



# Year 8 Knowledge Organiser

You will receive a Knowledge Organiser booklet on a termly basis, which includes revision for: English, Maths, Science, MFL, History and Geography

## **Knowledge Organiser instructions:**

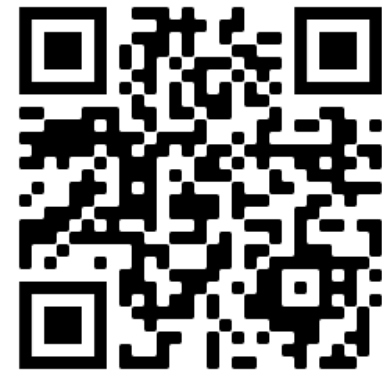
You will be set three pieces of homework per week and you should use the information from each topic to make a poster or a mind map. You will need to bring your work in to school and will be quizzed on each topic in class.

At the back of the knowledge organiser there are some suggested extra tasks that could be completed on top of the homework you will be set.

## **Email address for any queries:**

English: Miss Pett	<a href="mailto:pettr035@sflt.org.uk">pettr035@sflt.org.uk</a>
Maths: Mr Huston	<a href="mailto:hustj008@sflt.org.uk">hustj008@sflt.org.uk</a>
Science: Mrs Gilbey	<a href="mailto:gilbl117@sflt.org.uk">gilbl117@sflt.org.uk</a>
History: Miss Gurung	<a href="mailto:gurua221@sflt.org.uk">gurua221@sflt.org.uk</a>
Geography: Mr Butters	<a href="mailto:buttf095@sflt.org.uk">buttf095@sflt.org.uk</a>
MFL: Miss Lara	<a href="mailto:larae006@sflt.org.uk">larae006@sflt.org.uk</a>

**For further support, scan the QR Code  
and it will take you to the school website:**



**Preparing you for the Future**

## Homework schedule for the term:

Week	Subject and section	Revision technique
1 (B)	English, MFL and Maths Topic 1	Create a mind map for the information in Topic 1
2 (A)	Science, History and Geography Topic 1	Create a mind map for the information in Topic 1
3 (B)	English, MFL Maths Topic 2	Create a poster using the information in Topic 2
4 (A)	Science, History and Geography Topic 2	Create a poster using the information in Topic 2
5 (B)	English, MFL Maths Topic 3	Create a mind map for the information in Topic 3
6 (A)	Science History and Geography	Create a mind map for the information in Topic 3

## Optional Extra Tasks

If you would like to spend more time working independently to develop excellence in your subjects. Here is a suggested timetable for you to follow. If you have forgotten your usernames and passwords for these apps, speak to your form tutor and they will be able to support you.

<b>Monday</b>	Spend 30 minutes on Spell Zone	<b>Thursday</b>	Complete 30 minutes DEAR Time using your library book
<b>Tuesday</b>	Complete 30 minutes on Sparx	<b>Friday</b>	Spend 30 minutes learning the key words from your subjects this week.
<b>Wednesday</b>	Spend 30 minutes completing revision using BBC Bitesize		





Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.

Topic 1: Evolution and Inheritance

- There are two types of reproduction: sexual and asexual. Sexual reproduction involves the fusion of male and female gametes (egg and sperm cell in animals)
- Genetic information is found within the nucleus of all animal cells and determines our inherited characteristics. Within the nucleus of human cells, there are 23 pairs of chromosomes. These chromosomes are made up of deoxyribonucleic acid (DNA).

- DNA is a polymer that is made up of many repeating nucleotide subunits and it's arranged into a double helix structure. A small section of DNA is called a gene and each gene codes for a particular sequence of amino acids that make a specific protein

- Proteins make up the different cells that form tissues, tissues make up our organs and organ work together as part of an organ system. Different organ systems make up the entire human body.

- Genes exist in different forms called alleles and each allele codes for a different protein. The different alleles that an offspring inherits from their parents, determines their characteristics e.g. eye colour, hair colour, nose shape etc.

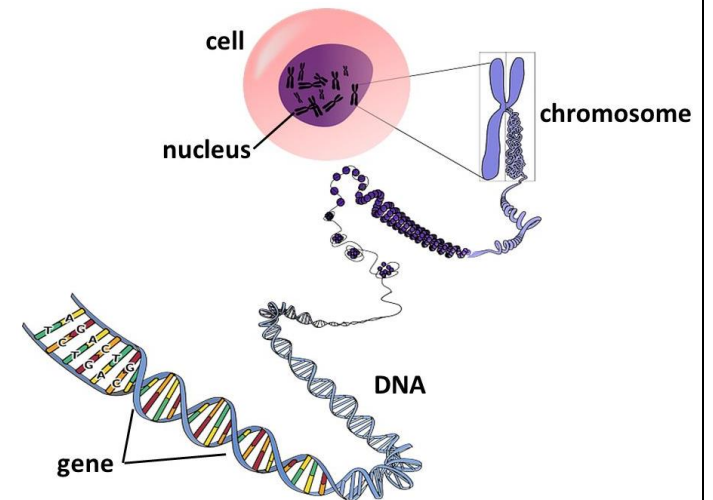
- Evolution is the process of how the inherited characteristics within a population. Changes over time through natural selection, which may result in the formation of a new species.

- **Natural selection** is the natural process whereby the organisms which are best adapted to their habitat, survive longer, produce more offspring and pass on their genetic information to the next generation. Natural selection occurs, due to variation within species.

The dark moths would be more likely to avoid being eaten by predators and thus survive to have offspring, passing on the genetic information for a dark colour to the next generation



- Variation is the differences between individuals and can be genetic or environmental. Examples of variation include: hair colour, height, eye colour and sex/gender. Variation between individuals of the same species means that some organisms are better able to compete for food, mates, shelter and other resources needed to survive and reproduce. Variation can exist between members of the same species as well as between members of different species. The greater the variety of species within an ecosystem, the greater the biodiversity.





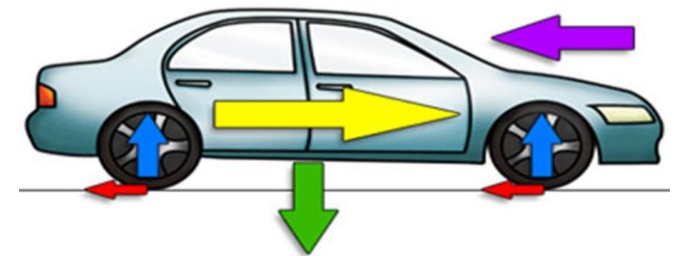
Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.

**Topic 2: Contact Forces and Pressure**

A **force** is a **push** or **pull**. You cannot see the force itself but can see what it **causes** (change in speed, direction or shape). All forces come in **pairs**; no force exists by itself. Different types of forces include:

Contact Force	Non-contact Force
Friction (pull or push)	Gravitational (pull)
Tension (pull)	Electrical (pull or push)
Air Resistance (push)	Magnetic (pull or push)
Applied Force (push)	
Spring Force (pull or push)	

✓ The unit of force is called the **Newton**, and it has the symbol **N**. The greater the force, the bigger the number. Forces can be shown using force diagrams, with arrows representing specific forces; arrows are shown going in the direction of the force and their size is equal to the force.



█ Weight (Gravitational Pull)      █ Driving Force  
█ Reaction Force                      █ Friction  
█ Air Resistance

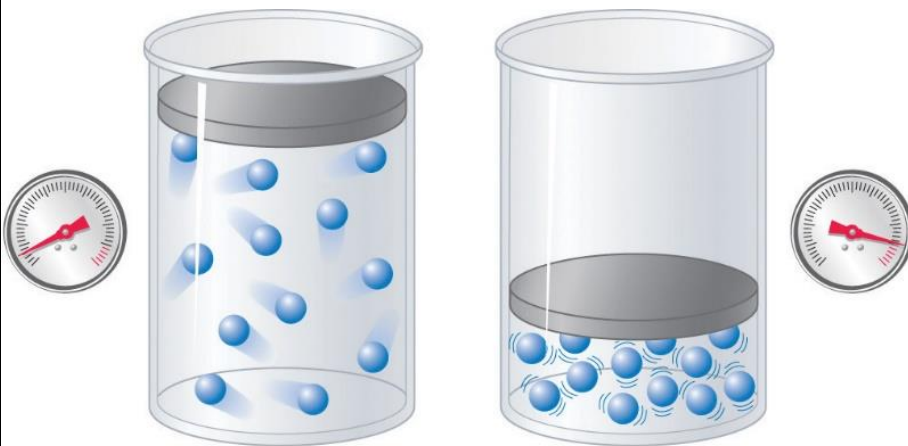
- ✓ We are pulled down towards the ground because of **gravity**. The gravitational force pulls in the direction towards the centre of any object. So, we are pulled towards the centre of the Earth.
- ✓ The **weight** of an object depends upon an object's **mass** and the gravitational **field strength** of the planet- it can be calculated using the below formula triangle.

**NOTE-** Mass is 'the amount of stuff' in an object (measured in kilograms), whereas the weight of an object is the size of the gravitational force between the object and the planet (measured in Newton's), an object's weight can change, but the mass always stays the same.

Gases can exert pressure on the side of a container when they collide with the sides. The more collision from the particles, the greater the pressure and vice versa. The number of collisions (and therefore the pressure) can be increased by increasing the temperature – which increases the energy of particles making them move faster, increasing the concentration of particles as well as decreasing the volume of the container.

Pressure in liquids comes from the weight of particles above. The more particles on top of that section of liquid, the greater the force of pressure in that area. This means there is low liquid pressure at the top of a body of liquid and high liquid pressure at the bottom.

Pressure will be exerted on objects floating on a liquid; This results in the force of upthrust. If this force of upthrust is equal to or greater than the force of weight, the object will continue to float.



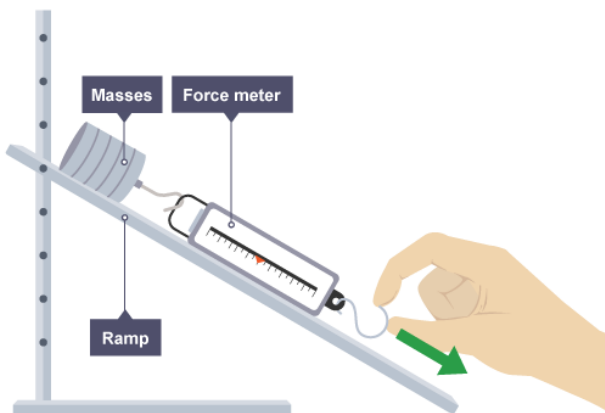
**(a) Low pressure**

**(b) High pressure**



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### Topic 3: Contact Forces – Investigating Friction



An investigation will have an independent variable, dependent variable and control variables. An independent variable is one that is changed in an investigation. A dependent variable is one that is measured in an investigation. A control variable is one that is kept the same during an investigation.

#### Aim of the experiment

To investigate the frictional forces on a mass being pulled down a slope of different gradients.

#### Method

1. Set up the apparatus as in the diagram.
2. Pull the mass along the ramp using the force meter.
3. Record the force needed to start the mass moving (this will be less than the force to pull it along once it is moving).
4. Increase the height of the ramp to 10 cm to make the gradient steeper.
5. Measure the force.
6. Repeat by moving the ramp up in 10 cm intervals until 50 cm is reached.

#### Expected Results

Height of ramp	Force needed
10 cm	21 N
20 cm	16 N
30 cm	10 N
40 cm	5 N
50 cm	2 N

#### Variables

- The independent variable is the height of the ramp (its gradient).
- The dependent variable is the force needed to pull the mass down the ramp.
- Controlled variables include using the same mass and ramp surface.

#### Risks

Care must be taken with masses not to drop them as they can cause harm

#### Evaluation

- Your measurements are accurate if they are close to their true value.
- Your measurements are precise if they are similar when completed again.
- Your experiment is repeatable if you get precise measurements when it is repeated.
- Your experiment is reproducible if others get precise measurements when they repeat it.



Vocabulary	Wider Research	Apply
1) Force 2) Newton 3) Contact 4) Non-contact 5) Mass 6) Volume 7) Weight 8) Buoyancy 9) Equilibrium 10) Pressure 11) Exert 12) Friction 13) Resistance 14) Collision 15) Deoxyribonucleic acid 16) Inheritance 17) Genome 18) Genetic 19) Chromosome 20) Variation 21) Mutation 22) Alleles 23) Biodiversity 24) Nucleotide 25) Amino acid 26) Enzymes 27) Molecule 28) Protein 29) Natural selection 30) Theory	<p><b>Inheritance and genetics</b></p> <p><a href="https://www.bbc.co.uk/bitesize/topics/zpffr82">https://www.bbc.co.uk/bitesize/topics/zpffr82</a></p> <p><b>Friction</b></p> <p><a href="https://www.bbc.co.uk/bitesize/guides/zttfyrd/revisions/4">https://www.bbc.co.uk/bitesize/guides/zttfyrd/revisions/4</a></p> <p><b>Planning Experiments</b></p> <p><a href="https://www.bbc.co.uk/bitesize/topics/zsg6m39/articles/zyc9r2p">https://www.bbc.co.uk/bitesize/topics/zsg6m39/articles/zyc9r2p</a></p> <p><b>Pressure</b></p> <p><a href="https://www.youtube.com/watch?v=NzKAJWmlwg">https://www.youtube.com/watch?v=NzKAJWmlwg</a></p> <p><b>Experiment with Gas Pressure</b></p> <p><a href="https://phet.colorado.edu/sims/html/states-of-matter/latest/states-of-matter_en.html">https://phet.colorado.edu/sims/html/states-of-matter/latest/states-of-matter_en.html</a></p> <p><b>Experiment with Friction</b></p> <p><a href="http://phet.colorado.edu/sims/html/friction/latest/friction_en.html">http://phet.colorado.edu/sims/html/friction/latest/friction_en.html</a></p>	<p><u>Genetics and Evolution</u></p> <ol style="list-style-type: none"> <li>1. A farmer clips the feathers on the wings of his chickens. This makes the feathers shorter and stops the birds being able to fly. The offspring of these birds develop normal flight feathers and can fly. Explain how this scenario helps to disprove Lamarck's hypothesis about evolution?</li> <li>2. How is DNA different to a gene and a chromosome?</li> </ol> <p><u>Contact Forces and Pressure</u></p> <ol style="list-style-type: none"> <li>1) Create two diagrams to show how gas pressure inside a container is different at low temperatures compared to high temperatures.</li> <li>2) Explain why objects remain stationary, linking your ideas to forces in equilibrium.</li> </ol> <p><u>Investigating Friction</u></p> <ol style="list-style-type: none"> <li>1) Why is it important we control certain variables in an investigation? Suggest how not controlling specific variables could affect our investigation into friction.</li> <li>2) Why is it important to repeat each part of a practical at least three times? E.g. repeating the friction experiment at a ramp height of 10cm three times.</li> </ol>



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**Topic 1: The impacts of sport**

**Sport is often called a 'universal language' as sporting activities link many countries together. Many sports can be played in different settings regardless of the level of development of a country.**

**Sport is not only good for health but has other benefits, too:**

- It increases social contact between groups of people.
- It may help to raise an area's image or identity.
- It can help to regenerate an area and redevelop it.
- It can bring money into an area. Spectators may spend money before and after the event which helps out other businesses.
- It can help raise money for charity, e.g. the 'Race for Life'.



**However, there are also some negative impacts that we have to take into account:**

- Sport can cause conflict in some communities.
- Sport and sport rivalries can lead to anti-social behaviour.
- This means that security is needed which brings high costs for organisers.
- Sport tourists cause noise pollution, litter and traffic.

**Sporting success:**

There is also a link between the size of the local population and the potential success of a team or event. The larger the population, the more people there are to come to an event. The greater the support from people, the more money the event gets. With more money, better players and equipment can be bought. This, in turn, attracts sponsorship.





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**Topic 2: The globalisation of sport**

**Globalisation is the way in which the world has become interconnected. It refers to how people communicate, as well as world trade and international investment.**

**Players in the Premier League demonstrate how global influence has become greater over time. Over the last 20 years the average number of foreign players has gradually increased within the league.**

**Reasons for the globalisation of football players within the Premier League include:**

- More frequent, faster travel options for players from abroad.
- Improvements in technology increases global awareness of potential players.
- Television coverage brings high-profile leagues to a greater audience, so more people are aware of the English clubs.
- Pre-season global tours offer high revenue for the clubs, and increases interest from abroad.
- Trading globally is a pattern in business. Buying players from abroad widens the available talent base.
- Selecting players from abroad with the same skill level may be cheaper. This uses opportunities presented by the global market to help reduce costs.
- Purchasing of players from abroad can increase income for the club, e.g. club merchandise will be bought by people supporting their home player who is now playing in a Premier League club in England.

	Country	Club	%
	ENG	Manchester United	40.7%
	SPA	Athletic Bilbao	37.5%
	SPA	Celta de Vigo	33.3%
	GER	Mainz 05	33.3%
	GER	Hertha BSC	31.3%
	GER	1. FC Köln	31.0%
	ENG	Chelsea	29.6%
	FRA	Nantes	28.1%
	GER	Werder Bremen	28.1%
	FRA	Olympique de Marseille	26.9%
	SPA	Villarreal	26.1%
	ENG	Arsenal	25.9%
	GER	SC Freiburg	25.9%
	GER	Bayern Munich	24.1%
	ENG	Southampton	23.8%
	SPA	Real Madrid	23.1%
	SPA	FC Barcelona	22.7%
	SPA	Real Sociedad	22.7%
	GER	VfL Wolfsburg	21.4%
	FRA	Olympique Lyonnais	20.7%



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### Topic 3: London 2012 Olympics

The London Olympics of 2012 was a fantastic sporting spectacle and put the spotlight of the World on our capital city. One of the aims of the London Olympics was to completely transform an area of London that was lagging behind the rest – Stratford in East London was chosen. After the closure of many of London's docks in the 1960s, thousands of people lost their jobs. People left this area to look for jobs elsewhere. This led to lots of poverty, unemployment and deprivation.

The idea behind the 2012 Olympics was to leave a lasting legacy or impact not just for sport but for the urban area in the East of London. The bid was partly successful on the understanding that **Stratford** would be used during the games and regenerated for local people to use after the competitors had left. After the Olympic Games were over, the park was named the Queen Elizabeth Olympic Park.

#### Key facts:

- Stratford is now a well-connected area of London, which allows commuters to travel to work easily.
- Economic benefits were; new jobs and skills were created, skilled trades were encouraged, more investment was created and more tourists visited the area.
- The Olympics helped to encourage sport – there was a massive increase in people signing up for different sports across the UK, money was put into building and improving sports facilities and participation in school sports was encouraged.
- The games led to regeneration of Stratford and the surrounding area – this led to more money being invested, new homes and improved transportation.
- Many volunteers gave up their time for the events, inspiring others to volunteer and encouraging social change.





Vocabulary	Wider Research	Apply
<ol style="list-style-type: none"> <li>1. Business</li> <li>2. Congestion</li> <li>3. Developing</li> <li>4. Economic</li> <li>5. Environmental</li> <li>6. Factories</li> <li>7. Football</li> <li>8. GDP</li> <li>9. Globalisation</li> <li>10. Impact</li> <li>11. Industrial</li> <li>12. Investment</li> <li>13. Legacy</li> <li>14. Manufacturing</li> <li>15. Merchandise</li> <li>16. Olympics</li> <li>17. Pollution</li> <li>18. Partnership</li> <li>19. Primary</li> <li>20. Quaternary</li> <li>21. Regeneration</li> <li>22. Rural</li> <li>23. Secondary</li> <li>24. Security</li> <li>25. Social</li> <li>26. Tertiary</li> <li>27. Transnational corporation</li> <li>28. Traffic</li> <li>29. Urban</li> <li>30. Volunteering</li> </ol>	<p><b>The Geography of Sport:</b> <a href="https://www.youtube.com/watch?v=yYbx-cEJi2Q">https://www.youtube.com/watch?v=yYbx-cEJi2Q</a></p> <p><b>Why did the Premier League break away from the Football League in 1992?</b> <a href="https://www.youtube.com/watch?v=TuLWAnhMhiQ">https://www.youtube.com/watch?v=TuLWAnhMhiQ</a></p> <p><b>The importance of sports to the UK economy:</b> <a href="https://www.wealthandfinance-news.com/the-importance-of-sports-to-the-uk-economy/">https://www.wealthandfinance-news.com/the-importance-of-sports-to-the-uk-economy/</a></p> <p><b>Globalisation:</b> <a href="https://www.rgs.org/schools/teaching-resources/what-is-globalisation/">https://www.rgs.org/schools/teaching-resources/what-is-globalisation/</a></p> <p><b>Case studies:</b> <b>London 2012 Olympics:</b> <a href="https://www.geographycasestudy.com/case-study-london-olympics-2012/">https://www.geographycasestudy.com/case-study-london-olympics-2012/</a></p> <p><b>Nike:</b> <a href="https://www.who.com.au/nike-sweatshops-does-nike-use-sweatshops">https://www.who.com.au/nike-sweatshops-does-nike-use-sweatshops</a></p>	<ol style="list-style-type: none"> <li>1. Why is child labour such a controversial topic?</li> <li>2. Why are sporting individuals so influential?</li> <li>3. Explain how London was regenerated for the 2012 Olympics.</li> <li>4. Describe why security is needed at sporting events. What are the positive and negative impacts of this?</li> </ol> <p><u>Revision materials</u></p> <ol style="list-style-type: none"> <li>1. Create an information leaflet about Globalisation.</li> <li>2. Create a poster about the Paralympic Games from London 2012.</li> <li>3. Conduct some further research and create a revision tree about the impacts of sport.</li> </ol>



**Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.**

**Topic 1: What was the Industrial Revolution?**

**When did it happen?**

- Britain was the first country to undergo the Industrial Revolution. It started in the 18<sup>th</sup> century (the 1700s) and it changed Britain forever!

**What was it?**

- Before the middle of the 18<sup>th</sup> century, Britain was an **agricultural** society.
- This meant that the population relied heavily on farming for their income.
- The vast majority of people farmed small areas of land to provide for their families. This had stayed the same for many centuries.

During the Victorian era, everything changed:

- The landscape
- How people worked
- How people lived
- How Britain was seen by the rest of the world



**How did the population change?**

- Britain's population changed dramatically because lots more people were being born (the birth rate increased) and less people were dying (the death rate decreased).
- Britain's population **did not** increase as a result of people moving into the country.

1750	1900
6 million	37 million

**How did towns change?**

- The size and number of towns also changed beyond recognition.
- This was largely due to new inventions that could produce cloth much quicker.
- These were so large that factories had to be built to put them in.
- People moved out of the countryside and into towns to work in these factories.
- Britain had changed from an agricultural society to an **industrial** one.

Population increases in some British Towns			
	1745	1801	1851
Liverpool	35,000	82,000	376,000
Manchester	45,000	75,000	303,000
Leeds	14,000	53,000	172,000
Bradford	7,000	25,000	105,000
Birmingham	30,000	71,000	233,000



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### Topic 2: Coal and Conditions for Workers

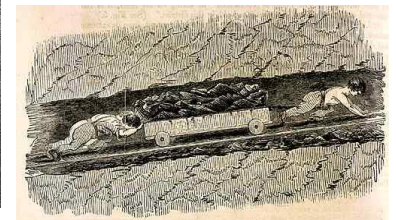
#### Why did coal become so important?

At the start of the Industrial Revolution, new factories were powered by water. Each factory was built near a river. The flow of the river turned a wheel which, in turn, powered the machines. However, this caused a number of problems:

- In summer the river dried up
- In winter the river froze over
- Factories could only be built along rivers

However, in 1768, James Watt and Matthew Boulton developed the **steam engine**. Instead of water, coal was burned to heat water, to create steam, to power an engine. This increased the reliability and meant factories could be built anywhere.

1. Before the industrial revolution, coal was used by the small population for cooking and heating.
2. It could be easily dug up from near the surface.
3. The population dramatically increased.
4. Factories started to use coal as a power source.
5. Much more coal was needed.
6. Digging it out of the ground became much more difficult and dangerous.



#### Why were conditions so bad for workers?

- Greedy coal mine and factory owners wanted to make as much profit as they could so they paid their workers poorly and did not spend money on making working conditions nice or safe. Some of the most frequent causes of death in mines were:
  - Gas explosions
  - Drowning
  - Falling down the mine shaft
  - Being hit by falling rock and coal
- It was completely normal for very young children to be employed in coal mines and factories. They could be paid less and their small size helped in certain jobs.
- There were no laws that protected workers or made it illegal for children to be employed.
- The rich and powerful factory and mine owners were the same rich and powerful people who made the law!



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**Topic 3: Changes to Transport**

**What was transport like before the Industrial Revolution?**

Before the industrial revolution and even at the start of the 19<sup>th</sup> century, transport in Britain was poor. This became an even bigger problem because coal mines and factories needed to move their goods from place to place. During the industrial revolution, transport changed in 3 main ways:

1. Roads improved
2. Canals were dug
3. Steam locomotives were invented and railways were built

**Improvements to roads**

- To make the conditions of roads better and safer, different sections of roads were taken over by 'Turnpike Trusts'.
- They paid for the roads to be maintained. This was vital as the horse-drawn carriages needed a smooth surface.
- People had to pay a 'toll' to use the road.
- Coaching inns were built for people to sleep and eat in.
- However, paying all the tolls was expensive and travelling by road was still very slow.

**Canals**

- For certain businessmen, travelling by road was still not a good solution as their goods (china etc.) did not always arrive safely.
- Travelling by boat would solve this problem so hundreds of miles of canal were dug, connecting all the major towns.
- This created lots of jobs and goods could be transported safely. Canal boats could also transport much heavier loads than horses.
- However, going uphill was a problem and the method was very slow.

**Trains**

- In 1804, Richard Trevithick was the first person to develop a locomotive powered by a steam engine.
- In 1814, George Stephenson invented his own version called *Blucher*.
- From 1821-25, Stephenson built a railway and when it opened, his new engine, *Active*, could travel at 12mph
- In 1829 he won a competition to build the best train with his '*Rocket*'.
- Thousands of miles of railways were built, creating lots of jobs. They could move heavy goods quickly. Train travel became affordable to everyone.



Vocabulary	Wider Research	Apply												
1) Industrial revolution 2) Victorian 3) Century 4) Agricultural 5) Factory 6) Population 7) Inventions 8) Machines 9) Steam engine 10) Coal mine 11) Working conditions 12) Child labour 13) Stage coaches 14) Turnpike trusts 15) Coaching inns 16) Tolls 17) Canals 18) Navvies 19) Locks 20) Viaducts 21) Locomotive 22) Railway 23) Affordable 24) Tourism 25) Birth rate 26) Death rate 27) Bearers 28) Drawers 29) Trappers 30) Change	<p><a href="https://www.bbc.com/bitesize/guides/zvmv4wx/revision/2">https://www.bbc.com/bitesize/guides/zvmv4wx/revision/2</a></p> <p><a href="http://www.youtube.com/watch?v=4As0e4de-rl">http://www.youtube.com/watch?v=4As0e4de-rl</a></p> <p><a href="https://www.english-online.at/history/industrial-revolution/industrial-revolution-manufacturing.htm">https://www.english-online.at/history/industrial-revolution/industrial-revolution-manufacturing.htm</a></p> <p><a href="https://www.youtube.com/watch?v=cjoQs1tCCK4">https://www.youtube.com/watch?v=cjoQs1tCCK4</a></p> <p><a href="https://www.youtube.com/watch?v= 6ZFUKENEOI">https://www.youtube.com/watch?v= 6ZFUKENEOI</a></p> <p><a href="https://www.bbc.com/bitesize/guides/zvmv4wx/revision/8">https://www.bbc.com/bitesize/guides/zvmv4wx/revision/8</a></p> <p><a href="https://www.bbc.co.uk/teach/class-clips-video/the-transport-revolution-britains-canal-network/z6d8qp3">https://www.bbc.co.uk/teach/class-clips-video/the-transport-revolution-britains-canal-network/z6d8qp3</a></p> <p><a href="https://www.bbc.co.uk/bitesize/guides/zc9j9qt/revision/4">https://www.bbc.co.uk/bitesize/guides/zc9j9qt/revision/4</a></p> <p><a href="https://www.bbc.co.uk/teach/class-clips-video/the-invention-of-the-railway/zm2t39">https://www.bbc.co.uk/teach/class-clips-video/the-invention-of-the-railway/zm2t39</a></p>	<ol style="list-style-type: none"> <li>Look at the first picture in topic 1. Create a mind map about all the ways Britain changed as a result of the Industrial Revolution.</li> <li>Britain was the first country to go through an Industrial Revolution. What positive effects did this have on Britain?</li> <li>Using the numbered bullet points in topic 2, create a flow diagram to explain why coal became more important but harder to mine.</li> <li>Watch the 4<sup>th</sup> and 5<sup>th</sup> links in the previous column. Write your own diary entry from the point of view of a child worker in Victorian Britain.</li> <li>Copy and complete the table to below to summarise the advantages and disadvantages of different methods of transport during the Industrial Revolution.</li> </ol> <table border="1" data-bbox="1229 1230 2107 1441"> <thead> <tr> <th></th> <th>Roads</th> <th>Canals</th> <th>Railways</th> </tr> </thead> <tbody> <tr> <td>Advantages</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Disadvantages</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Roads	Canals	Railways	Advantages				Disadvantages			
	Roads	Canals	Railways											
Advantages														
Disadvantages														





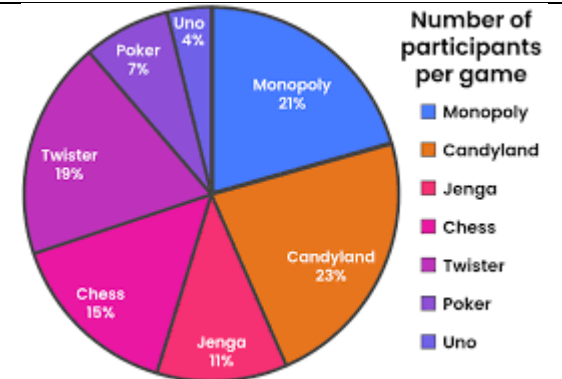


Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.

**Topic 1: Graphs and Charts**

**Pie Charts**

A pie chart is a way of summarising a set of nominal data or displaying the different values of a given variable (e.g. percentage distribution). This type of chart is a circle divided into a series of segments. Each segment represents a particular category. There is a key attached showing the different categories which match the information displayed on the pie chart. Please see the example on the right.



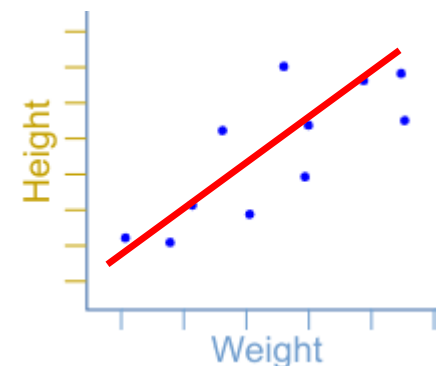
**Using tables**

Colour	Tally marks	Frequency
Black		1
Blue		5
Pink		2
White		4
		Total = 12

To create charts and graphs we need to use a set of data. Data is usually stored in a table before being applied to a chart or graph. A common table use is a frequency table. In the first column is used to display the categories which can also be grouped. The second column is for the tally marks and the third column is the frequency column where we can add up the tally marks and write in the corresponding frequencies. This allows us to obtain the data required.

**Scatter Graphs**

A scatter graph uses dots to represent values for two different numeric variables. The position of each dot on the horizontal and vertical axis indicates values for an individual data point. Scatter graphs are used to observe relationships between variables. A simple scatter graph can be used to see the difference in outdoor temperatures compared to ice cream sales. The two variables would be outside temperature and ice cream sales. When looking at the relationship between two variables we look for a type of correlation: positive, negative or no correlation.





Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.

**Topic 2: Expressions and Equations**


**Algebraic Powers**

Powers are values that show how many times to multiply a base number by itself. For example,  $4^3$  is telling you to multiply four by itself three times. The number being raised by a power is known as the base, while the superscript number above it is the power. We use powers in algebra, the letter has a value that we do not know, otherwise known as a variable, we can use powers to show when a variable is multiplied by itself multiple times. For example  $a \times a \times a$  can be written as  $a^3$ .

**Expressions and Brackets**

An expression is made up of terms which can include letters and numbers. It is a statement that has a minimum of two numbers, or variables, or both and an operator connecting them. To expand a bracket means multiplying each term in a bracket with the term outside. In the example on the right, We need to multiply the two terms inside the bracket by 3.

Expanding brackets


$$3(2x + 1) = 6x + 3$$

Factorising



$$3x + 6 \equiv 3(x + 2)$$

**Factorising Expressions**

Factorising an expression is the opposite of expanding brackets. We need to find the highest common factor (HCF) of each term and this will be our term outside of the brackets. Then we need to fill in each term in the brackets by multiplying out.

**One-step and Two-step equations**

A one-step equation is an algebraic equation you can solve in one step and a two-step equation can be solved in two. Once you've solved it, you've found the value of the variable that makes the equation true. To solve these equations you need to use the inverse operation on both sides of the equation. The inverse operation means the opposite, for example: the inverse of + is -.

Example:  $4a + 10 = 26$

- For the first step, we would subtract 10 from both sides to make  $4a = 16$
- In the second step we need to divide by 4 because  $4a$  means '4 x a' or four lots of a. When we divide by 4 we get  $a = 4$ .

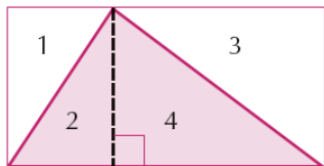


Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.

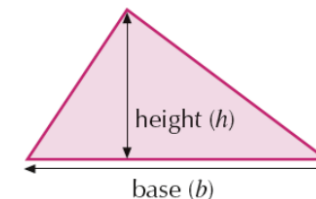
**Topic 3: Area and Volume**

**Area of a Triangle**

To work out the area of a triangle, you need to know the length of its base and its height. You measure the height by drawing a perpendicular line from the base to the angle above it. For this reason, it is sometimes called the perpendicular height. (Perpendicular height: at a right angle to the base)

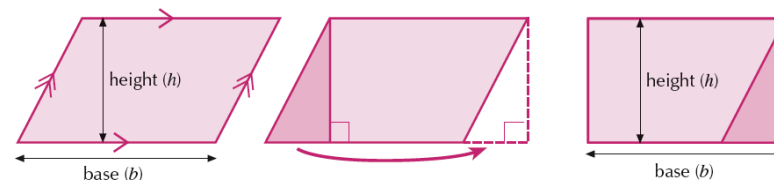


The diagram on the left shows that the area of the triangle is half the area of the rectangle that encloses it (Area 1 = Area 2, and Area 3 = Area 4). The area of the rectangle is found by multiplying the base and the height, so the area of the triangle is found by halving this. **Area of a triangle =  $\frac{1}{2} \times \text{base} \times \text{height}$**

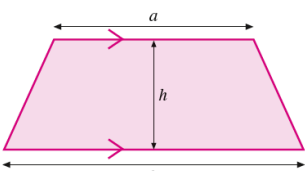


**Area of a Parallelogram**

To work out the area of a parallelogram, you need to know the length of its base and its perpendicular height. These diagrams show that the parallelogram has the same area as a rectangle with the same base and height.



**Area of a Trapezium:**



To work out the area of a trapezium, you need to know the length of its two parallel sides, a and b, and the perpendicular height, h, between the parallel sides. **Area of a trapezium =  $\frac{1}{2} \times (a + b) \times \text{height}$**

Work out the area of this trapezium.

$$A = \frac{1}{2} \times (9 + 5) \times 4$$

$$= \frac{1}{2} \times 14 \times 4$$

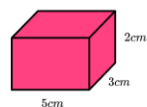
$$= 28 \text{ cm}^2$$

**Volume of a Cuboid**

The **volume of a cuboid** is how much space there is inside the cuboid.

Volume = length  $\times$  width  $\times$  height

E.g.



The units of volume are cubed units.  
E.g.  
mm<sup>3</sup> (cubic millimetres),  
cm<sup>3</sup> (cubic centimetres),  
m<sup>3</sup> (cubic metres).



**Volumes of Cubes and Cuboids**

To work out the volume of a cube or cuboid you will need to multiply the length, width and height together. A cube's sides are all of the same length, therefore you can multiply one of the sides with itself and then by itself again. For example: If the length of a cube was 6, I would find out the answer to  $6 \times 6 \times 6$  or  $6^3 = 216$ .

A cuboid is slightly different as the lengths will be different. **Volume of a cuboid = Length  $\times$  Width  $\times$  Height**



Vocabulary	Wider Research	Apply
Pie Chart Nominal Data Variable Segment Category Tally Chart Graph Frequency Numeric Horizontal Vertical Scatter Graph Positive Negative correlation Equation Linear Inverse Power Expression Factorise Factor Operation	<p><u>Topic 1</u></p> <ul style="list-style-type: none"> <li><a href="https://corbettmaths.com/2013/05/25/interpreting-pie-charts/">https://corbettmaths.com/2013/05/25/interpreting-pie-charts/</a></li> <li><a href="https://corbettmaths.com/2012/08/19/means-from-frequency-tables/">https://corbettmaths.com/2012/08/19/means-from-frequency-tables/</a></li> <li><a href="https://corbettmaths.com/2012/08/10/scatter-graphs/">https://corbettmaths.com/2012/08/10/scatter-graphs/</a></li> </ul> <p><u>Topic 2</u></p> <ul style="list-style-type: none"> <li><a href="https://corbettmaths.com/2013/03/13/laws-of-indices-algebra/">https://corbettmaths.com/2013/03/13/laws-of-indices-algebra/</a></li> <li><a href="https://corbettmaths.com/2013/12/23/expanding-brackets-video-13/">https://corbettmaths.com/2013/12/23/expanding-brackets-video-13/</a></li> <li><a href="https://corbettmaths.com/2013/02/06/factorisation/">https://corbettmaths.com/2013/02/06/factorisation/</a></li> <li><a href="https://corbettmaths.com/2012/08/24/solving-equations/">https://corbettmaths.com/2012/08/24/solving-equations/</a></li> </ul> <p><u>Topic 3</u></p> <ul style="list-style-type: none"> <li><a href="https://corbettmaths.com/2012/08/02/area-of-a-trapezium-video/">https://corbettmaths.com/2012/08/02/area-of-a-trapezium-video/</a></li> <li><a href="https://corbettmaths.com/2013/12/20/area-of-a-triangle-video-49/">https://corbettmaths.com/2013/12/20/area-of-a-triangle-video-49/</a></li> <li><a href="https://corbettmaths.com/2013/12/21/area-of-a-parallelogram-video-44/">https://corbettmaths.com/2013/12/21/area-of-a-parallelogram-video-44/</a></li> <li><a href="https://corbettmaths.com/2012/08/09/volume-of-cuboids-and-cubes/">https://corbettmaths.com/2012/08/09/volume-of-cuboids-and-cubes/</a></li> </ul>	<p><u>Topic 1</u></p> <ul style="list-style-type: none"> <li><a href="https://corbettmaths.com/wp-content/uploads/2018/09/Pie-Charts-pdf.pdf">https://corbettmaths.com/wp-content/uploads/2018/09/Pie-Charts-pdf.pdf</a></li> <li><a href="https://corbettmaths.com/wp-content/uploads/2013/02/mean-from-a-frequency-table-pdf3.pdf">https://corbettmaths.com/wp-content/uploads/2013/02/mean-from-a-frequency-table-pdf3.pdf</a></li> <li><a href="https://corbettmaths.com/wp-content/uploads/2019/01/Scatter-Graphs-1.pdf">https://corbettmaths.com/wp-content/uploads/2019/01/Scatter-Graphs-1.pdf</a></li> </ul> <p><u>Topic 2</u></p> <ul style="list-style-type: none"> <li><a href="https://corbettmaths.com/wp-content/uploads/2013/02/laws-of-indices-pdf.pdf">https://corbettmaths.com/wp-content/uploads/2013/02/laws-of-indices-pdf.pdf</a></li> <li><a href="https://corbettmaths.com/wp-content/uploads/2013/02/expanding-brackets-pdf1.pdf">https://corbettmaths.com/wp-content/uploads/2013/02/expanding-brackets-pdf1.pdf</a></li> <li><a href="https://corbettmaths.com/wp-content/uploads/2020/05/Factorisation.pdf">https://corbettmaths.com/wp-content/uploads/2020/05/Factorisation.pdf</a></li> <li><a href="https://corbettmaths.com/wp-content/uploads/2020/10/Equations-pdf.pdf">https://corbettmaths.com/wp-content/uploads/2020/10/Equations-pdf.pdf</a></li> </ul> <p><u>Topic 3</u></p> <ul style="list-style-type: none"> <li><a href="https://corbettmaths.com/wp-content/uploads/2018/11/Negatives-multiplication-and-division-pdf.pdf">https://corbettmaths.com/wp-content/uploads/2018/11/Negatives-multiplication-and-division-pdf.pdf</a></li> <li><a href="https://corbettmaths.com/wp-content/uploads/2018/09/Area-of-a-Trapezium-pdf-1.pdf">https://corbettmaths.com/wp-content/uploads/2018/09/Area-of-a-Trapezium-pdf-1.pdf</a></li> <li><a href="https://corbettmaths.com/wp-content/uploads/2018/02/area-of-a-triangle-pdf.pdf">https://corbettmaths.com/wp-content/uploads/2018/02/area-of-a-triangle-pdf.pdf</a></li> <li><a href="https://corbettmaths.com/wp-content/uploads/2013/02/area-of-a-parallelogram-pdf2.pdf">https://corbettmaths.com/wp-content/uploads/2013/02/area-of-a-parallelogram-pdf2.pdf</a></li> </ul>





**Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.**

**Topic 1: En ville. In town**

Qu'est-ce-qu'il y a dans...? What is there in...?

**ta ville/ton village** = your town/village

**il y a....** = there is.....

**un centre de loisirs** = a leisure centre

**un centre commercial** = a shopping centre

**un château** = a castle

**un marché** = a market

**un musée** = a museum

**une patinoire** = an ice rink

**une piscine** = a swimming pool

**des magasins** = some shops

**il n'y a pas d'église** = there isn't a church

**il n'y a pas de magasins** = there aren't any shops

**le prix** = the price      **un euro** = one euro

**trois euros cinquante** = 3,50€

Tu aimes habiter ici? Do you like to live here?

**J'aime** = I like

**J'adore** = I love

**Je n'aime pas** = I don't like

**Je déteste** = I hate



**habiter ici** = to live here



**parce que / car** = because

**c'est** = it is      **très** = very      **trop** = too      **vraiment** = really

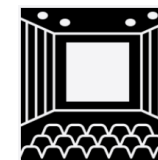
**amusant** = fun      **génial** = great      **intéressant** = interesting

**ennuyeux** = boring      **nul** = rubbish

Où vas-tu le weekend? Where do you go at the weekend ?

**Je vais....I go**

- **au bowling** = to the bowling alley
- **au cinéma** = to the cinema
- **au parc** = to the park
- **au stade** = to the stadium
- **à la plage** = to the beach
- **à la piscine** = to the swimming pool
- **à l'église** = to the church
- **aux magasins** = to the shops



**le samedi matin/ après-midi/soir** = on Saturday mornings/ afternoons/evenings



Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.

Topic 2: The present tense of the verb "aller" (to go)

**Important verb : *ALLER (to go)***

*in the present tense*

ALLER	TO GO
Je <b>vais</b>	I go / I am going
tu <b>vas</b>	You (singular, informal) go / You are going
il/elle/ <u>on</u> <b>va</b>	He/she/ <u>we</u> (informal) goes/go // is going/ are going
Nous <b>allons</b>	We (formal) go / we are going
Vous <b>allez</b>	you (plural / formal /polite) go/ you are going
ils/elles <b>vont</b>	They (masc./ fem.) go / they are going



**Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.**

**Topic 3. The near future / the immediate future tense.**

**Grammaire:**

**When do you use the near future tense?**

You use the near future tense to say what IS GOING TO HAPPEN or what YOU ARE GOING TO DO.

**How do you form the near future tense?**

You use:

**A subject + "aller" in the present tense + the infinitive form of the verb**

example:	je	vais	visiter
	I	am going	to visit

**Visiter (to visit) in the near future tense**

Je vais visiter	I am going to visit
Tu vas visiter	You (singular, informal) are going to visit
Il/elle/on va visiter	He/she is we are going to visit
Nous allons visiter	We are going to visit
Vous allez visiter	You (plural, formal, polite) are going to visit
Ils/elles vont visiter	They (masc./ fem.) are going to visit

**Qu'est-ce que tu vas faire à Paris?** *What are you going to do in Paris?*

**Je vais...** = I am going...

**visiter la cathédrale Notre Dame** = to visit the cathedral Notre Dame

**visiter la tour Eiffel** = to visit the Eiffel tower

**aller au musée du Louvre** = to go to the Louvre

**aller aux Catacombes** = to go to the Catacombs

**prendre des photos** = to take pictures

**acheter des souvenirs** = to buy souvenirs

**admirer la Joconde** = to admire the Joconde

**faire un pique-nique** = to do a picnic







*Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.*

### Topic 1: Character Profile of Sunny

- Sunny is 17 years old
- He recently moved to **Bristol** with his mum and his dad
- His dad has a heart **condition** and is in a **hospice** – Sunny hasn't been to see him since he went to the hospice
- Sunny is **quiet** and **reserved**
- His best friend is a girl called Madhu
- Sunny is a good student and wants to go to **university**
- He is the victim of a racial attack at the train **station**
- A chance encounter with a taxi driver means that he **discovers** the world of **boxing**
- He joins a local boxing club and trains with Shobu (an Olympic boxer) and Keir.
- Keir and Sunny develop a **friendship** and they take part in a 10 round boxing match





*Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.*

**Topic 2: Opinion Paragraph Structure**

When we read an **extract** or a section of text, we are often asked to find **quotations** and comment on them.

This is our **opinion** paragraph structure and we need to use these sentence starters when answering questions.

When we explain a quotation, we need to identify **techniques** and discuss the effect of these on the audience.

<b>1 – Reword Question</b>	<b>The writer intentionally *reword question*... because...</b>
	*writer’s name* creates the opinion that... because...
<b>2 - Quotation</b>	The author writes ' _____ '
	This is proven in the phrase ' _____ '
<b>3 - Explain</b>	This ____ helps me to imagine...because... because...
	As a reader, this ____ shows me that...because...because...
<b>4- Zoom in</b>	The word ____ from the sentence/phrase encourages me to think about...because... because...
	When I look at the word ____ it makes me think of...because... because...
<b>5 – Author’s Intentions</b>	During the time of writing, the author was influenced by/wanted us to think about ...because... because...



Your teacher will tell you which topic you should revise. Read and learn all the information in the topic, ready for a Quiz in lesson.

Topic 3: Key Themes in the Boxer		
<u>Theme</u>	<u>Example from the text</u>	<u>Why is this important</u>
<b>Friendship</b>	'Like, leaving London and everything I knew for this new city had been so jarring, but here was someone who effortlessly made me feel like I was at home.'	Sunny and Madhu have a close friendship in the <b>novella</b> , they are paired up at school and Madhu helps Sunny to settle in. Madhu is very caring and wants to help Sunny after the attack but he is afraid to tell her.
<b>Family</b>	'I'd never shouted at my mum before. Never ever. She was the only person in the world I wasn't afraid of talking to. I told her everything'	Since his Dad became ill, Sunny and his mum have been at home together. He has had to be there for her to cheer her up and she enjoys cooking with him. Since they moved to Bristol, Sunny relies on his mum for a lot of his <b>emotional</b> support, but after the attack he feels distant from her.
<b>Mental Health</b>	'As we approached the station I started to feel memories of that night creep in. It had been less than a week since it had happened but my brain was still doing everything in its power to fight the bad thoughts'	Sunny struggles to <b>process</b> what has happened to him, like lots of people who suffer with poor mental health, he tries to block it out and pretend it didn't happen. He struggles to face up to it and struggles to talk to anyone about it.
<b>Racism</b>	'They kicked me a bunch more times and called me every single racist name under the sun. I had never been attacked before. I'd never even been hit. It felt like hours, but was over in seconds. Scars that could last a lifetime, taking seconds to inflict.'	At the beginning of the book, Sunny is the victim of a racial attack. He is attacked at the train station and the book explores how he copes with this after the event. He <b>blames</b> himself and struggles to talk to people about it.
<b>Identity</b>	'my body didn't feel like mine anymore. Everything about it seemed wrong. My shoes suddenly felt the wrong size. My t-shirt kept riding up my back. My fingers were so weak I couldn't make a fist. It felt like my body had been remoulded and reshaped for someone else.'	After the attack, Sunny struggles to <b>understand</b> his identity – he doesn't feel like himself any more and he struggles to come to terms with who he is now because he doesn't feel the same.



Vocabulary	Wider Research	Apply
<ol style="list-style-type: none"><li>1. Protagonist</li><li>2. First person</li><li>3. Third person</li><li>4. Non-fiction</li><li>5. Colloquial</li><li>6. Audience</li><li>7. Structure</li><li>8. Setting</li><li>9. Shift</li><li>10. Opinion</li><li>11. Influence</li><li>12. Semantic field</li><li>13. Connotations</li><li>14. Punctuation</li><li>15. Tolerance</li><li>16. Respect</li><li>17. Community</li><li>18. Free will</li><li>19. Friendship</li><li>20. Family</li></ol>	<ul style="list-style-type: none"><li>• Research the benefits of boxing on physical and mental health.</li> <li>• Research famous boxers such as: Mohammad Ali, Mike Tyson, Tyson Fury, Anthony Joshua and compare the similarities and differences between the different boxers.</li> <li>• Complete further research on Nukesh Shukla and watch the following Ted Talk where he talks about why diverse stories matter <a href="https://www.ted.com/talks/nikesh_shukla_why_diverse_stories_matter">https://www.ted.com/talks/nikesh_shukla_why_diverse_stories_matter</a></li> <li>• Watch the video about Mohammad Ali and explore how he used his fame to address issues with oppression and human rights <a href="https://www.youtube.com/watch?v=X-NW3NIL7W0">https://www.youtube.com/watch?v=X-NW3NIL7W0</a></li> <li>• Further books by Nikesh Shukla<ul style="list-style-type: none"><li>○ Stand Up</li><li>○ Run Riot</li></ul></li></ul>	<ol style="list-style-type: none"><li>1. Research boxing in the UK and create a poster</li> <li>2. Create a character profile for Sunny – consider: personality traits, interests, relationships with other characters in the novel</li> <li>3. Using your research into boxing, design a training program to improve fitness for somebody who is wanting to get into boxing</li> <li>4. Write a diary entry from the point of view of Sunny at the beginning of the novel.</li> <li>5. Create a story board of the key events in the novel so far</li></ol>