onions, 16 yellow peppers and 400g natural yoghurt.

Ratio and proportion problems (2)

Maths

- 1 7 pencils cost £3.64



How much do 4 pencils cost?

£ 2.08

- 2 A machine can make 120 nails in 4 seconds.

a) How many nails does the machine make in 20 seconds?

600

b) How many nails does the machine make in one minute?

1,800

- 5 Amir has a box of counters.

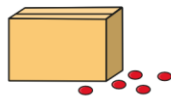
For every 5 red counters in the box there are 2 green counters.

Amir removes 21 red counters.

There are now the same number of red and green counters in the box.

How many green counters are in the box?

Show all your workings.



14

- 6 The ratio of boys to girls in a class is 1:3. There are 15 girls in the class.

a) How many boys are in the class?

5

b) How many children are in the class in total?

20

- 7 The ratio of blue to green balloons is 2:3. There are 20 balloons altogether.

a) How many blue balloons are there?

8

- 3 A farmer says, "For every 2 horses in a field I need to put out 3 bales of hay."

a) How many bales of hay are needed for 8 horses?

12

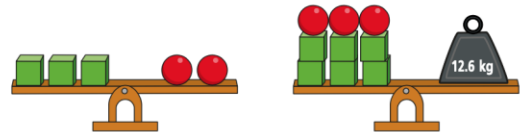
b) How many bales of hay are needed for 3 horses?

4.5

c) If there are 18 bales of hay in a field, how many horses could the farmer put there?

12

- 4 Alex balances some scales.



Work out the mass of one of the cubes.

mass of one sphere 1.8 kg

1.2 kg

b) How many green balloons are there?

12

- 8 Three points lie in a straight line.



- The distance from A to B is 3 times the distance from B to C.
- The distance from A to B is 27 cm.

What is the distance from A to C?

36 cm

- 9 The ratio of 20p coins to 5p coins in a money box is 5:2.

There are fifteen 20p coins.

How much money is in the box?

£3.30



- 1) a) Brilliant Bracelets sells the bracelets for £1.04 each, whereas Jewellery For You sells them for 95p each. Therefore, Jewellery For You sells them for the best price.
b) It would cost £2.90 to buy two bracelets.
- 2) Kuljeet: This statement is correct for the quantities of butter and sugar but the quantity of chocolate should be 30g, not 3g.
Hamish: This statement is correct for the quantity of flour but the quantity of chocolate should be 90g, not 60g.
Rhys: This statement is incorrect. Rhys will need to buy 3 eggs and put in 6tbsp of vanilla.
Samira: This statement is correct. 380g butter means she has enough to make the recipe for 15 people as this would require 375g butter.
- 3) a) This is false. Aron receives £3.20 a week. Over a period of 4 weeks, he would receive £12.80.
b) Over a period of 3 weeks, Eva would get more pocket money than Mei. This is True.
Mei: $£5.80 \div 2 = £2.90$ a week
 $£2.90 \times 3 = £8.70$ over 3 weeks
Eva: $£12.40 \div 4 = £3.10$ a week
 $£3.10 \times 3 = £9.30$ over 3 weeks

11. Habib is shopping for groceries, but these savoury items only come packaged in bulk. Calculate the cost of each individual item.

Super Saver	Bhajis 6 for £3.12	Samosas 9 for £3.42	Spring Rolls 5 for £1.30	Pakorras 8 for £3.44
Food Zone	Bhajis 3 for £1.53	Samosas 7 for £2.59	Spring Rolls 6 for £1.62	Pakorras 3 for £1.92
Mega Mart	Bhajis 4 for £1.96	Samosas 5 for £1.95	Spring Rolls 3 for £1.05	Pakorras 6 for £3.42

Where is each item least expensive?

--

11. Super Saver: bhajis = 52p each, samosas = 38p each, spring rolls = 26p each and pakorras = 43p each. Food Zone: bhajis = 51p each, samosas = 37p each, spring rolls = 27p each and pakorras = 64p each. Mega Mart: bhajis = 49p each, samosas = 39p each, spring rolls = 35p each and pakorras = 57p each.
Bhajis are least expensive at mega Mart. Samosas are least expensive at Food Zone. Spring rolls and pakorras are least expensive at Super saver.



- 1) a) 250g bananas
100g strawberries
90g raspberries
180ml milk
40ml natural yogurt
b) 750g bananas
300g strawberries
270g raspberries
540ml milk
120ml natural yoghurt
c) The ingredients list could be multiplied by 4:
2000g or 2kg bananas
800g strawberries
720g raspberries
1440ml or 1.44l milk
320ml natural yogurt
d) Freya is making a smoothie for 20 people.
- 2) 1 litre: 40 mins
 $\frac{1}{2}$ litre = 20 mins
4 litres = $4 \times 40 = 160$ mins
 $4 \frac{1}{2}$ litres = 180mins or 3 hours
- 3) Jack keeps 12 football cards for himself while Owen is given 36 cards.
- 4) The Stationery Shop sells glue sticks for 74p each whereas Cheap Stationery sells glue sticks for 73p each so Cheap Stationery sells them for the lowest price.



- 1) a) Shop 1 gives the best price per can by 6p a can.
Shop 1 (Get 3 cans for the price of 2): $\text{£}1.80 \div 3 = 60\text{p}$ per can
Shop 2 (Get 5 cans for the price of 3): $\text{£}3.30 \div 5 = 66\text{p}$ per can
b) Shop 1 (Get 3 cans for the price of 2): $\text{£}1.80 \times 10 = \text{£}18$
Shop 2 (Get 5 cans for the price of 3): $\text{£}3.30 \times 6 = \text{£}19.80$
c) Shop 3 (6 cans for the price of 4): $\text{£}3.60 \times 5 = \text{£}18$
Shop 3 is the same price as Shop 1 and they are both the cheapest.
- 2) The ratio of red to green marbles in bag 1 is 3:2 whereas the ratio in bag 2 is 1:2.
Bag 2 has 10 green marbles so there must be 5 red ones. Therefore, there are 15 marbles in bag 2 and 15 marbles in bag 1.
With 15 marbles in bag 1 there will be 9 red marbles and 6 green marbles.

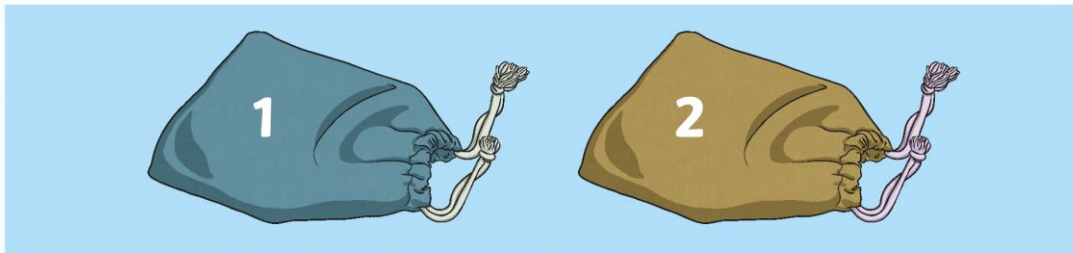
Shu, Lowri and Hamish are discussing how much pocket money they each get.

Shu	Lowri	Hamish
		
I get £6.20 every two weeks.	I get 12.80 every four weeks.	I get £9.90 every three weeks.

True or false? Explain your answers fully.

- a) Hamish would receive £13.20 pocket money over a period of 4 weeks.
This is true. Hamish receives £3.30 per week. He would get £13.20 over 4 weeks.
- b) Over a period of 3 weeks, Shu would get more pocket money than Lowri.
This is false. Shu would get £9.30 over three weeks. Lowri would get £3.20 a week. Lowri would get £9.60 over three weeks, which is more than Shu.

There are two bags of marbles.



In the first bag, for every 3 red marbles there are 5 green marbles.

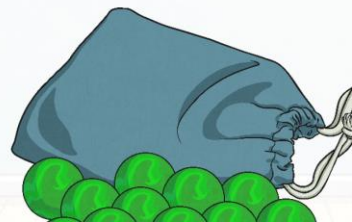
In the second bag, for every 2 red marbles there are 4 green marbles.

There are the same number of marbles in each bag.

The second bag of marbles contains 8 red marbles.

How many green marbles are in the first bag?

There are 15 green marbles.



Year 6

Ratio

Name _____



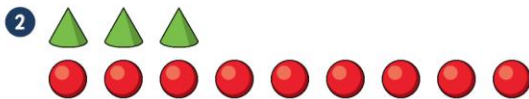
- 1 Complete the sentences.



For every 1 apple, there are pears.

1 mark


For every 2 oranges, there are lemons.

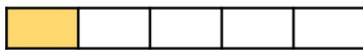
1 mark


Complete the sentence.

For every 1 cone, there are spheres.

1 mark

- 6 Part of a bar is shaded.



What fraction of the bar is shaded?

$\frac{1}{5}$

What is the ratio of shaded parts to non-shaded parts?

1:4

- 7 For every 3 boys in a class, there are 2 girls.



If there are 20 children in the class, how many girls are there? *1 mark for working out that 1 'part' is worth 4 ie $20 \div 5 = 4$*

8

- 8 The ratio of red to blue cubes in a tower is 1 : 5
There are 8 red cubes in the tower.
How many blue cubes are there in the tower?

40

- 9 Ellie has some red and green grapes.

For every 3 green grapes she has 5 red grapes.
She has 24 green grapes.

How many more red grapes than green grapes does Ellie have?

1 mark for working out she has 40 red grapes.

16

- 3 Pat has these coins.



Harry has these coins.



Pat says that for every 3 coins she has, Harry has 5 coins.
Is Pat correct? Explain your answer.

Yes because Pat has 6 coins and Harry has 10, so for every 3 coins Pat has Harry has 5

1 mark


The ratio of circles to squares is :

1 mark


Complete the sentences two ways.

The ratio of rectangles to triangles is :

The ratio of rectangles to triangles is :

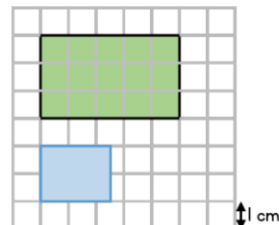
2 marks

- 5 Circle the equivalent ratios. *1 mark for 2 correct.*

☒ 2 : 8 4 : 1 ☒ 3 : 12 ☒ 1 : 4 3 : 16

2 marks

- 10 A field is drawn to scale 1 cm on the grid represents 4 metres in real life.



What is the length of the field? m

20 m

Another field is 10 m long and 8 m wide.
Draw this field on the grid above.

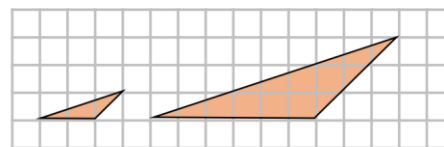
1 mark for the length and 1 for the width.

1 mark

2 marks

- 11 Here are two triangles.

Triangle A is an enlargement of Triangle B.



What is the scale factor of enlargement?

1 mark

Circle how confident you feel with ratio.

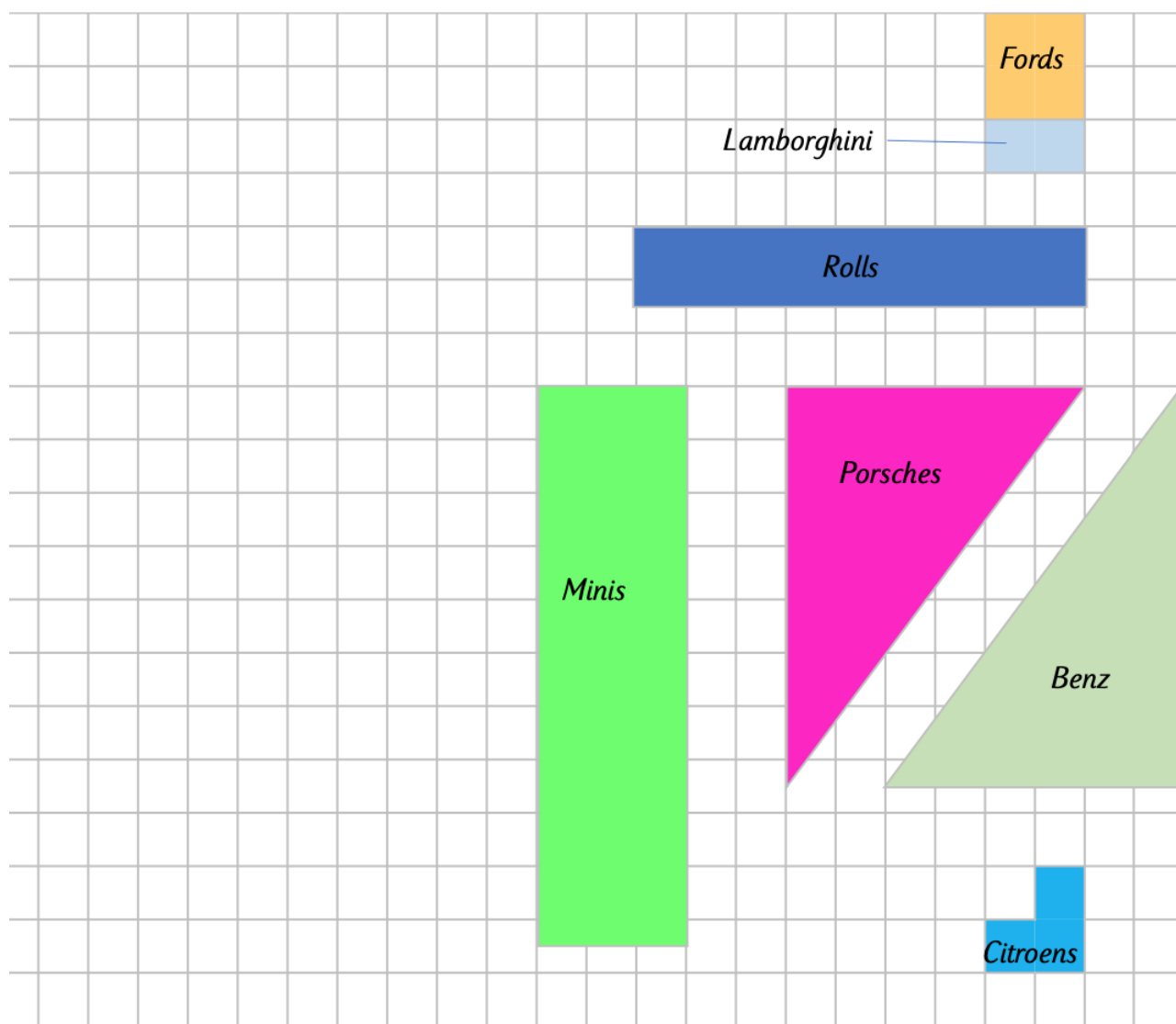
1 2 3 4 5
Not confident Very confident

2 marks

1. 200 visitors tickets can be sold, 75 cars can be invited.
2. 200 visitors + 150 car owners = 350 people, therefore at 2 officers per 50 people we can expect 14 police officers.
3. $\text{£}2500 \div 200 = \text{£}12.50$
4. If a child ticket is £5, an adult ticket will need to be £16.50.
Of 200 visitors one third will be children, one third of 200 is 66 and a third rounded up to 67. $67 \times \text{£}5 = \text{£}335$, leaving £2165 to come from the remaining 133 adults attending, that is £16.28 (to 2dp) each, rounded to nearest 50p = £16.50 per adult.
5. They will need 19 barrels transported.
 $50 \times 15 = 750\text{l}$ of soapy water needed. Each barrel holds 40l so they will need $750 \div 40 = 18.75$ so need to round up to 19.

They will need 3.7 l of soap.
750 l needed as calculated above, in a ratio of 1:19 is 20 parts. $750\text{l} \div 20 = 37.5\text{l}$, as soap is one part to nineteen parts water, then the soap needed is 37.5l.
6. Ratio of 4:3
7. We need to scale the number of attendees by 4. So that means 800 visitor flyers and 600 car owner flyers.
8. 4:1 agreed to take part in the photos.
9. $10.80 \div 120 = 0.09$, so 9p per sheet. $9.45 \div 90 = 0.105$, so rounds to 11p per sheet. $20 \div 250 = 0.08$, so 8p per sheet and the best value.
10. 90 parents agreed to help.
 $\frac{3}{8}$ of 400 = 150 replies. 3:2 is 5 parts altogether so each part is $150 \div 5 = 30$. 3 parts said yes so $3 \times 30 = 90$ parents.
11. In a ratio of 4:2:1, red:green:black.
48 red cars = 4 parts, so one part is $48 \div 4 = 12$, green cars are 2 parts: $12 \times 2 = 24$, and black cars are 1 part, so 12 cars.
12. 4:2:1:3
13. There are now 120 cars. 45 more than planned so an extra 150m² is needed.

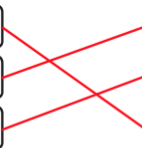
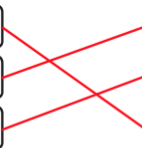
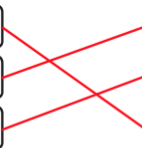
14. Children may position the shapes anywhere on the grid so long as the proportions are as below.



SPaG Answers

Question Number	Question and Answer	Marks												
1	Circle the adverb that shows how Dave danced.													
G1	Dave put on his best shirt before dancing <u>energetically</u> .	1												
Notes: Award one mark for the correct word circled. Grammar Focus: G1 - To express time, place and cause using adverbs.														
2	Circle the right words in each of the boxes to make sure that the sentences are written in Standard English.													
G7	Dave has lived in London <u>since</u> he was a boy. He could <u>have</u> moved but decided to stay.	1												
Notes: Award one mark for both words circled correctly. Grammar Focus: G7 - To recognise Standard English forms.														
3	Tick the correct box to say which clause is underlined in the following sentences:													
G3	<table border="1"> <thead> <tr> <th>Sentence</th><th>Main Clause</th><th>Subordinate Clause</th></tr> </thead> <tbody> <tr> <td><u>If he listened really hard</u>, Dave could hear music coming from next door.</td><td></td><td style="text-align: center;">✓</td></tr> <tr> <td>Dave always goes to dance practice <u>even when he's not feeling one hundred percent</u>.</td><td></td><td style="text-align: center;">✓</td></tr> <tr> <td>Although it wasn't far to go, <u>Dave always drove to work</u>.</td><td style="text-align: center;">✓</td><td></td></tr> </tbody> </table>	Sentence	Main Clause	Subordinate Clause	<u>If he listened really hard</u> , Dave could hear music coming from next door.		✓	Dave always goes to dance practice <u>even when he's not feeling one hundred percent</u> .		✓	Although it wasn't far to go, <u>Dave always drove to work</u> .	✓		1
Sentence	Main Clause	Subordinate Clause												
<u>If he listened really hard</u> , Dave could hear music coming from next door.		✓												
Dave always goes to dance practice <u>even when he's not feeling one hundred percent</u> .		✓												
Although it wasn't far to go, <u>Dave always drove to work</u> .	✓													
Notes: Award one mark for all three answers ticked correctly. Grammar Focus: G3 - To recognise main and subordinate clauses.														
4	Choose the correct conjunction for each of the gaps in these sentences, only use each word once.													
G3	a. Although I am short, I can reach the top of my wardrobe. b. Because of the rain, we are staying in today. c. Until I hear the door bell, I am not getting up from my seat.	1												
Notes: Award one mark for all three conjunctions used correctly. Grammar Focus: G3 - To use a wider range of subordinating conjunctions.														

5	Which sentence is a command? Tick one.	
G2	Pick up that piece of paper. ✓	1
Notes: Award one mark for one correct tick. Grammar Focus: G2 - To know that the grammatical pattern in a sentence indicates its function is a command.		
6	Write a synonym in the box to replace the underlined word so that the sentence has the same meaning.	
G6	Any synonym for flabbergasted, e.g. surprised, shocked, astounded.	1
Notes: Award one mark for one correct word. Grammar Focus: G6 - To know how words are related by meaning as synonyms and antonyms.		
7	Which of these sentences needs a question mark? Tick one.	
G2	Please could I have a return ticket to York ✓	1
Notes: Award one mark for one correct tick. Grammar Focus: G2 - To know that the grammatical pattern in a sentence indicates its function is a question.		
8	Which of these sentences has used a question mark correctly? Tick one.	
G5	"Would you like to come to the cinema with me?" asked Dave. ✓	1
Notes: Award one mark for one correct tick. Grammar Focus: G5 - To use other punctuation within the inverted commas of direct speech.		
9	Underline the expanded noun phrase in the following sentence:	
G3	Before lunchtime, Jasmine snacked on <u>a delicious, nutritious fruit salad.</u>	1
Notes: Award one mark for all of the words underlined. Grammar Focus: G3 - To recognise expanded noun phrases for description and specification.		

10	Tick for each sentence whether it is in present progressive tense or past progressive tense.																	
G4	<table><tr><th>Sentence</th><th>Present Progressive</th><th>Past Progressive</th></tr><tr><td>Dave was playing a great tune on his guitar.</td><td></td><td>✓</td></tr><tr><td>Dave is singing while he cooks his meal.</td><td>✓</td><td></td></tr><tr><td>Dave was lighting a firework at the Bonfire Night display.</td><td></td><td>✓</td></tr><tr><td>Dave is sneaking into the kitchen to get some chocolate.</td><td>✓</td><td></td></tr></table>	Sentence	Present Progressive	Past Progressive	Dave was playing a great tune on his guitar.		✓	Dave is singing while he cooks his meal.	✓		Dave was lighting a firework at the Bonfire Night display.		✓	Dave is sneaking into the kitchen to get some chocolate.	✓		1	
	Sentence	Present Progressive	Past Progressive															
	Dave was playing a great tune on his guitar.		✓															
	Dave is singing while he cooks his meal.	✓																
	Dave was lighting a firework at the Bonfire Night display.		✓															
Dave is sneaking into the kitchen to get some chocolate.	✓																	
Notes: Award one mark for all of the correct ticks.																		
Grammar Focus: G4 - To recognise present and past progressive tenses to mark actions in progress.																		
11	Add the three missing commas into this sentence.																	
G5	After washing his hair, Dave got into his car, which he had also cleaned that day, and drove off on his night out.		1															
Notes: Award one mark for all of the commas in the correct places.																		
Grammar Focus: G5 - To use commas to demarcate fronted adverbials and relative clauses.																		
12	Label whether each of these words is an adjective or noun.																	
G1	Dave was climbing a particularly steep hill when his shoe fell off and landed in a muddy puddle.		1															
	<div>↑ adjective</div>	<div>↑ adjective</div> <div>↑ noun</div>																
Notes: Award one mark for all of the words correctly labelled.																		
Grammar Focus: G1 - To recognise adjectives and nouns.																		
13	Match each root word with the correct suffix to create a verb:																	
G6	<table><tr><td>note</td><td rowspan="3"></td><td>ate</td></tr><tr><td>pulse</td><td>ise</td></tr><tr><td>critic</td><td>ify</td></tr></table>	note		ate	pulse	ise	critic	ify	1									
	note			ate														
	pulse			ise														
critic	ify																	
Notes: Award one mark for all of the correct answers.																		
Grammar Focus: G6 - To form verbs using suffixes -ate, -ise and -ify.																		

14	Circle the words in this sentence that need capital letters.	
G5	when dave sings an elvis song, he dreams about living in america.	1
Notes: Award one mark for all of words correctly circled. Grammar Focus: G5 – To use capital letters for people, places, the days of the week and to demarcate the start of a sentence.		
15	Which of these sentences is grammatically correct? Tick one.	
G4	Dave was much better at dancing than his brother. ✓	1
Notes: Award one mark for one correct answer ticked. Grammar Focus: G4 – To use consistent tense.		
16	Underline both of the modal verbs in these sentences:	
G4	Everyone <u>could</u> see Dave as he appeared over the horizon. If he kept sprinting, he <u>might</u> win the race.	1
Notes: Award one mark for both correct words underlined. Grammar Focus: G4 – To recognise modal verbs that indicate degrees of possibility.		
17	Tick the box where a semi-colon should go to separate the independent clauses:	
G5	Every year, Dave goes on holiday to Whitby it often rains while he's there. <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">↑ <input type="checkbox"/></div> <div style="text-align: center;">↑ <input checked="" type="checkbox"/></div> <div style="text-align: center;">↑ <input type="checkbox"/></div> </div>	1
Notes: Award one mark for the correct box ticked. Grammar Focus: G5 – To use semi-colons to mark the boundary between independent clauses.		
18	Place commas around the relative clause in this sentence:	
G3	Dave's dishwasher, which he had owned for almost ten years, had started to leak water.	1
Notes: Award one mark for both commas in the correct position. Grammar Focus: G3 – To recognise and demarcate relative clauses beginning with which, who, when, where, whom, whose or that.		

19	Which of these plural possessive apostrophe sentences is correct? Tick one.	
G5	All of his friends' tents were pitched in a line on the camping field. ✓	1
Notes: Award one mark for the correct sentence ticked. Grammar Focus: G5 – To use apostrophes to mark plural possession.		
20	Underline the conjunction in these sentences:	
G1	Dave loves his fish and chips. <u>Although</u> he knows that fatty food is unhealthy, he still eats them twice a week.	1
Notes: Award one mark for the correct word circled. Grammar Focus: G1 – To recognise conjunctions used for time, place and cause.		
21	Which of these sentences shows the correct agreement between subject and verb? Tick one.	
G4	At Dave's birthday party, everyone plays party games. ✓	1
Notes: Award one mark for the correct sentence ticked. Grammar Focus: G4 – To maintain consistent verb form and tense.		
22	Add the missing commas to the following sentence.	
G5	Dave got a joke book, a remote control helicopter, a new jumper and some gift vouchers for his birthday.	1
Notes: Award one mark for both commas inserted correctly. Grammar Focus: G5 – To use commas in a list.		
23	Put a pair of brackets around the parenthesis in the sentence below:	
G5	Dave's journey to Whitby took a long time (almost four hours) because of a terrible traffic jam on the motorway.	1
Notes: Award one mark for both brackets inserted correctly. Grammar Focus: G5 – To use brackets, dashes or commas to indicate parenthesis.		