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Home Learning Pack Year 6

Week 10
29/06/2020

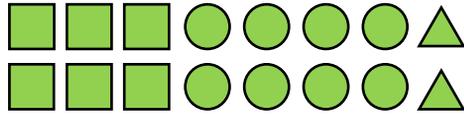
Classroom
secrets★



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Monday – Introducing the Ratio Symbol

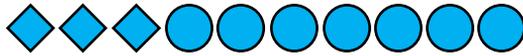
1. Look at the set of objects below and complete the statements, using the ratio in its simplest form.



- A. For every _____ squares, there are _____ circles and _____ triangles.
- B. The ratio of squares to circles is _____.
- C. The ratio of circles to triangles is _____.
- D. The ratio of squares to circles to triangles is _____.

2. Draw a line to match each image with the fraction of squares it contains, and the ratio of the two shapes represented.

A. $\frac{3}{9}$



1:2

B. $\frac{3}{10}$



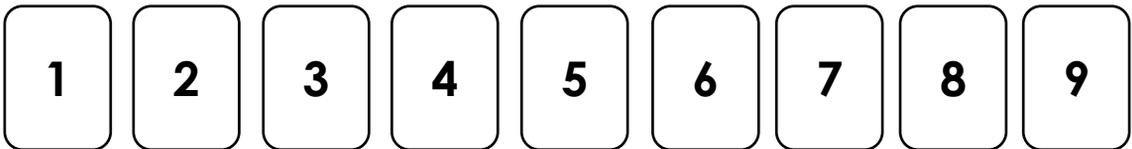
4:5

C. $\frac{4}{9}$

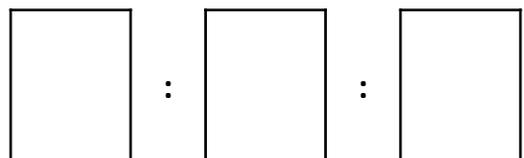
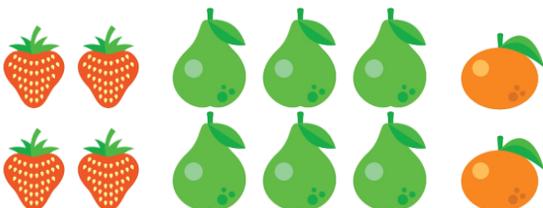


3:7

3. Use the digit cards to write a ratio to match the given picture. Write the statement to go with it.



The ratio of _____ to _____ to _____ is



Monday – Paragraphs in Non-Fiction

Wild and Windy Weather

Location, Location, Location

The only difference between hurricanes, cyclones and typhoons, is where they occur. Massive storms are called hurricanes in the Atlantic and Northeast Pacific, typhoons in the Northwest Pacific, and cyclones in the South Pacific and Indian Ocean.

Tornado Versus Hurricane

Tornadoes and hurricanes appear to be very similar. Both materialise as a violent, rotating column of air that can leave chaos and devastation in its wake (see the table to compare statistics).

	Tornado	Hurricane
Formed	over land	over oceans
Size	< 1 mile wide	> 100 miles wide
Life span	< 1 hour	> 1 week
Wind speeds	300 mph max	200 mph max

Tornado Alley

Tornado Alley is in the southern plains of the United States. This includes Texas, Oklahoma, Kansas, Colorado, Nebraska and South Dakota. In these areas, during the spring, a cold air mass collides with a warm air mass, which is responsible for creating up to 500 tornadoes per year.

Safety Tips

Areas prone to adverse weather conditions often have a storm warning system in place. Upon hearing the siren, follow the advice below:

- Stay away from low-lying, flood prone areas.
- Stay indoors and board up windows.
- Ensure you have adequate tinned food, bottled water and medical supplies.
- Keep a battery-operated torch and radio to hand.

1. Mark the sub-heading that could be used as an alternative for paragraph two with an 'x'.

The Difference Between Tornadoes and Whirlpools

What is the Difference Between a Tornado and a Hurricane?

2. Mark an 'x' in the box to indicate the correct function of the bullet points.

Summarises what the paragraph is about

Breaks paragraph into easy to read sections

States what the text is about

3. True or false? The following sentence could be added to the paragraph under the sub-heading 'Safety Tips'.

If you reside in a mobile home, get out fast and seek shelter elsewhere.

Monday – Paragraphs in Non-Fiction

What Makes the UK Great?

The United Kingdom of Great Britain and Northern Ireland (the UK) is comprised of the following countries: England, Scotland, Northern Ireland and Wales. Each country is proudly patriotic of its own history, politics, capital city, language, landscape and football teams, yet each has the capacity to pull together and stand shoulder to shoulder, as one formidable team, in times of need.

Diversity

The UK is home to a rich diversity of people, who originate from many different countries. For example, over 250 different languages are spoken by families in London alone and many of these families have been residents of the UK for several generations.

The Royal Family

The royal family continue a tradition that dates back over a thousand years. They support hundreds of charities each year and are deemed to strengthen national unity and stability. Thousands of tourists flock to the UK each year, enticed by their fascination with royalty.

Food and Drink

Although the country is awash with food originating from other countries, it's fair to say that the UK is famous for its love of fish and chips; a full English breakfast; bangers and mash; and a Sunday roast – all washed down with a nice cup of tea or a pint of beer.

4. Add one more sub-heading to extend the text above. Write the opening sentence of your new paragraph.

5. Rewrite paragraph three to include bullet points. Add or remove words if necessary and use a colon to introduce the bullet pointed list.

6. The author has written the sentence below.

British tastes in food have changed over the years, particularly since the last war.

Under which sub-heading should it be placed? Explain your answer.

Tuesday – Calculating Ratio

1. Use the image below to complete the ratio statements.

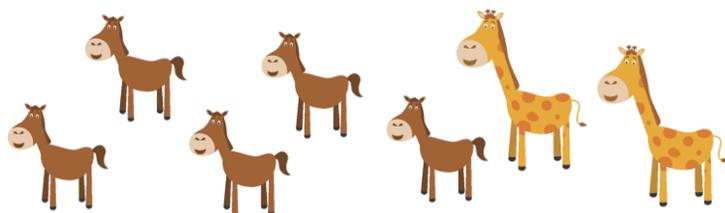


For every ___ apples, there are ___ bananas.

:

If there are 12 apples, how many bananas will there be?

2. What is the ratio of horses to giraffes?



:

Use the ratio to calculate how many animals there will be altogether if there are 20 horses.

<input type="text" value="20"/>	horses
<input type="text"/>	giraffes
<input type="text"/>	animals altogether

3. For every 4 boys in the class, there are 3 girls. There are 16 boys altogether.

Half of the boys are out of the classroom one afternoon.

What is the new ratio of boys to girls?

What is the new total number of pupils?

Tuesday – Avoiding Repetition

Tarit studied the inside of his arm carefully. With his index finger, he followed the jagged path of the silvery scar, which ran from his armpit to his elbow. Even the doctors had to admit it was a pretty impressive scar. Although the wound had healed long ago, Tarit could still remember the events which led up to the accident as if it were yesterday.

It had been exactly a year ago today that the accident had happened. Everyone had rushed out of school as soon as the bell had signalled the end of the day. It was a Friday, and most were in a hurry to get home. Tarit remembered strolling out of school with his best friend Avneet – they'd been discussing their plans for the weekend. They were so deep in conversation, they hadn't spotted Josef Frump (a nasty boy who enjoyed making people's lives a misery) approach them from behind. In the blink of an eye, Josef had snatched Tarit's bag from his back and sprinted away across the playing field.

It had been important that Tarit got his bag back; it contained his house key and mobile phone. A good friend of his, Tommy Thompson, had witnessed what had happened. He'd offered Tarit his bike to use, so he could catch up with Josef, who had made it as far as the gate which led out onto the road. After thanking Tommy, Tarit had jumped onto the bike so he could take off after the thief.

That's when things went horribly wrong. Tarit had become so focused on catching Josef, he had forgotten to look as he had sped out of the gate and onto the road. He hadn't seen the car that appeared from nowhere; he hadn't seen the look on the horrified driver's face as she failed to stop in time. He hadn't realised any of this, until he woke in hospital several days later.

1. List all of the personal, indefinite and relative pronouns that appear in paragraph two. If a pronoun appears several times, write it only once.

2. In paragraph three, does the relative pronoun 'which' refer to Tommy, Tarit, the bike or the gate?

3. An extra sentence has been written to add to paragraph four. Insert an appropriate relative pronoun from the options below to complete the sentence.

The bike, _____ belonged to Tommy, had been crushed under the wheels.

who

which

whom

whose

Tuesday – Avoiding Repetition

Lara was hungry; she was always hungry. She never quite knew where her next meal was coming from. Sometimes, she ate perfectly good left over food that had been wastefully discarded. Often, passers-by would take pity on her, as she begged in front of shop windows in the busy city centre. Occasionally, she would visit the lovely people at the night shelter, who would ensure she ate a hot meal.

As usual, hunger had woken her up. She had slept beneath the old railway bridge, down by the canal. She yawned, stretched tall and tried to shake off the tiredness that still hung over her like a heavy weight. She'd slept worse than normal last night. Why was that?

Slowly, she began to recall being woken by a commotion further along the canal. She remembered hearing some voices shouting angrily at each other. Then footsteps, which had marched (unseeing) right past her. At the same time, something had been thrown into the water. Maybe it was valuable? Lara decided to find out.

Standing by the edge of the canal, she peered into the brown, murky water; it was impossible to see the bottom. Suddenly, her eye was drawn to a handle, which was sticking out of the water. Leaning forward as much as she dared, Lara was able to grab the handle and drag it towards her. It was a rather heavy blue bag. Apprehensively, Lara opened the zip. There, wrapped in a clear plastic bag, was more money than Lara had ever seen in her entire life.

4. An extra sentence has been written to add to paragraph three. Change the proper nouns to pronouns to avoid repetition.

Lara had thought about telling them to shut up, but Lara decided that Lara should remain unnoticed under Lara's cardboard boxes.

5. Rewrite the first sentence of paragraph two to include a relative clause.

6. Petra has written the first sentence of the next paragraph.

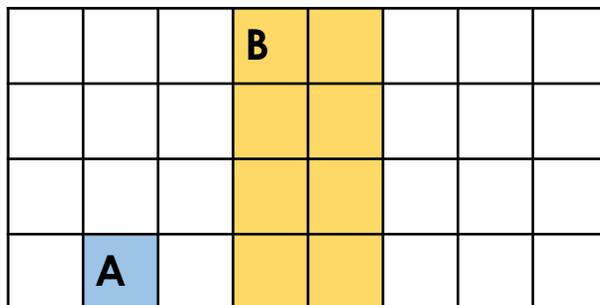
What was her going to do with all of this money, who had probably been hidden there by some very dangerous people.

Has she used relative and personal pronouns accurately? Explain your answer.

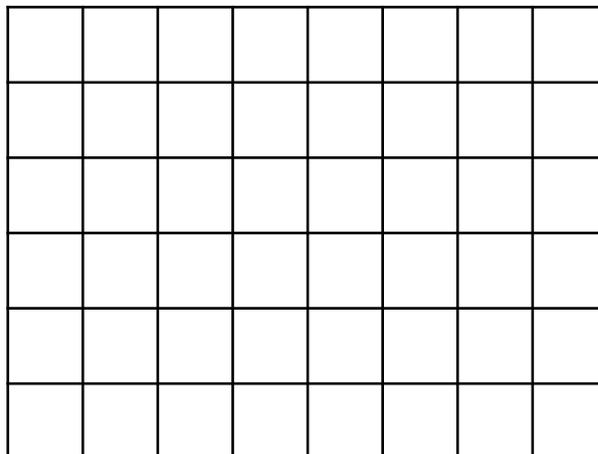
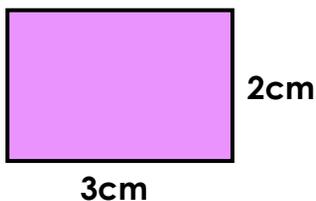
Wednesday – Using Scale Factors

1. True or false?

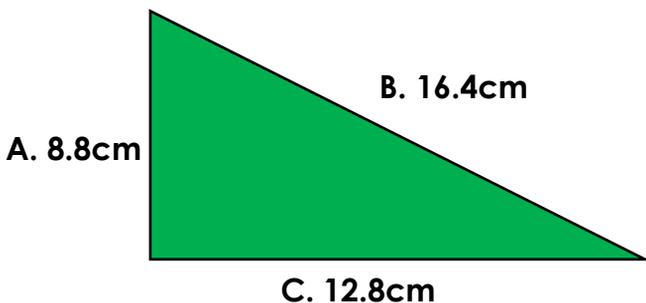
Shape A has been increased by a scale factor of 3 to create shape B.



2. Enlarge the shape below by a scale factor of 2. Use the 1cm² grid provided.



3. This triangle was enlarged by a scale factor of four.



What were the measurements of the original triangle?

Wednesday – Organising Paragraphs within Texts

If Lydia thought being thrown into the back of a police van and driven off to Holloway Jail was the height of her struggles, she was gravely mistaken.

Sentenced to a month for vandalism, she had anticipated being labelled as a political prisoner and expected to continue the writing that had helped her drum up support for her cause. Instead, it was in jail where her struggles really began. It wasn't so much the cramped conditions that drained her spirit, though these did bring their own struggles, it was the lack of opportunity to continue her work that pained Lydia terribly.

Due to her imprisonment in general population, Lydia was never allowed to do anything that political prisoners would have been able to do. Most importantly, she could not continue the struggle on behalf of her fellow suffragettes still out in the world.

On the other hand, perhaps there was something that Lydia could do. She could emphasise the importance of her struggle, and of the struggle of all her fellow suffragettes. The only way she could think of achieving this was through hunger strike. Lydia refused any meal. She suffered, she struggled, and she lived through pain. News of this struggle was sure to reach the outside world and Lydia felt that certain she could still make a meaningful contribution to her cause!

Meanwhile, the guards, on seeing this scheme begin to come to fruition, began preparing their plans...

1. List the adverbials used to open the fourth and final paragraphs.

2. Which word is repeated through the fourth paragraph to emphasise it as a key word in the narrative?

3. True or false? If the third and fourth paragraphs were swapped, the story would still make sense.

Wednesday – Organising Paragraphs within Texts

The letter that began this mysterious tale arrived by the first morning post. It was addressed simply to 'The Great Detective'. An address which was taken to mean only one possible intended audience, that of Inspector Medford, a famous inspector known also for her work in taking on investigations through her private detective agency.

Presently, Inspector Medford was seated in her home on Cook Street, looking over notes on a recent mystery in the city. She was on the verge of a breakthrough when her housekeeper burst into the room unexpectedly.

"I'm... so sorry, Ma'am, sorry to interrupt your work, but, this... an urgent message has been sent for you," stammered Mr. Hudson. "It came in from a mysterious looking youth, but I think it may be from Scotland Yard, Ma'am. It says they need you right away!"

Without hesitation, Medford rose to her feet, looked at Mr. Hudson and calmly informed him that she was aware of the message arriving. "I expect it will be about the mystery surrounding the damaging of the crown at the Palace, I already have a theory on this one," she stated.

Understandably, Mr. Hudson was stunned. "How could you possibly already know all of that?" he blurted.

4. Rewrite the sentences below, changing the adverbials without changing the meaning.

Presently, Inspector Medford was seated in her home on Cook Street, looking over notes on a recent mystery in the city.
Understandably, Mr. Hudson was stunned.

5. Write the next two sentences in the story, starting with the sentence opener below.

Slowly,

6. Why might the writer have chosen to repeat the word mystery throughout the text?

Thursday – Ratio and Proportion Problems

1. Shape A has been enlarged by different scale factors to make shapes B, C and D.

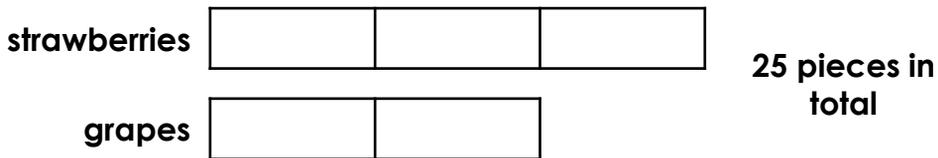
Shape	Length	Width
A	3cm	4cm
B		12cm
C	15cm	
D	30cm	

Calculate the missing measurements.

2. The ratio of strawberries to grapes is 3:2.

Pippa has 25 pieces of fruit in total.

Calculate the number of strawberries and grapes.



3. A smoothie recipe serves 2 people.
It says to use 3 cherries, 5 grapes and 2 bananas.

Jaxon says,



To serve 8 people, I will need 44 pieces of fruit in total.

Harry says,



To serve 8 people, I will need to use 20 grapes.

Who is correct? Explain your answer.

Thursday – Instructions

Your task is to write a set of instructions about how to keep safe during the coronavirus pandemic.

Think about:

- hand washing
- keeping your distance
- avoiding crowded areas
- not touching your face
- keeping surfaces clean
- being alert for symptoms

Try to include the following in your writing:

• introduction - why are you writing?

• imperative (bossy) verbs

• technical vocabulary

• numbers or bullet points

• 'How to...' title

• modal verbs (should, must etc)

Additional Resources – Reading Comprehension

Elite Equipment

Read the text on the following pages then answer the questions below.

1. What does the word 'cousins' mean in the context of the first paragraph?

2. Why do you think the author chose to compare the weight of Tour bicycles to a housecat? Is it an effective comparison?

3. Define the word 'aerodynamic'.

4. Choose three words which summarise what top-level riders look for in a bicycle frame.

5. What does the writer mean when they say that 'carbon fibre is king here as well'?

6. List three special design features you might find in a Tour de France bicycle wheel.

7. What is 'jargon'?

8. What is a derailleur?

9. To whom or what do the words 'whole Tour' refer to at the end of the first paragraph about the groupset?

10. Of the three parts of a bicycle discussed in the text, which two have the most similarities when it comes to the special features developed for Tour de France bikes? Explain your answer.

11. Summarise why a Tour de France bike is more expensive than a 'normal' bicycle.

Additional Resources – Guided Reading

Elite Equipment

Just as the racing cars in motorsport are the most finely tuned versions of the vehicles we drive every day, so too are the bicycles ridden in the Tour de France cutting-edge cousins of the bikes you might have at home. While on the surface they might look similar, with their pedals, chains, brakes and wheels, the top-level bikes used in the Tour are precisely designed and engineered to produce the best possible performances when it is time to race.

Perhaps the simplest difference to understand is the price. A Tour bicycle can cost anywhere between eight and twelve thousand pounds. The high-tech materials and production methods, as well as the costs of research and development, drive up the price of each part of the bicycle. Put all of these things together, and you have to spend *a lot* of extra money!

Then, there's the weight. The UCI (Union Cycliste Internationale) which runs the Tour de France has set a limit on just how light a competition bicycle can be. Modern technology has made bikes lighter and lighter, but a Tour bike cannot be lighter than 6.8kg. However, that is still *extremely* light! Have you ever picked up a pet cat? If you consider that a normal, healthy housecat weighs four to five kilograms, just under seven kilograms for a *whole bicycle* is very impressive!

So, in what ways are the parts of a Tour de France bicycle special? What are they made from? What makes them so expensive? Read on to find out about some specific features of the world's best bikes!

The Frame

The frame is perhaps the most crucial part of a bike. It gives the bike its shape, its rigidity and its strength. Every other part of the bike is attached in some way to the frame and as the largest part of any racing bike, huge amounts of research have been done to make frames as light and strong as possible.

Modern racing bike frames are made from carbon fibre. Carbon fibre is a very expensive material made by weaving strands (or fibres) of carbon together and bonding them with special resin. It is very strong and stiff but is incredibly light. This makes it perfect for bicycle designers, who are looking for exactly those qualities in a material for racing bike frames.

Racing bike frames are also slightly different in their shape to the frames of everyday bikes you might have seen. Designers use wind tunnels and sophisticated computer programmes to work out how to make their frames as aerodynamic as possible. The more aerodynamic a bicycle is, the easier it 'cuts' through the air, enabling riders to go faster with less effort. As you can imagine, spending hours inside special laboratories and wind tunnels is not cheap!

The Wheels

Just like frame designers, wheel designers seek to create wheels which are strong, light and highly aerodynamic. As a result, carbon fibre is king here as well. Wheel rims are often much 'deeper' (they stretch closer to the centre of the wheel) than those found on 'normal' bikes, and are carefully shaped to ensure they generate as little air resistance as possible. Sometimes, wheels are asymmetrical (not symmetrical), or different shaped rims are used at the front and back of a bike. Different teams experiment with multiple wheel options to try and find the fastest set-up.

The Groupset

The word 'groupset' is simply bicycle riders' jargon for 'any part of the bike to do with pedalling, gears and brakes'. As with all the other parts we have looked at already, these elements of racing bikes are more finely tuned versions of the gears, brakes and pedals found on bicycles all over the world. For example, most 'normal' bikes use mechanical parts to change gears. A 'normal' rider pushes a lever or twists a handle, pulling a cable and moving the derailleur (the little 'arm' holding the chain away from the gear cogs) and chain into a new position. On top-level racing bikes, this process is done electronically. Buttons on the handlebars send signals through wires (or sometimes wirelessly) to the gear systems to change up or down a cog. Many professional riders sing the praises of electronic systems, claiming that they make gear shifts smoother, easier in all circumstances and more predictable on different road surfaces. A few riders still use mechanical systems, perhaps because they fear the failure of new technology. However, electronic systems are now always weatherproof, so soon it may be that the whole Tour is using them.

Of course, there are many other features of elite-level cycling equipment which have not been covered in these brief paragraphs. The internet is full of product descriptions, explanatory diagrams and reviews of the incredible machines of the Tour de France. Perhaps one day you might be a rider or a mechanic on the Tour? We will have to wait and see what amazing new technology the riders of tomorrow will use!