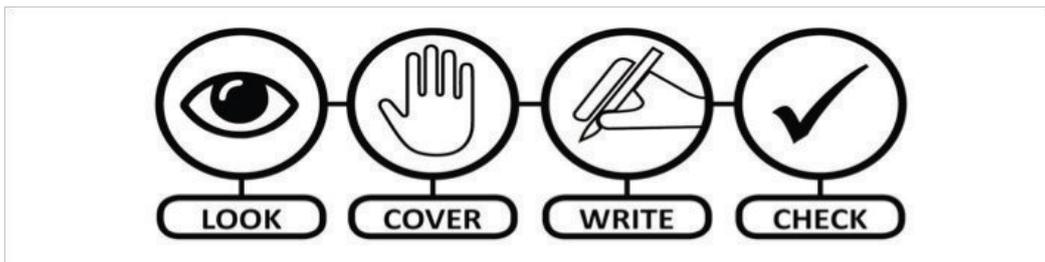




Year 8 Knowledge Organiser: Spring

Name:	
Form:	



Number 3

Year 8: Knowledge Organisers – Guidance for Parents

What are knowledge organisers?

A knowledge organiser is a set of key facts or information that pupils need to know and be able to recall in order to master a unit or topic. Typically an organiser fits onto one page of A4 this helps pupils to visualize the layout of the page which in turn helps them to memorise the information better.

Why are we moving to knowledge organisers?

Typically, most youngsters leave their revision until a few weeks (best case scenario) or days/hours (worst case scenario) before the examinations and tests. This presents a problem. Our short term memory is designed to be just that and has limited capacity. Pupils find themselves unable to retain the information, they become stressed and often give up, convincing themselves they are no good at revising or that they “can’t do subject ‘x’ ”.

The secret to success is to regularly revisit the knowledge to be learned (known as ‘spaced retrieval’). This helps transfer the knowledge from the short-term memory to the long term memory. This not only helps to make ‘learning stick’ but it also frees up our short-term memory for day to day learning and experiences.

How will a knowledge organiser help my child? Suggested activities for parents

Knowledge organisers will be made available at the start of each unit to help them remember what they’re learning and to help them to see the bigger learning journey in their subjects. Instead of forgetting previous learning, pupils continually revisit and retrieve prior learning from their memories.

Most homework set will be linked to all/some aspects of the organiser. This might be to learn keyword spellings or to write an extended response that uses some/all of the knowledge from the organiser. Here are some strategies that might help you to do this.

- Read through the organiser with your son/daughter – if you don’t understand the content then ask them to explain it to you – ‘teaching’ you helps them to reinforce their learning.
- Test them regularly on the spellings of key words until they are perfect. Make a note of the ones they get wrong – is there a pattern to the spelling of those words?
- Get them to make a glossary (list) of keywords with definitions or a list of formulae.
- Read sections out to them, missing out key words or phrases that they have to fill in. Miss out more and more until they are word perfect.

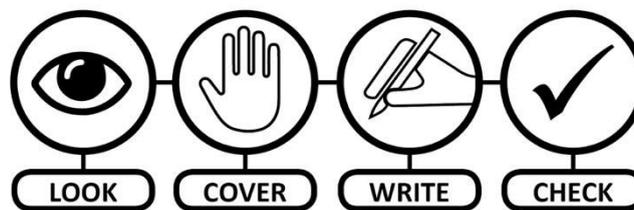
We would recommend that pupils spend thirty minutes per homework learning the knowledge detailed in the organiser. A video on using knowledge organisers can be found at the following link: <https://bit.ly/2MNb2H5>

Knowledge Organisers – Guidance for Pupils

At the start of every 1/2 term, you will be given a knowledge organiser booklet, containing a KO for every subject. These will show you the exact facts, dates, events, characters, concepts and precise definitions that we need you to remember for that topic. Securing this knowledge base will allow you to develop your skills of understanding, analysis and evaluation in lessons more effectively.

You will also be supplied with a knowledge practice book, you will use this book to complete all your home works for all subjects.

How to use a knowledge organiser:



To do this, memorise a section of the organiser then cover up this part of their knowledge organiser, write it out from memory (in a black or blue pen), then self-check and correct any spelling mistakes, missing bits or mistakes (in a purple pen). This way, you will learn the most valuable knowledge in every subject by heart and free up space in their brain to develop your skills

We would recommend that pupils spend thirty minutes per homework learning the knowledge detailed in the organiser.

Your teacher will use low stakes testing to check your learning in your next lesson in the subject.

Day	Homework 1	Homework 2
Monday week 1	English	Art
Tuesday week 1	Maths	Music
Wednesday week 1	Science	Drama
Thursday week 1	RE	MFL
Friday week 1	History	
Monday week 2	Technology	English
Tuesday week 2	Maths	
Wednesday week 2	PE	Science
Thursday week 2	Computer Science	RE
Friday week 2	Geography	

Homework instructions		
Monday 6th January Week 2	INSET DAY	INSET DAY
Tuesday 7th January Week 2	Maths (p7-12) Using the look, cover, write and check methodology complete the knowledge organiser Page 1 - 8QLMC, 8QDH, 8JCG, 8JMM Page 4 - 8QCG, 8QLG, 8QIB, 8JLMC, 8JME	English (p13) Read the key terminology. Memorise this and be prepared to be tested on this information in class.
Wednesday 8th January Week 2	PE (p26) Complete the homework on Components of Fitness on Doodle.	Science (p15-16) For section 1 and section 2 use the technique look, cover, write and check, for each bullet point correcting mistakes in purple pen.
Thursday 9th January Week 2	Computer Science (p25) Online Threats: Use Look - Cover - Write - Check to learn the Online Threats keywords.	RE (p17-18) Use copy, cover, write, check to learn key words 1-5.
Friday 10th January Week 2	Geography (p19-20) Complete the questions from Homework Quiz 1. Find the answers on your Climate Change Knowledge Organiser. Write the questions and answers as flash cards in your homework book. Use techniques such as look, cover, write and blind testing to revise for your quiz in lesson.	
Monday 13th January WEEK 1	English (p13) Read the box entitled Man vs Self. Answer the 3 questions. Write a paragraph describing a character experiencing this form of conflict.	Art (p14) Create a research page on Art Nouveau. (Section 2 of your knowledge organiser) <ul style="list-style-type: none"> • Write a detailed description of what is considered Art Nouveau. • Draw one image to accompany your written description.
Tuesday 14th January Week 1	Maths (p7-12) Complete the written homework task set by your class teacher to be handed in on your next maths lesson for feedback	Music To be set by your class teacher
Wednesday 15th January Week 1	Science (p15-16) For section 3 and section 4 use the technique look, cover, write and check, for each bullet point correcting mistakes in purple pen.	Drama To be set by your class teacher
Thursday 16th January Week 1	RE (p17-18) Use copy, cover, write, check to learn key words 6-10.	MFL (p23-24) Read the text. Copy out the sentences and say if they are true or false.
Friday 17th January Week 1	History (p21-p22) Look at Section B of the Knowledge Organiser: the causes and outbreak of World War One. Use the look, cover, write, and check method for all keywords 1-14 and the timeline 20-27. Check as you go and correct with purple pen.	

<p>Monday 20th January Week 2</p>	<p>Technology (p27-29) Design and Technology – Electronics: Low Stakes Test 2 - Week 4 of Knowledge Organiser (Numbers:1 – 4)</p> <ul style="list-style-type: none"> • Use KO to enable you to accurately identify and clearly explain the difference between a polarised and non-polarised component • Use KO and further research to enable you to understand the function of key electronic components within a circuit • Use KO to help you to understand why soldering is not suitable for modelling circuits • Use KO to recall and accurately spell the names of workshop tools and equipment <p>Design and Technology - CAD & CAM: Low Stakes Test 2 – Week 4 of Knowledge Organiser (Numbers: 1-7)</p> <ul style="list-style-type: none"> • Use KO to be able to identify the difference between first and third angle projection • Use KO to enable you to understand and explain the purpose of an engineering drawing • Use KO to be able to clearly explain the terms “Render” and “Dimensioning” • Use KO to be able to clearly explain the advantages of using CAD to generate designs • Use KO to be able to identify CNC machinery and 3D Printers <p>Food:</p> <ul style="list-style-type: none"> • Write the the list of keywords. • Make a series of flash cards for ALL of the cooking methods 	<p>English (p13) Read the box entitled Man vs Man. Answer the 3 questions. Write a paragraph describing a character experiencing this form of conflict.</p>
<p>Tuesday 21st January Week 2</p>	<p>Math (p7-12) Using the look, cover, write and check methodology complete the knowledge organiser Page 2 - 8QLMC, 8QDH, 8JCG, 8JMM Page 5 - 8QCG, 8QLG, 8QIB, 8JLMC, 8JME</p>	
<p>Wednesday 22nd January Week 2</p>	<p>PE (p26) Make sure you have completed the homework on Components of Fitness on Doodle.</p>	<p>Science (p15-16) For section 5 use the technique look, cover, write and check, for each bullet point correcting mistakes in purple pen.</p>
<p>Thursday 23rd January Week 2</p>	<p>Computer Science (p25) Hackers: Use the information in the table and your own research to create a poster warning people about hackers and what they can do. You should include information from all boxes in the table.</p>	<p>RE (p17-18) Use copy, cover, write, check to learn the 10 Commandments.</p>
<p>Friday 24th January Week 2</p>	<p>Geography (p19-20) Complete the questions from Homework Quiz 2. Find the answers on your Climate Change Knowledge Organiser. Write the questions and answers as flash cards in your homework book. Use techniques such as look, cover, write and blind testing to revise for your quiz in lesson.</p>	
<p>Monday 27th January Week 1</p>	<p>English (p13) Read the box entitled Man vs Nature. Answer the 3 questions. Write a paragraph describing a character experiencing this form of conflict.</p>	<p>Art Look at section B of your knowledge organiser (p14) “Expressing an opinion”</p>

		In preparation to your written an analysis of Gustav Klimt's work. Write up an analysis of a film/programme/book you have recently seen/read and explain your reasons for like or dis-liking it. (at least one full paragraph) Key words: Character, Story, Plot, Scenery, Theme
Tuesday 28th January Week 1	Maths (p7-12) Complete the written homework task set by your class teacher to be handed in on you next maths lesson for feedback	Music To be set by your class teacher
Wednesday 29th January Week 1	Science (p15-16) For section 1 <i>Switches and Current</i> and section 2 <i>Models For Circuits</i> , use technique look, cover, write and check for each bullet point correcting mistakes in purple pen. You should be able to: <ul style="list-style-type: none"> • Explain what an electric current is • Identify an ammeter is used to measure a current (A). • State what static electricity is. • Identify good and poor conductors of electricity. 	Drama To be set by your class teacher
Thursday 30th January Week 1	RE (p17-18) Create 5 questions to ask your class about the 10 commandments.	MFL (p23-24) Copy out the words in Spanish and English and learn them thoroughly. Look, cover, write, check.
Friday 31st January Week 1	History (p21-p22) Use Section B of the knowledge organiser: World War One. Use the look, cover, write, check method for all keywords 1-17. Check as you go and complete corrections in purple pen.	
Monday 3rd February Week 2	Technology (p27-29) Design and Technology: Electronics: <ul style="list-style-type: none"> • Create flashcards/mind maps to revise and recall all KO subject content in preparation for formative and summative assessment Design and Technology: CAD & CAM: <ul style="list-style-type: none"> • Create flashcards/mind maps to revise and recall all KO subject content in preparation for formative and summative assessment Food: <ul style="list-style-type: none"> • Design a poster on the Eatwell Guide and include information on Macro and Micronutrients. Use must colour the poster in pencil and write in pen. 	English (p13) Read the box entitled Man vs Supernatural. Answer the 3 questions. Write a paragraph describing a character experiencing this form of conflict.
Tuesday 4th February Week 2	Maths (p7-12) Using the look, cover, write and check methodology complete the knowledge organiser Page 3 - 8QLMC, 8QDH, 8JCG, 8JMM Page 6 - 8QCG, 8QLG, 8QIB, 8JLMC, 8JME	
Wednesday 5th February	PE (p26) Make sure you have completed the homework on Components of Fitness on Doodle.	Science (p15-16) For section 3 <i>Series and parallel circuits</i> and section 4 <i>Changing The Current Models</i> , use the technique

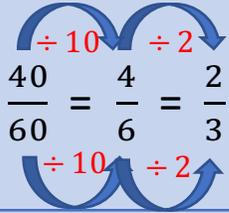
		<p>look, cover, write and check for each bullet point correcting mistakes in purple pen.</p> <p>You should be able to:</p> <ul style="list-style-type: none"> ● Explain and identify what a series circuit is ● Explain and identify parallel circuit ● Compare and contrast a parallel to a series circuit ● Identify a voltmeter measures potential difference. ● Identify the unit of resistance is ohms ● Recall the word equation for resistance.
Thursday 6th February Week 2	<p>Computer Science (p25)</p> <p>Protect your stuff: Using the information in the table, advise the school on how to best protect itself from online threats. You should use at least 4 sections from the table.</p>	<p>RE (p17-18)</p> <p>Write 5 facts about Dietrich Bonhoeffer.</p>
Friday 7th February Week 2	<p>Geography (p19-20)</p> <p>Complete the questions from Homework Quiz 3. Find the answers on your Climate Change Knowledge Organiser. Write the questions and answers as flash cards in your homework book. Use techniques such as look, cover, write and blind testing to revise for your quiz in lesson.</p>	
Monday 10th February Week 1	<p>English (p13)</p> <p>Read the box entitled Man vs Society. Answer the 3 questions. Write a paragraph describing a character experiencing this form of conflict.</p>	<p>Art (p14)</p> <p>Create a research page on Art Nouveau and Architecture.</p> <ul style="list-style-type: none"> ● Explain the features. ● Discover one artist/designer who influenced Art Nouveau within Architecture.
Tuesday 11th February Week 1	<p>Maths (p7-12)</p> <p>Complete the written homework task set by your class teacher to be handed in on you next maths lesson for feedback</p>	<p>Music</p> <p>To be set by your class teacher</p>
Wednesday 12th February Week 1	<p>Science (p15-16)</p> <p>For section 5 Using Electricity and sections 1 to 4 create 10 flashcards</p> <p>5 flashcards should include the questions</p> <ul style="list-style-type: none"> ● Identify 5 ways someone can be electrocuted? ● Identify the different parts of the plug and the function of each part? (3) ● Identify the word equation for resistance (1) ● Compare and contrast a parallel to a series circuit? ● Describe static electricity and how it is created? 	<p>Drama</p> <p>To be set by your class teacher</p>
Thursday 13th February Week 1	<p>RE (p17-18)</p> <p>Create a biography about Dietrich Bonhoeffer.</p>	<p>MFL (p23-24)</p> <p>Copy out the words in Spanish and English and learn them thoroughly.</p> <p>Look, cover, write, check.</p>
Friday 14th February Week 1	<p>History (p21-p22)</p> <p>Look at Section B of the Knowledge Organiser: World War One. Use the look, cover, write, echeck method for all key people 18-21 and the timeline of events 22-28. Check as you go and complete all corrections in purple pen.</p>	



Simplifying Fractions

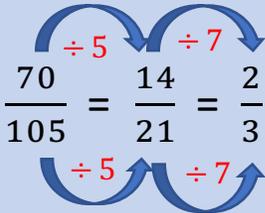
WAGOLL 1:

Simplify $\frac{40}{60}$



WAGOLL 2:

Simplify $\frac{70}{105}$



Key Vocabulary

Simplify: Make something simpler or easier to do or understand or to reduce something to its lowest terms

Power: The power of a number says how many times to use the number in a multiplication

Factor: A number that divides into another number exactly and without leaving a remainder.

Powers and Roots

Vertical text: Square Numbers

- $1^2 = 1 \times 1 = 1$
- $2^2 = 2 \times 2 = 4$
- $3^2 = 3 \times 3 = 9$
- $4^2 = 4 \times 4 = 16$
- $5^2 = 5 \times 5 = 25$
- $6^2 = 6 \times 6 = 36$
- $7^2 = 7 \times 7 = 49$
- $8^2 = 8 \times 8 = 64$

- $9^2 = 9 \times 9 = 81$
- $10^2 = 10 \times 10 = 100$
- $11^2 = 11 \times 11 = 121$
- $12^2 = 12 \times 12 = 144$
- $13^2 = 13 \times 13 = 169$
- $14^2 = 14 \times 14 = 196$
- $15^2 = 15 \times 15 = 225$

Vertical text: Square Roots

- $\sqrt{1} = 1$ and -1
- $\sqrt{4} = 2$ and -2
- $\sqrt{9} = 3$ and -3
- $\sqrt{16} = 4$ and -4
- $\sqrt{25} = 5$ and -5
- $\sqrt{36} = 6$ and -6
- $\sqrt{49} = 7$ and -7
- $\sqrt{64} = 8$ and -8
- $\sqrt{81} = 9$ and -9
- $\sqrt{100} = 10$ and -10

Fractions, Decimals and Percentages

Fraction	Decimal	Percentage
$\frac{1}{2}$	0.5	50%
$\frac{1}{3}$	$0.\dot{3}$	33. $\dot{3}$ %
$\frac{1}{4}$	0.25	25%
$\frac{1}{5}$	0.2	20%



Adding and Subtracting Fractions

WAGOLL:

Work out: $\frac{1}{3} + \frac{4}{7}$

Create a common denominator by find the lowest common multiple (LCM). The LCM of 3 and 7 is 21.

$$\frac{1}{3} + \frac{4}{7} \rightarrow \frac{7}{21} + \frac{12}{21}$$

Once the denominators are the same. Just add the numerators.

$$\frac{7}{21} + \frac{12}{21} = \frac{19}{21}$$

Key Vocabulary

Numerator: The top number in a fraction. Shows how many parts we have

Denominator: The bottom number in a fraction. Shows how many equal parts the item is divided into

Multiple: the product result of one number multiplied by another number.

Powers and Roots

Square Numbers

$$(-1)^2 = -1 \times -1 = 1$$

$$(-2)^2 = -2 \times -2 = 4$$

$$(-3)^2 = -3 \times -3 = 9$$

$$(-4)^2 = -4 \times -4 = 16$$

$$(-5)^2 = -5 \times -5 = 25$$

$$(-6)^2 = -6 \times -6 = 36$$

$$(-7)^2 = -7 \times -7 = 49$$

$$(-8)^2 = -8 \times -8 = 64$$

$$(-9)^2 = -9 \times -9 = 81$$

$$(-10)^2 = -10 \times -10 = 100$$

$$(-11)^2 = -11 \times -11 = 121$$

$$(-12)^2 = -12 \times -12 = 144$$

$$(-13)^2 = -13 \times -13 = 169$$

$$(-14)^2 = -14 \times -14 = 196$$

$$(-15)^2 = -15 \times -15 = 225$$

Square Roots

$$\sqrt{1} = 1 \text{ and } -1$$

$$\sqrt{4} = 2 \text{ and } -2$$

$$\sqrt{9} = 3 \text{ and } -3$$

$$\sqrt{16} = 4 \text{ and } -4$$

$$\sqrt{25} = 5 \text{ and } -5$$

$$\sqrt{36} = 6 \text{ and } -6$$

$$\sqrt{49} = 7 \text{ and } -7$$

$$\sqrt{64} = 8 \text{ and } -8$$

$$\sqrt{81} = 9 \text{ and } -9$$

$$\sqrt{100} = 10 \text{ and } -10$$

Division Tables

$$-7 \div 7 = -1$$

$$14 \div 7 = 2$$

$$-21 \div 7 = -3$$

$$-28 \div 7 = -4$$

$$35 \div -7 = -5$$

$$42 \div 7 = 6$$

$$-49 \div -7 = 7$$

$$-56 \div -7 = 8$$

$$63 \div 7 = 9$$

$$70 \div -7 = -10$$

$$8 \div 8 = 1$$

$$16 \div -8 = -2$$

$$-24 \div -8 = 3$$

$$-32 \div 8 = -4$$

$$40 \div 8 = 5$$

$$-48 \div -8 = 6$$

$$-56 \div -8 = 7$$

$$-64 \div -8 = 8$$

$$72 \div 8 = 9$$

$$80 \div -8 = -10$$

$$-9 \div -9 = 1$$

$$18 \div 9 = 2$$

$$-27 \div -9 = 3$$

$$-36 \div 9 = -4$$

$$45 \div -9 = -5$$

$$54 \div 9 = 6$$

$$-63 \div 9 = -7$$

$$-72 \div -9 = 8$$

$$81 \div 9 = 9$$

$$90 \div -9 = -10$$



Multiply Fractions

WAGOLL:

To **multiply** two fractions together, multiply the **numerators** together and multiply the **denominators** together.

$$\frac{2}{3} \times \frac{3}{4} = \frac{6}{12} = \frac{1}{2}$$

$\frac{6}{12}$ can be simplified to $\frac{1}{2}$, as 6 is the highest common factor (HCF) of 6 and 12.

Key Vocabulary

Mixed Number: a number consisting of an integer and a proper fraction

Improper Fraction: a fraction in which the numerator is greater than the denominator, such as

$$\frac{7}{4}$$

Powers and Roots

Powers

$$(-2)^0 = 1$$

$$(-2)^1 = -2$$

$$(-2)^2 = -2 \times -2 = 4$$

$$(-2)^3 = -2 \times -2 \times -2 = -8$$

$$(-2)^4 = -2 \times -2 \times -2 \times -2 = 16$$

$$(-2)^5 = -2 \times -2 \times -2 \times -2 \times -2 = -32$$

Roots

$\sqrt{16} = 4$ and -4
because $4^2 = 16$ and $(-4)^2 = 16$

$\sqrt[3]{125} = 5$ because $5^3 = 125$

$\sqrt[5]{32} = 2$ because $2^5 = 32$

Dividing Fractions

WAGOLL:

Work out $\frac{2}{3} \div \frac{1}{4}$

To answer this questions we use the acronym **KFC**.

This stands for **KEEP, FLIP, CHANGE**.

KEEP the first fraction. **FLIP** the second fraction. **CHANGE** the division operation to a multiplication operation.

$$\frac{2}{3} \times \frac{4}{1} = \frac{8}{3} = 2\frac{1}{3}$$

If the fraction is improper then it needs to be converted into a mixed number.



Improper Fractions

To convert an improper fraction to a mixed number, work out how many whole numbers there are by dividing the numerator by the denominator. Make the remainder the new numerator and leave the denominator as it was.

Example:

$$\frac{7}{5} = 1 \frac{2}{5}$$

5 goes into 7 once with 2 remaining. Therefore there are $\frac{2}{5}$ remaining which stays as a fraction.

Key Vocabulary

Ascending: Ranked in order of size from lowest to biggest.

Lowest common multiple: the lowest quantity that is a multiple of two or more given quantities.

Basic Powers

$$a \times a = a^2$$

$$a \times a \times a = a^3$$

$$a \times a \times a \times a = a^4$$

$$a \times a \times a \times a \times a = a^5$$

$$a \times a \times a \times a \times a \times a = a^6$$

$$a \times a \times a \times a \times a \times a \times a = a^7$$

$$a \times a = a^8$$

$$a \times a = a^9$$

$$5^2 \times 5 = 5^3$$

$$5^2 \times 5^2 = 5^4$$

$$5^3 \times 5^2 = 5^5$$

$$5^3 \times 5^3 = 5^6$$

$$5^4 \times 5^3 = 5^7$$

$$5^4 \times 5^4 = 5^8$$

$$5^5 \times 5^4 = 5^9$$

$$5^5 \times 5^5 = 5^{10}$$

$$5^6 \times 5^5 = 5^{11}$$

Ordering Fractions

Fractions can be compared by finding equivalent fractions with the same denominator.

Place the following fractions in ascending order: $\frac{3}{4}, \frac{2}{12}, \frac{1}{3}$

12 is the lowest common multiple of 4, 12 and 3 so that is the new denominator. Therefore what we have multiplied with the denominator to get 12 we must multiply the numerator with that same number:

$$(\times 3) \frac{9}{12}, (\times 1) \frac{2}{12}, (\times 4) \frac{4}{12}.$$

If we put them in ascending order we get: $\frac{2}{12}, \frac{4}{12}, \frac{9}{12}$



Mixed Number to Improper Fraction:

To convert a mixed number to an improper fraction we follow a process by doing:

- Multiplying the whole number with the denominator.
- Then add it to the numerator.

$2\frac{1}{4}$ - Multiply the 4 by 2 and then add it to the 1.

- $2\frac{1}{4} = \frac{9}{4}$

Key Vocabulary

Improper fraction: This is when the numerator in a fraction is larger than the denominator.

Common denominator: a common multiple of the denominators of several fractions

Algebraic Tables

$2a \times 1 = 2a$	$3a \times 1a = 3a^2$	$4a \times 1 = 4a$
$2a \times 2a = 4a^2$	$3a \times 2a = 6a^2$	$4a \times 2a = 8a^2$
$2 \times 3a = 6a$	$3 \times 3a = 9a$	$4 \times 3a = 12a$
$2 \times 4a = 8a$	$3ab \times 4a = 12a^2b$	$4a \times 4a = 16a^2$
$2a \times 5a = 10a^2$	$3ab \times 5a = 15a^2b$	$4a \times 5a = 20a^2$
$2a \times 6ab = 12a^2b$	$3ab \times 6ab = 18a^2b^2$	$4a \times 6ab = 24a^2b$
$2ab \times 7 = 14ab$	$3ab \times 7ab = 21a^2b^2$	$4ab \times 7a = 28a^2b$
$2ab \times 8a = 16a^2b$	$3ab \times 8a = 24a^2b$	$4ab \times 8ab = 32a^2b^2$
$2 \times 9ab = 18ab$	$3ab \times 9ab = 27a^2b^2$	$4 \times 9ab = 36ab$
$2 \times 10ab = 20ab$	$3 \times 10ab = 30ab$	$4 \times 10ab = 40ab$

Adding mixed numbers

The first step is to convert the mixed number to an improper fraction.

$$2\frac{1}{4} + \frac{2}{5} = \frac{9}{4} + \frac{2}{5}$$

Now create a **common denominator** by looking for the lowest common multiple of 5 and 4 which is 20. Create equivalent fractions using 20 as the common denominator.

$$\frac{9}{4} + \frac{2}{5} = \frac{45}{20} + \frac{8}{20} = \frac{53}{20} = 2\frac{13}{20}$$

Remember the number you multiply the denominator with – you must use that very same number to multiply the numerator with. Put your answer back into a mixed number and simplify the fraction part if possible.



Multiplying Mixed Numbers:

The first step is to convert the mixed number to an improper fraction:

$$2\frac{1}{4} \times 1\frac{2}{5} = \frac{9}{4} \times \frac{7}{5}$$

Then multiply the two numerators and the two denominators:

$$\frac{9}{4} \times \frac{7}{5} = \frac{63}{20}$$

Put your answer back into a mixed number and simplify the fraction part if possible.

$$\frac{63}{20} = 3\frac{3}{20}$$

Key Vocabulary

Reciprocal: To find the reciprocal of a fraction you need to swap over the numerator with the denominator.

The reciprocal of $\frac{3}{20} = \frac{20}{3}$

Algebraic Tables

$6a \times 1 = 6a$	$7a \times 1a = 7a^2$	$8a \times 1 = 8a$
$6a^2 \times 2a = 12a^3$	$7a \times 2a = 14a^2$	$8a \times 2a = 16a^2$
$6 \times 3a = 18a$	$7 \times 3a = 21a$	$8b \times 3a = 24ab$
$6 \times 4a = 24a$	$7ab \times 4a = 28a^2b$	$8a \times 4a = 32a^2$
$6a^2 \times 5a = 30a^3$	$7ab \times 5a = 35a^2b$	$8a \times 5a = 40a^2$
$6a \times 6ab = 36a^2b$	$7ab \times 6ab = 42a^2b^2$	$8a \times 6ab = 48a^2b$
$6ab \times 7 = 42ab$	$7ab \times 7ab = 49a^2b^2$	$8ab \times 7a = 56a^2b$
$6ab \times 8ab = 48a^2b^2$	$7ab \times 8a = 56a^2b$	$8ab \times 8ab = 64a^2b^2$
$6a \times 9ab = 54a^2b$	$7ab \times 9ab = 63a^2b^2$	$8a \times 9ab = 72a^2b$
$6a \times 10ab = 60a^2b$	$7 \times 10ab = 70ab$	$8b \times 10ab = 80ab^2$

Subtracting Mixed Numbers

The first step is to convert the mixed number to an improper fraction.

$$2\frac{1}{4} - \frac{2}{5} = \frac{9}{4} - \frac{2}{5}$$

Now create a **common denominator** by looking for the lowest common multiple of 5 and 4 which is 20. Create equivalent fractions using 20 as the common denominator.

$$\frac{9}{4} - \frac{2}{5} = \frac{45}{20} - \frac{8}{20} = \frac{38}{20} = 1\frac{18}{20} = 1\frac{9}{10}$$

Remember the number you multiply the denominator with – you must use that very same number to multiply the numerator with. Put your answer back into a mixed number and simplify the fraction part if possible.

Week 1- Learn the key terminology below.

External- A struggle between a character and an outside force.

Internal- A struggle occurring inside a character's mind.

Protagonist- the leading character or one of the major characters in a play, film, novel, etc

Antagonist- An opponent or enemy of the protagonist.

Dystopia- An imagined place which is extremely unpleasant.

Utopia- An imagined place which is perfect and ideal.

Conflict- A serious disagreement or argument.

Insecurity- uncertainty or anxiety about oneself; lack of confidence.

Supernatural- Something which is otherworldly, paranormal or magic. E.g. ghosts.

Society- people living together in a community.

Week 6- Man vs Society (External)

In this conflict, the character(s) fight against the world in which they live. For example, in The Hunger Games, Katniss must fight to change society.

1. Find another example of this conflict in a story or film and explain it.
2. Why would this type of conflict be good in a story?
3. Write a paragraph of a story in which a character is in a dystopian society. How is the world different?

SPaG challenge- Use repetition for effect.

Week 2- Man vs Self (Internal conflict)

When the character's struggles take place in their own mind. A good example of this would be when someone believes they aren't good at a subject and has to fight to overcome their insecurities.

1. Find one example of this conflict in a story or film and explain it.
2. Why would this type of conflict be good in a story?
3. Write a paragraph of a story in which a character thinks they are not good at a subject and needs to summon up the courage to take part in the exam.

SPaG challenge- Use rhetorical questions.

Week 5- Man vs Supernatural

This is a conflict between any supernatural force that is outside the understanding of the main character such as: monsters, aliens or ghosts.

1. Find another example of this conflict in a story or film and explain what happens.
2. Why would this type of conflict be good in a story?
3. Write a paragraph of a story in which a character is in a haunted house. Try not to say the word 'ghost' until the very last line!

SPaG challenge- Begin a sentence with an adverb.

Week 3- Man vs Man (External conflict)

A conflict between the protagonist and the antagonist. An example of this would be Batman and the Joker.

1. Find another example of this conflict in a story or film and explain it.
2. Why would this type of conflict be good in a story?
3. Write a paragraph of a story in which a character (you) has an argument who has treated them badly in school.

SPaG challenge- Use speech marks in a conversation.

Week 4- Man vs Nature (External conflict)

This is where the character struggles with a force of nature such as a natural disaster or surviving in the wilderness. A good example would be Tom Hanks in Castaway when he gets stranded on a desert island and must strive to survive.

1. Find another example of this conflict in a story or film and explain it.
2. Why would this type of conflict be good in a story?
3. Write a paragraph of a story in which a character is caught in a serious storm. Describe the weather in detail.

SPaG challenge- Use sensory description (what you can see hear, touch, smell and taste). 13



Year 8 Art & Design - Knowledge Organiser Term 2

A: Key Skills:

- 1: Colour theory
- 2: Technical drawing techniques
- 3: Observation skills
- 4: Paint consistency techniques

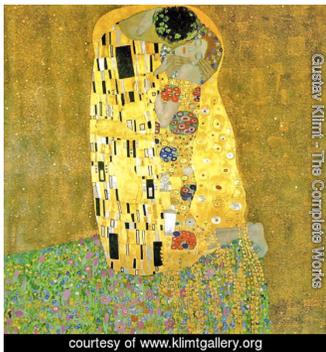
B: Expressing an opinion: Sentence starters

- I feel/believe that
- In my opinion
- It seems to that
- Based on my experience

1: GUSTAV KLIMT:

Gustav Klimt (July 1862 – February 1918) was an Austrian Symbolist painter and one of the most prominent members of the Vienna Art Nouveau movement. As an artist Klimt was most interested in the decorative qualities and surfaces of art.

- Klimt's work is distinguished by the **elegant gold decoration**.
- He uses **strong bold** colours, and creates rich **textures**.
- His **style** is often described as **eccentric** which is **individual** and unforgettable.
- He often painted many **delicate** detailed portraits.
- His style was simplified and **decorative** with **natural patterns**.

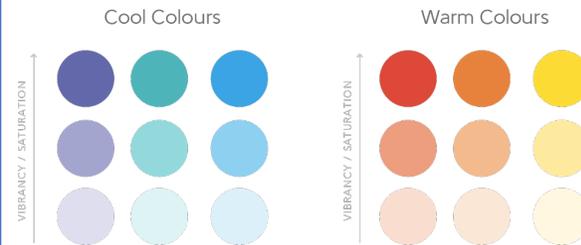


'The Kiss' 1907



'The Tree of Life' 1909

2: Colour Theory & Art Nouveau:



Art Nouveau

Colour is an important feature of Klimt's work, the majority of work uses shimmery gold tones. This was commonly known as his '**Golden Phase**' and his father's occupation as a Gold Smith clearly had a direct influence on his art work. Although he is predominantly renowned for his liberal use of gold, Klimt also often employed a radiant range of colours within his compositions. **Cool tones** (blues/greens) appear to contrast against the **warm tones**.

Art Nouveau is an **ornamental style** of art that flourished between 1890 and 1910 throughout Europe and the United States. Art Nouveau is characterised by its use of a long, sinuous, **organic** line and was employed most often in architecture, interior design, jewellery, glass design, posters and illustration.

Other characteristics of Art Nouveau were a sense of **dynamic energy** and **movement**.

In **architecture**, the whole of the three-dimensional form becomes engulfed in the **organic, linear rhythm**, creating a fusion between **structure** and **ornament**.

3: Literacy: Key Vocabulary

Composition

The arrangement and layout of artwork/objects.

Typography

Refers to the style, arrangement and appearance of lettering.

Abstract

Refers to art that does not attempt to represent an accurate depiction of reality, but instead uses shapes, colour, forms and gestural marks to achieve its effect.

Decorative

Refers to arts and crafts which are both beautiful and functional.

Organic

Refers to shapes that are associated with things from the natural world, like plants and animals.

Detail

Decorative feature in a piece of art work.

Pattern

Can be described as a repeating unit of shape or form in a consistent and regular manner.

7Fa HAZARDS

Hazards

A **hazard** is something that could cause:

- harm to someone
- damage to something
- adverse health effects

For example, concentrated acids are **corrosive**. This is a hazard because acids can damage skin and clothes if they are spilled.

Hazard symbols are used on containers. They are there to:

- indicate the dangers associated with the substance inside
- give information about how to work safely with the substance in the laboratory

Hazard symbols are designed to provide a warning, even if a person cannot understand the writing that goes with them.

International hazard symbol	Hazard description
	Dangerous to the environment: This can cause long-term damage to animal and plant life.
	Toxic: This is poisonous and can cause death if swallowed, breathed in or absorbed through the skin.
	Corrosive: This attacks certain substances like metals, stonework and skin.
	Explosive: Heating may cause an explosion.
	Flammable: These substances catch fire easily.
	Caution: Although similar to toxic and corrosive this is a less serious hazard, e.g. may cause skin irritation.

G | the new international hazard symbols

7Fb INDICATORS

Indicators and the pH scale

Solutions can be acidic, alkaline or neutral:

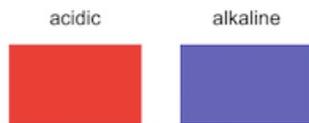
- we get an **acidic** solution when an acid is dissolved in water
- we get an **alkaline** solution when an alkali is dissolved in water
- solutions that are neither acidic nor alkaline are **neutral**

Pure water is neutral, and so is petrol. An **indicator** is a substance that changes colour when it is added to acidic or alkaline solutions. You can prepare homemade indicators from red cabbage or beetroot juice - these will help you see if a solution is acidic or alkaline.

Litmus and universal indicator are two indicators that are commonly used in the laboratory.

Litmus

Litmus indicator is a solution made from **lichen** turns red in acidic solutions and blue in alkaline solutions. It turns purple in neutral solutions. **Litmus paper** is usually more reliable, and comes as red litmus paper and blue litmus paper.



Litmus paper is usually more reliable, and comes as red litmus paper and blue litmus paper.

An acid will turn blue litmus paper red. Whilst an alkaline will turn red litmus paper blue

Other indicators can be made from plants, for example red cabbage can be used to make an indicator that changes colour when mixed with different substances.

7Fc ACIDITY AND ALKALINITY

Universal indicator and the pH scale

Universal indicator is supplied as a solution or as **universal indicator paper**. It is a mixture of several different indicators. Unlike litmus, universal indicator can show us how strongly acidic or alkaline a solution is, not just that the solution is acidic or alkaline. This is measured using the **pH scale**, which runs from pH 0 to pH 14.

Universal indicator has many different colour changes, from red for strongly acidic solutions to dark purple for strongly alkaline solutions. In the middle, neutral pH 7 is indicated by green.



These are the important points about the pH scale:

- neutral solutions are pH 7 exactly
- acidic solutions have pH values less than 7
- alkaline solutions have pH values more than 7
- the closer to pH 0 you go, the more strongly acidic a solution is
- the closer to pH 14 you go, the more strongly alkaline a solution is

7Fd NEUTRALISATION

The pH scale and neutralisation

The pH runs from 0 (strongly acidic) through 7 (neutral) to 14 (strongly alkaline). Salts are made when acids and bases react together.

A chemical reaction happens if you mix together an acid and a base. The reaction is called **neutralisation**. A neutral solution is made if you add just the right amount of acid and base together. A neutral solution has a pH 7 exactly

Neutralisation is an **exothermic** reaction, so the reaction mixture warms up during the reaction.

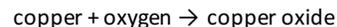
Chemical reactions

Atoms are rearranged in a chemical reaction. The substances that:

- react together are called the **reactants**
- are formed in the reaction are called the **products**

Word equations

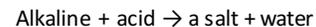
A **word equation** shows the names of each substance involved in a reaction, and must not include any chemical symbols or formulae. For example:



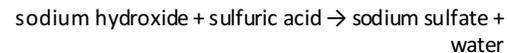
In this reaction, copper and oxygen are the reactants, and copper oxide is the product.

Reaction of acids and alkaline.

Here is the general word equation for what happens when an alkaline is used to neutralise an acids:



The salt made depends on the alkaline and the acid used. For example, sodium sulfate is made if sodium hydroxide and sulfuric acid are used:



Notice that a salt plus water are always produced when metal oxides or metal hydroxides react with acids.

7Fe NEUTRALISATION IN DAILY LIFE

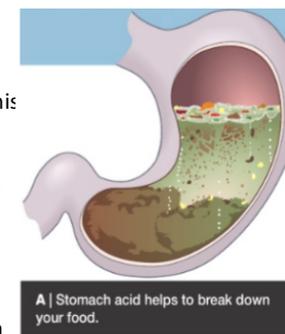
Using neutralisation

Here are some ways neutralisation is used:

1. Farmers use lime (calcium oxide) to neutralise acid soils.



2. Your stomach contains hydrochloric acid, and too much of this causes indigestion. Antacid tablets contain bases such as magnesium hydroxide and magnesium carbonate to neutralise the extra acid.



A | Stomach acid helps to break down your food.



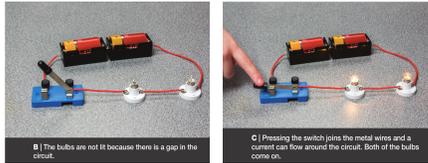
3. Bee stings are acidic. They can be neutralised using baking powder, which contains sodium hydrogen carbonate.

4. Acidic waste gases from some industries are neutralised by sprays of calcium hydroxide before they are released to the atmosphere. This reduces the possibility of creating harmful acid rain.

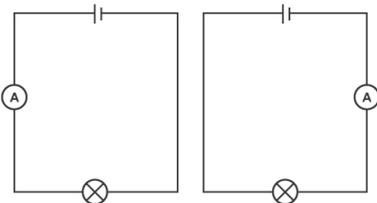
5. Acids can be used to clean metals

1. SWITCHES AND CURRENT

- Some particles carry an **electric charge**. In electric wires these particles are **electrons**.
- We get an electric current when these charged particles move from place to place.
- An **electric current** is a flow of charge, and in a wire this will be a flow of electrons. We need two things for an electric current to flow:
- something to transfer energy to the electrons, such as a battery or power pack
- a complete path for the electrons to flow through (an electric **circuit**).

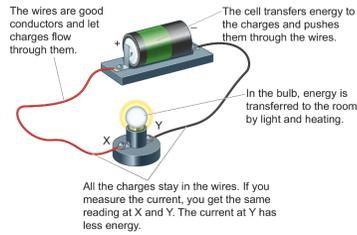


- A device called an **ammeter** is used to measure current. Some types of ammeter have a pointer on a dial, but most have a digital display.
- To measure the current flowing through a component in a circuit, you must connect the ammeter **in series** with it.



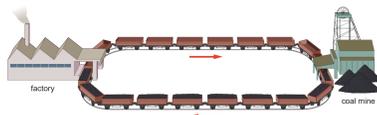
2. MODELS FOR CIRCUITS

- Electricity is the presence or flow of **charged particles**.
- An electric current is the flow of **electrons** around a circuit.
- Static electricity is the **build up** of electrons on an **insulator**.



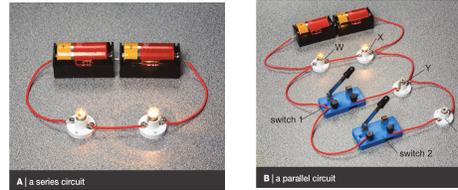
- Everything is made up of tiny particles. These particles may have positive or negative charges. Electricity is the presence or flow of these charged particles.
- All materials contain **negatively-charged** particles called electrons. In metals the electrons are **free to move**, which means they are **good conductors** of electricity. If there is a complete circuit a battery can push electrons all around the circuit. This is an **electric current**. We use electric currents to control and operate devices, including phones, computers and light bulbs.

Diagram C shows a different model for helping you to think about electricity.



3. SERIES AND PARALLEL CIRCUITS

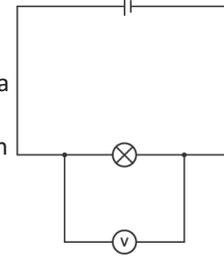
- In a series circuit, if a lamp breaks or a component is disconnected, the circuit is broken and all the components stop working.
- Series circuits are useful if you want a warning that one of the components in the circuit has failed. They also use less wiring than parallel circuits.
- The current is the same everywhere in a series circuit. It does not matter where you put the ammeter, it will give you the same reading.



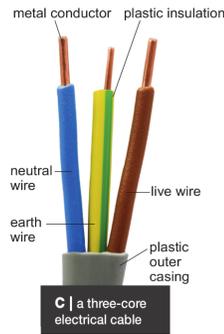
- In a parallel circuit, different components are connected on different branches of the wire. If you follow the circuit diagram from one side of the cell to the other, you can only pass through all the different components if you follow all the branches.
- In a parallel circuit, if a lamp breaks or a component is disconnected from one parallel wire, the components on different branches keep working. Unlike a series circuit, the lamps stay bright if you add more lamps in parallel.
- When two components are connected in parallel, the current is shared between the components. The current is shared when it reaches the branches, then adds again where the branches meet.

4. CHANGING THE CURRENT

- Potential difference is measured using a device called a **voltmeter**. Just like ammeters, some types have a pointer on a dial, but most have a digital display.
- However, unlike an ammeter, you must connect the voltmeter **in parallel** to measure the potential difference across a component in a circuit.



- The wires and the other components in a circuit reduces the flow of charge through them. This is called resistance.
- The unit of **resistance** is the **ohm**, and it has the symbol Ω (an uppercase Greek letter omega).
- For example, a 2 Ω component has a greater resistance than a 1 Ω component, and will reduce the flow of charge through it more effectively.



To find the resistance of a component, you need to measure:

- the potential difference across it
- the current flowing through it

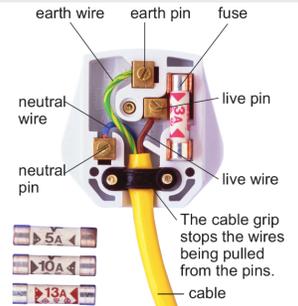
The resistance is the ratio of potential difference to current. We use this equation to calculate resistance:

$$\text{resistance} = \text{potential difference} \div \text{current}$$

5. USING ELECTRICITY

- Electricity is a useful form of energy but it can also be very dangerous. There are lots of ways in which we can be **electrocuted** including:
- touching frayed electrical cables
 - long or overheating cables
 - damaged or incorrectly wired plugs
 - allowing water or wet objects to enter plug sockets or touch frayed cables
 - pushing metal objects into plug sockets

Colour	Wire	Function
Brown	Live	Is held at a voltage of 230 V and provides the current
Blue	Neutral	Completes the circuit
Green and yellow stripes	Earth	A safety wire to stop the appliance becoming live



D | The photo shows different fuses used in the UK.

RE Year 8 Knowledge organiser 1

Key words	Moses 10 Commandments
<p>1. <u>Abrahamic Religions</u> Judaism, Christianity and Islam all come from the teachings of Abraham.</p> <p>2. <u>Promise</u> Assure someone that one will definitely do something or that something will happen.</p> <p>3. <u>Covenant</u> An agreement/ contract between God and Humans.</p> <p>4. <u>Bar/Bat Mitzvah</u> Jewish ceremony celebrating boys/girls becoming the sons/ daughters of the commandments.</p> <p>5. <u>Messiah</u> The promised saviour of the Jewish nation prophesied in the Hebrew Bible</p> <p>6. <u>Decalogues</u> The 10 commandments.</p> <p>7. <u>TaNKa</u> Jewish Holy Book made up of the Torah, Navi, Ketuvim.</p> <p>8. <u>Canaan</u> Modern day Israel.</p> <p>9. <u>Mitzvot</u> Jewish Laws.</p> <p>10. <u>Exodus</u> Moses led the Israelites (Jewish people) out of Egypt to the promised land.</p>	<p>Most scholars date this event around the 13th or 14th century BC. God gave the Decalogue, or 10 Commandments, to the Moses shortly after they left Egypt. The record of the Ten Commandments can be found in the Bible, both in Exodus 20:2-17 and Deuteronomy 5:6-21.</p> <p>God's Law</p> <p>"I am the Lord thy God, which have brought thee out of the land of Egypt, out of the house of bondage.</p> <ol style="list-style-type: none"> 1. Thou shall have no other gods before me. 2. Thou shall not make any images of God, or any likeness of anything that is in heaven above, or that is in the earth beneath. 3. Thou shall not take the name of the Lord thy God in vain. 4. Remember the sabbath day, to keep it holy. Six days shall you labour, and do all your work: But the seventh day is the Sabbath of the Lord thy God: in it you shall not do any work. For six days the Lord made heaven and earth, the sea, and all that in them is, and rested on the seventh day. 5. Honour thy father and thy mother: that thy days may be long upon the land which the Lord thy God giveth thee. 6. Thou shalt not kill. 7. Thou shalt not commit adultery. 8. Thou shalt not steal. 9. Thou shalt not bear false witness against thy neighbour. 10. Thou shalt not covet thy neighbour's house, thou shalt not covet thy neighbour's wife, nor his manservant, nor his maidservant, nor his ox, nor anything that is thy neighbour's."



Dietrich Bonhoeffer (February 4, 1906 – April 9, 1945) was a German religious leader and participant in the resistance movement against Nazism. Bonhoeffer, a Lutheran pastor and theologian, took part in the plots being planned by members of the Abwehr (Military Intelligence Office) to assassinate Hitler. He was arrested, imprisoned, and eventually hanged following the failure of the July 20, 1944, assassination attempt.

Bonhoeffer was born in Breslau, Germany (now Wroclaw, Poland) into a middle to upper class professional family. His father was a psychiatrist in Berlin; his mother home schooled the children. At a very young age, he decided to become a minister. His parents supported his decision and when he was old enough he attended college in Tübingen, received his doctorate in theology from the University of Berlin, and was ordained.

During World War II, Bonhoeffer played a key leadership role in the Confessing Church, which opposed the anti-semitic policies of Adolf Hitler. He was among those who called for wider church resistance to Hitler's treatment of the Jews. While the Confessing Church was not large, it represented a major focus of Christian opposition to the Nazi government in Germany.

In 1939 Bonhoeffer joined a hidden group of high-ranking military officers based in the Military Intelligence Office, who wanted to overthrow the National Socialist regime by killing Hitler. He was arrested in April 1943 after money that was used to help Jews escape to Switzerland was traced to him, and he was charged with conspiracy. He was imprisoned in Berlin for a year and a half. After the unsuccessful July 20 Plot in 1944, connections of Bonhoeffer to the conspirators were discovered, he was moved to a series of prisons and concentration camps ending at Flossenbürg. Here, Dietrich Bonhoeffer was executed by hanging at dawn on 9th April 1945, just three weeks before the liberation of the city. Also hanged for their parts in the conspiracy were his brother Klaus and his brothers-in-law Hans von Dohnanyi and Rüdiger Schleicher.

Dietrich Bonhoeffer is considered a martyr for his faith; he was absolved of any crimes by the German government in the mid-1990s. The calendar of the Episcopal Church in the United States of America commemorates him on April 9, the date on which he was hanged in 1945.

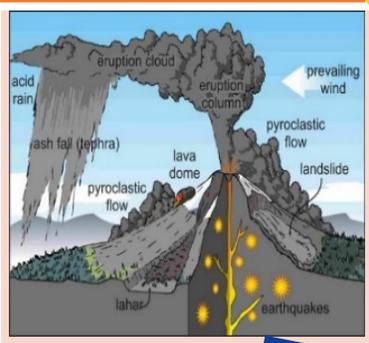


The structure of the Earth

The Crust	Varies in thickness (5-10km) beneath the ocean. Made up of several large plates.
The Mantle	Widest layer (2900km thick). The heat and pressure means the rock is in a liquid state that is in a state of convection.
The Inner and outer Core	Hottest section (5000 degrees). Mostly made of iron and nickel and is 4x denser than the crust. Inner section is solid whereas outer layer is liquid.

Volcanic Hazards

Ash cloud	Small pieces of pulverised rock and glass which are thrown into the atmosphere.
Gas	Sulphur dioxide, water vapour and carbon dioxide come out of the volcano.
Lahar	A volcanic mudflow which usually runs down a valley side on the volcano.
Pyroclastic flow	A fast moving current of super-heated gas and ash (1000°C). They travel at 450mph.
Volcanic bomb	A thick (viscous) lava fragment that is ejected from the volcano.



Managing Volcanic Eruptions

Warning signs		Monitoring techniques	
Small earthquakes are caused as magma rises up.		Seismometers are used to detect earthquakes.	
Temperatures around the volcano rise as activity increases.		Thermal imaging and satellite cameras can be used to detect heat around a volcano.	
When a volcano is close to erupting it starts to release gases.		Gas samples may be taken and chemical sensors used to measure sulphur levels.	
Preparation			
Creating an exclusion zone around the volcano.		Being ready and able to evacuate residents.	
Having an emergency supply of basic provisions, such as food		Trained emergency services and a good communication system.	

Convection Currents

The crust is divided into tectonic plates which are moving due to convection currents in the mantle.

- Radioactive decay of some of the elements in the core and mantle generate a lot of heat.
- When lower parts of the mantle molten rock (Magma) heat up they become **less dense** and **slowly rise**.
- As they move towards the top they cool down, become **more dense** and **slowly sink**.
- These **circular movements** of semi-molten rock are **convection currents**
- Convection currents create **drag** on the base of the tectonic plates and this causes them to move.

LIC -CS: Haiti Earthquake 2010



Causes On a conservative plate margin, involving the Caribbean & North American plates. The magnitude 7.0 earthquake was only 15 miles from the capital Port au Prince. With a very shallow focus of 13km deep .	
Effects 230,000 people died and 3 million affected. Many emotionally affected . 250,000 homes collapsed or were damaged. All 8 hospitals in capital city were destroyed.	Management Individuals tried to recover people. Many countries responded with appeals or rescue teams . Heavily relied on international aid , e.g. \$330 million from the EU. 98% of rubble remained after 6 months .

Earthquake Management



PREDICTING

Methods include:

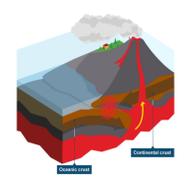
- Satellite surveying (tracks changes in the earth's surface)
- Laser reflector (surveys movement across fault lines)
- Radon gas sensor (radon gas is released when plates move so this finds that)
- Seismometer
- Water table level (water levels fluctuate before an earthquake).
- Scientists also use seismic records to predict when the next event will occur.

Unit 1a The Challenges of Natural Hazards



Types of Plate Margins

Destructive Plate Margin
When the denser plate subducts beneath the other, friction causes it to melt and become molten magma . The magma forces its way up to the surface to form a volcano. This margin is also responsible for devastating earthquakes .
Constructive Plate Margin
Here two plates are moving apart causing new magma to reach the surface through the gap. Volcanoes formed along this crack cause a submarine mountain range such as those in the Mid Atlantic Ridge .
Conservative Plate Margin
A conservative plate boundary occurs where plates slide past each other in opposite directions, or in the same direction but at different speeds. This is responsible for earthquakes such as the ones happening along the San Andreas Fault, USA.



What is a Natural Hazard

A natural hazard is a natural process which could cause death, injury or disruption to humans, property and possessions.

Geological Hazard	Meteorological Hazard
These are hazards caused by land and tectonic processes.	These are hazards caused by weather and climate.

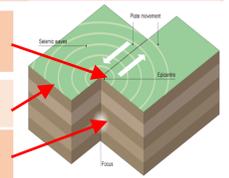
Causes of Earthquakes

Earthquakes are caused when two plates become **locked** causing **friction** to build up. From this **stress**, the **pressure** will eventually be released, triggering the plates to move into a new position. This movement causes energy in the form of **seismic waves**, to travel from the **focus** towards the **epicentre**. As a result, the crust vibrates triggering an earthquake.

The point directly above the focus, where the seismic waves reach first, is called the **EPICENTRE**.

SEISMIC WAVES (energy waves) travel out from the focus.

The point at which pressure is released is called the **FOCUS**.



PROTECTION

You can't stop earthquakes, so earthquake-prone regions follow these three methods to reduce potential damage:

- Building earthquake-resistant buildings
- Raising public awareness
- Improving earthquake prediction

HIC -CS: New Zealand Earthquake 2011



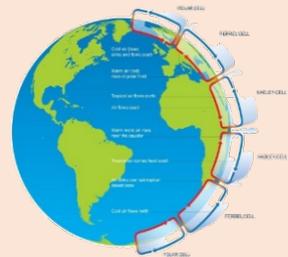
Causes
New Zealand is located on the plate boundary between the Australian and Pacific plates. The epicentre was **10km away from Christchurch**; the second highest populated city in New Zealand. The earthquake was **magnitude 6.3 on the Richter scale**

Effects •Economic cost = NZ\$ 3.5billion •181 people were killed in total •Liquefaction produced 400,000 tonnes of silt •Land that was damaged by liquefaction cannot be built on again	Management A full emergency response plan was in place within 2 hours. Hospitals survived the earthquake and treated those who were injured. 27,000 toilets were distributed. Bottled water was provided.
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Global pattern of air circulation

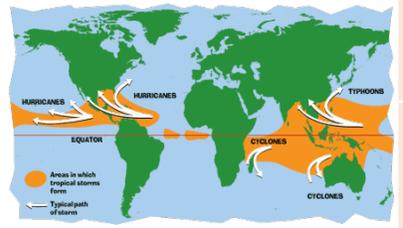
Atmospheric circulation is the large-scale movement of air by which heat is distributed on the surface of the Earth.

Hadley cell	Largest cell which extends from the Equator to between 30° to 40° north & south.
Ferrel cell	Middle cell where air flows poleward between 60° & 70° latitude.
Polar cell	Smallest & weakness cell that occurs from the poles to the Ferrel cell.



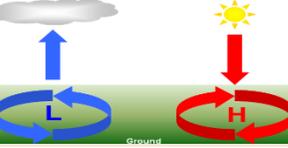
Distribution of Tropical Storms.

They are known by many names, including hurricanes (North America), cyclones (India) and typhoons (Japan and East Asia). They all occur in a band that lies roughly 5-15° either side of the Equator.



High and Low Pressure

Low Pressure	High Pressure
Caused by hot air rising. Causes stormy, cloudy weather.	Caused by cold air sinking. Causes clear and calm weather.



Formation of Tropical Storms

- The sun's rays heats large areas of ocean in the summer and autumn. This causes **warm, moist air** to rise over the particular spots
- Once the **temperature is 27°**, the rising warm moist air leads to a **low pressure**. This eventually turns into a thunderstorm. This causes air to be sucked in from the **trade winds**.
- With trade winds blowing in the opposite direction and the rotation of earth involved (Coriolis effect), the thunderstorm will eventually start to **spin**.
- When the storm begins to **spin faster than 74mph**, a tropical storm (such as a hurricane) is officially born.
- With the tropical storm growing in power, **more cool air sinks** in the centre of the storm, creating calm, clear condition called the **eye of the storm**.
- When the tropical storm hits land, it **loses its energy source** (the warm ocean) and it begins to lose strength. Eventually it will 'blow itself out'.

Changing pattern of Tropical Storms

Scientists believe that global warming is having an impact on the frequency and strength of tropical storms. This may be due to an increase in ocean temperatures.

Management of Tropical Storms

Protection Preparing for a tropical storm may involve construction projects that will improve protection.	Aid Aid involves assisting after the storm, commonly in LIDs.
Development The scale of the impacts depends on the whether the country has the resources cope with the storm.	Planning Involves getting people and the emergency services ready to deal with the impacts.
Prediction Constant monitoring can help to give advanced warning of a tropical storm	Education Teaching people about what to do in a tropical storm.



Primary Effects of Tropical Storms

- The intense winds of tropical storms can destroy whole **communities, buildings** and **communication networks**.
- As well as their own destructive energy, the winds can generate abnormally high waves called **storm surges**.
- Sometimes the most destructive elements of a storm are these subsequent **high seas and flooding** they cause to coastal areas.



Secondary Effects of Tropical Storms

- People are **left homeless**, which can cause distress, poverty and ill health due to lack of shelter.
- Shortage of clean water** and **lack of proper sanitation** makes it easier for diseases to spread.
- Businesses are damaged** or destroyed causing employment.
- Shortage of food as **crops are damaged**.

Case Study: Hurricane Katrina 2005



Causes A tropical storm formed over the Atlantic Ocean in August 2005. As it travelled eastwards towards Florida, it reached Hurricane Category 3. It was Category 4 when it hit New Orleans.	Effects 2500 people dead or missing. People taking cover in the Superdome were left without food, water and sanitation. Looting of shops took place, police adopted shoot-to-kill	Management Early warnings given to evacuate – those with cars did, 100,000 poor were left behind 220 miles of flood walls rebuilt, but won't be strong enough for Category 5 hurricane.
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Case Study: Somerset Floods 2013-2014



Causes
A deep depression over the Atlantic with air pressure of 936mb brought storm conditions to Somerset, with the highest rainfall recorded in one month since 1910.

Effects 600 houses flooded and 16 farms evacuated 50,000 homes without electricity. Water contaminated with petrol and sewage destroyed crops and put farmers out of business.	Management Boats provided by RNLI were used to taxi people to and from work. 8km of River Parratt dredged in March 2014. Height of A327 road has been increased.
--	--



What is Climate Change?

Climate change is a large-scale, long-term shift in the planet's weather patterns or average temperatures. Earth has had tropical climates and ice ages many times in its 4.5 billion years.

Recent Evidence for climate change.

Global temperature	Average global temperatures have increased by more than 0.6°C since 1950 .
Ice sheets & glaciers	Many of the world's glaciers and ice sheets are melting. E.g. the Arctic sea ice has declined by 10% in 30 years .
Sea Level Change	Average global sea level has risen by 10-20cms in the past 100 years. This is due to the additional water from ice and thermal expansion.



Enhanced Greenhouse Effect

Recently there has been an increase in **humans burning fossil fuels** for energy. These fuels (gas, coal and oil) emit **greenhouse gases**. This is making the Earth's atmosphere thicker, therefore trapping more solar radiation and causing **less to be reflected**. As a result, the Earth is becoming warmer.

Evidence of natural change

Orbital Changes	Some argue that climate change is linked to how the Earth orbits the Sun, and the way it wobbles and tilts as it does it.
Sun Spots	Dark spots on the Sun are called Sun spots. They increase the amount of energy Earth receives from the Sun.
Volcanic Eruptions	Volcanoes release large amounts of dust containing gases . These can block sunlight and results in cooler temperatures.

Managing Climate Change

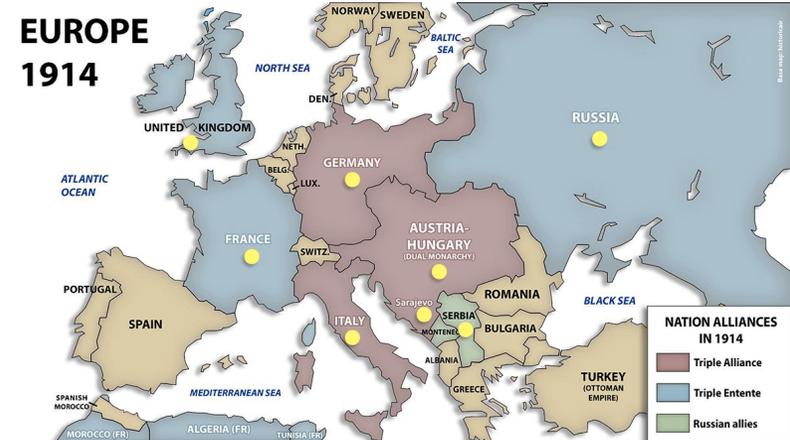
Carbon Capture This involves new technology designed to reduce climate change.	Planting Trees Planting trees increase the amount of carbon is absorbed from atmosphere.
International Agreements Countries aim to cut emissions by signing international deals and by setting targets.	Renewable Energy Replacing fossil fuels based energy with clean/natural sources of energy.



Year 8 History Knowledge Organiser Section A: The causes and outbreak of World War One

Key Terms / Events (1-14)	
1. Assassination	The act of killing an important person for political reasons e.g. the assassination of Archduke Franz Ferdinand.
2. Schlieffen Plan	Germany's plan to attack and quickly defeat France, before turning their forces to face Russia. The Germans thought the Russians would be slow to mobilise their troops.
3. Neutrality	To stay out of a military conflict e.g. Belgium.
4. Tension	A development of conflict between difference countries.
5. Alliance	Countries joined together to improve their own position.
6. Nationalism	Support for your own nation. An intense form of patriotism and the idea that your country is supreme.
7. Imperialism	The policy of extending a country's influence and power by taking over other countries (building an empire).
8. Militarism	The belief that a country should have a strong military and be prepared to use it.
9. Arms Race	A competition between countries to develop weapons.
10. Navy	The part of the military which conducts operations at sea.
11. Empire	A group of countries that is ruled by another country (each country within an empire is called a colony).
12. Triple Alliance (1882)	Also known as the Central Powers. This was an alliance between Germany, Austria-Hungary and Italy.
13. Triple Entente (1907)	The alliance between Britain, France and Russia before and during WWI
14. Treaty of London, 1839	A treaty that guaranteed the neutrality of Belgium. Used by Britain as their justification for declaring war on Germany after the invasion of Belgium.

Key People (15-19)	
15. Kaiser Wilhelm II	Emperor of Germany from 1888-1918. He was very militaristic, and wanted Germany to build their empire.
16. Archduke Franz Ferdinand	Heir to the Austro-Hungarian throne. Assassinated in Sarajevo on 28 th June 1914 which sparked the outbreak of WWI.
17. Gavrilo Princip	Assassinated Archduke Franz Ferdinand on 28 th June 1914.
18. Black Hand	The group allegedly involved in the assassination of Franz Ferdinand.
19. Count Schlieffen	German military strategist who came up with the Schlieffen Plan.



20. 1882 – The formation of the Triple Alliance (Germany, Austria-Hungary, Italy).

21. 1905-06 – First Moroccan Crisis. The Kaiser was embarrassed. Britain/France showed their solidarity.

22. 1906 Start of the naval race between Britain and Germany.

23. 1908 – Balkan Crisis. Austria took over territory and Germany supported Austria. Made Austria (too) confident of German support

24. 1911 – Second Moroccan Crisis. Increased tension between Germany and Britain/France.

25. 1912-1913 – Balkan Wars. Serbia emerged from these wars as the most powerful country in the Balkans. This concerned Austria.

26. 28th June 1914. Assassination of Archduke Franz Ferdinand in Sarajevo.

27. July-August Crisis 1914. The system of alliances led to a global war. Germany declared war on Russia and France, and invaded Belgium. Britain declared war on Germany to protect Belgium.

Year 8 Knowledge Organiser Section B: World War One

Key Terms / Events	
1. Imperialism	Increasing a country's power by taking over other territories. Building up an empire.
2. Militarism	The belief that a country should have a strong military and be prepared to use it.
3. Alliances	An agreement between countries to work together/co-operate with each other.
4. Nationalism	Patriotism. The belief in the strength of your country. Specifically, believing that your country is better than others.
5. Triple Entente	An alliance between Britain, France, and Russia. This friendship agreement was signed in 1907.
6. Triple Alliance	An alliance between Germany, Austria-Hungary, and Italy, formed in 1882.
7. Schlieffen Plan	Germany's plan to go through Belgium to defeat France quickly, followed by sending German troops to face Russia in the East.
8. Treaty of London, 1839	Treaty through which Britain promised to protect Belgium's independence. This brought Britain into WWI when Germany invaded Belgium.
9. Propaganda	Information (often exaggerated or misleading) that is used to persuade you to believe or do something. See Image 1.
10. Western Front	The main location of fighting during WWI. Predominantly located in France and Belgium.
11. Trenches	The majority of the First World War was fought in trenches. They were dug into the ground in order to protect soldiers from enemy fire.
12. No man's land	The area between the two opposing front line trenches
13. Stalemate	A situation in war where neither side can win a clear victory. When in stalemate, the war becomes long and slow. WWI is an example of this.
14. Battle of the Somme	A battle of the First World War fought between the armies of Britain and France against Germany. It took place between 1 st July and the 18 th November 1916.
15. Casualties	A person that is killed or injured in war.
16. Armistice	Signed on the 11 th November 1918. It ended the fighting in WWI – Germany surrendered.
17. Treaty of Versailles	The treaty that decided the punishments that Germany faced at the end of the First World War. Germany had to: accept blame for starting the war, pay reparations, had land taken off them, and had their military weakened.

Key People	
18. Archduke Franz Ferdinand	Heir to the Austrian throne in 1914. Assassinated on 28 th June 1914.
19. Gavrilo Princip	The man who killed Archduke Franz Ferdinand.
20. Lord Kitchener	Secretary of State for War. Responsible for organising the huge volunteer army.
21. General Douglas Haig	Commander of British Forces (BEF) on the Western Front.

Image 1. Recruitment poster



22. 28th June 1914
Archduke Franz Ferdinand assassinated in Sarajevo.

23. July-August 1914
The 'July Crisis'. The chain of events that led to the outbreak of the First World War.

24. September-November 1914
Germany tried to take Paris and the North Sea ports. By the end of 1914, fighting reached a **stalemate**.

25. 1916
The Battle of Verdun and the Battle of the Somme. Huge losses were suffered by both sides.

26. 1917
Russia surrendered, but the USA entered the war on the side of Britain and France.

27. 1918
The Germans launched a massive attack on the Western Front in March. The Allies counter-attacked in August. By October, the Germans were in full retreat.

28. 11th November 1918
The Armistice was signed. Germany surrendered.

Homework 1

Read the text. Copy out the sentences 1-8 and say if they are True or False.



¡Hola! Me llamo Juan. Vivo en Sevilla, en el sur de España. Me gusta mucho vivir aquí porque es muy interesante. Sevilla es una ciudad muy grande e histórica. También es muy, muy bonita. Por eso hay muchos turistas.

Hay muchos museos diferentes y hay plazas bonitas. También hay una plaza de toros - la Real Maestranza. Hay muchas tiendas en el centro y hay un estadio y un polideportivo, por supuesto.

Hay un parque muy grande - el parque de María Luisa. Hay muchos palacios, por ejemplo el palacio del Alcázar. Al lado hay una torre histórica: la Giralda. Me gusta mucho Sevilla. Es una ciudad estupenda. ¿Vas a visitarla?



La Real Maestranza



El parque de María Luisa



La Giralda - torre histórica

aquí = here
por eso = because of this
por supuesto = of course
una torre = a tower

Ejemplo: 1 F

- 1 Sevilla es un pueblo.
- 2 Sevilla es muy histórica.
- 3 Sevilla es una ciudad fea.
- 4 No hay muchos turistas.
- 5 Hay una plaza de toros importante.
- 6 Hay muchas tiendas en Sevilla.
- 7 Hay un parque. Se llama el parque de la Reina Sofía.
- 8 No hay muchos palacios en Sevilla.

Homework 2



Copy out the words in Spanish and English. Learn the words thoroughly.

Los dibujos animados

Los concursos

Los programas de deportes

Las telenovelas

Las series de policías

Los documentales

Los anuncios

Las noticias

El pronóstico del tiempo

La tele-realidad

Cartoons

Game shows

Sports programmes

Soaps

Police series

Documentaries

Adverts

News

Weather forecast

Reality TV

Homework 3



Copy out the vocabulary in Spanish and English and learn it carefully.

Una película ...

de dibujos animados

policíaca

de amor / romántica

cómica

de ciencia ficción

de acción

de terror / horror

de guerra

del oeste / de vaqueros

de artes marciales

musical

histórica

de aventura

animated film

police/detective film

love / romantic film

comedy film

science fiction film

action film

terror / horror film

war film

western / cowboy film

martial arts

musical film

historical film

adventure film



Computer Science Knowledge Organiser

Cyber Security



Keywords: Online Threats

Malware	A term used to refer to a variety of forms of hostile or intrusive software, including computer viruses and other malicious programs.
Virus	Malicious computer programs that are often sent as an email attachment or a download with the intent of infecting your computer, as well as the computers of everyone in your contact list.
Trojan	A malicious program that is disguised as, or embedded within, legitimate software. It is an executable file that will install itself and run automatically once it's downloaded.
Worm	Goes to work on its own without attaching itself to files or programs. It sends itself to other computers in a network and internet.
Ransomware	A type of malware that restricts access to your computer or your files and displays a message that demands payment to unlock.
Spyware	Software that collects personal information about you without you knowing. Usually accidentally installed from free downloads.
Phishing	A phishing attack happens when someone tries to trick you into sharing personal information online by sending emails that look legitimate.
Spear phishing	A phishing scam where an attacker targets you more precisely by using pieces of your own personal information.
Pharming	A website that is created to look like it comes from a legitimate source. It convinces the user it is real by using a similar URL to the real website.
Botnets	Also known as 'zombies'. A collection of software robots, or 'bots', that creates an army of infected computers (known as 'zombies') that are remotely controlled by the originator.

Keywords: Hackers

White Hat Hacker	Ethical hackers look for vulnerabilities in software or hardware that might allow illegal access to a system. A company employs them to do this.
Grey Hat Hacker	Similar to white hat except these hackers do not have the permission of the company to look for security vulnerabilities.
Black Hat Hacker	A black hat hacker is a person who attempts to find computer security vulnerabilities and exploit them for personal financial gain or other malicious reasons.
Brute Force Attack	An activity which involves repetitive attempts of trying various password combinations to break into any website. It is usually involves a computer program to do this quickly and with millions of possible passwords.
DDOS	Distributed Denial of Service Attack - is an attempt to make an online service unavailable by overwhelming it with traffic from multiple sources. This is usually done with 'bot' or 'zombie' computers.
Social Engineering	The art of manipulating people so they give up confidential information. It often involves getting people to break normal security procedures in order to gain unauthorized access.

Keywords: Protect Your Stuff

Privacy	Protecting your personal information and that of others.
Security	Using good habits for securing hardware and software.
Two-step verification	A security process where logging in to a service requires two steps. For example, you may have to enter your password and enter a code that was sent to your mobile phone.
Firewall	A network security device that monitors incoming and outgoing network traffic and decides whether to allow or block specific traffic based on a defined set of security rules.
Penetration Testing	A systematic process of probing for vulnerabilities in applications and networks. It is essentially a controlled form of hacking in which the 'attackers' operate on behalf of the company to find the sorts of weaknesses that criminals exploit.
Network Forensics	Investigation and analysis of all traffic going across a network suspected of use in a cyber crime. A company can pinpoint the origin of an attack by looking at network data.
User Access Levels	Different levels of access for users on a computer system.
Encryption	The process of encoding a message or information so that only authorized parties have access.



PE Knowledge Organiser

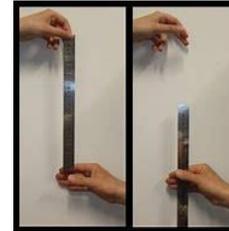
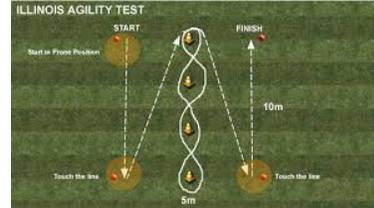
Components of Fitness

Coordination is the ability of a person to move more than 2 body parts efficiently and smoothly at the same time e.g. performing a dance routine or performing a shot in tennis.
A test that can be performed to measure coordination is the **alternate hand catch test**.

Power is the ability to do strength performances quickly. $\text{Power} = \text{Strength} \times \text{Speed}$, e.g. throwing a javelin.
A test that can be performed to measure power is the **vertical jump test**.

Speed is the rate at which a sportsperson can cover a specified distance e.g. running 100m in 10 seconds.
A test that can be performed to measure speed is the **30m sprint test**.

Balance is the ability to keep the centre of mass over the base of support e.g. staying on a skateboard and not falling off.
A test that can be performed to measure balance is the **stork stand test**.



Reaction Time is the length of time taken for a person to respond to a given stimulus or event e.g. reacting to the starting pistol at the start of a 100m race or starting movement to return a serve in table tennis.
A test that can be performed to measure reaction time is the **ruler drop test**.

Fitness tests measure different components of fitness. The information these tests give you help to identify **strengths and weaknesses** in your performance. **Goals** can then be set and you can create your own **training programme** based in this data. You can test yourself every couple of weeks and the results can be used to monitor your progress as you train. However, there are limitations to performing some tests as they don't replicate the same conditions of a **competitive situation**.

Agility is the ability to change position quickly whilst keeping your body under control e.g. moving away from a defender to avoiding getting tackled in rugby.
A test that can be performed to measure agility is the **Illinois agility test**.

Year 8 – Design and Technology DH2019

Knowledge Organiser

1. Key Words

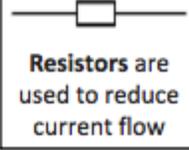
Understand and be able to spell the words below.

Thermoplastic
 Thermosetting Plastics
 Polymer
 Finite
 Sustainable
 Biodegradable
 3D Printing
 Safety
 Computer Numerically Controlled (CNC)
 Computer Aided Design (CAD)
 Computer Aided Manufacture (CAM)
 Sketch
 Isometric
 Engineering Drawing
 Render
 Dimension
 Specification
 Design
 Revolve
 Extrude
 Assemble
 Deform
 Chamfer
 Accuracy
 Modify
 Evaluate

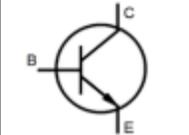


2. Remember the Safety Rules: Tie back long hair to prevent entanglement. Wear an apron to protect your clothing.
 Roll up long sleeves to prevent entanglement.
 Stack Chairs to prevent tripping. Wear Goggles on Machines to protect your eyes.
 One at a time on machines.

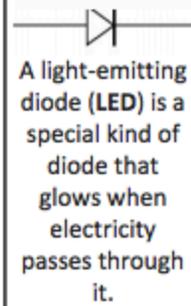
3.



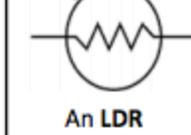
Resistors are used to reduce current flow



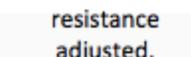
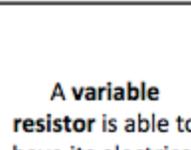
A Transistor works either as an amplifier or a switch



A light-emitting diode (LED) is a special kind of diode that glows when electricity passes through it.



An LDR has a (variable) resistance that changes with the light intensity that falls upon it.



A variable resistor is able to have its electrical resistance adjusted.

A Printed Circuit Board or PCB is essentially a board that connects electronic components.

Solder is a metal alloy commonly comprised of tin or lead that melts when heated and allows a permanent connection to be made between electronic parts or wires.

A soldering iron is used in soldering. It supplies heat to melt solder so that it can flow into the joint between two workpieces.

A polarised component can only be connected to a circuit in one direction. A LED is a polarised component. The positive side is called the anode, and the negative one is called the cathode.



4. A Tennon saw:
Used for making straight cuts.

A Bench Hook:
Used for supporting wood when sawing.

Try Square:
Used for marking and measuring.

Glass Paper:
An abrasive paper used for smoothing rough surfaces on wood.

The Laser Cutter is an example of a CNC machine.



Pillar Drill:
Used for drilling holes in various materials.



Band Facer:
Used for sanding wood.

Computer Aided Manufacture (CAM) uses saved CAD files to make new products or components as prototypes through the use of Computer Numerically Control (CNC) machinery.

5. Isometric projection is a method for visually representing three-dimensional objects.

Computer Aided Design (CAD) is the process of using specialist software to create designs for new products or components.



Red lines or fill areas engrave.

Black lines or fill areas cut.

6. Finish:
Complete the manufacture of a product by giving it an attractive or protective surface appearance.

7. **Softwoods** come from coniferous trees which are evergreen, needle-leaved, cone-bearing trees. Examples include pine and spruce.

Hardwoods come from broad-leaved, deciduous trees which tend to lose their leaves in autumn/winter. Examples include, oak and beech.



Year 8 – Design and Technology - CAD

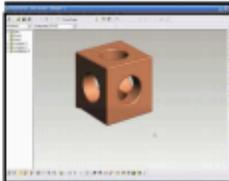
A **design specification** is a document that details the specific requirements of the product to ensure that it is suitable/fit for purpose.

Knowledge Organiser

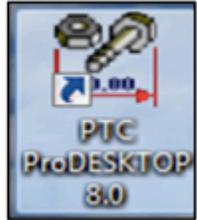
1. Key Words

Understand and be able to spell the words below:

Thermoplastic
Thermosetting Plastics
Polymer
Finite
Sustainable
Biodegradable
3D Printing
Safety
Computer Numerically Controlled (CNC)
Computer Aided Design (CAD)
Computer Aided Manufacture (CAM)
Sketch
Isometric
Engineering Drawing
Render
Dimension
Specification
Design
Revolve
Extrude
Assemble
Deform
Chamfer
Accuracy
Modify
Evaluate



2. **Computer Aided Design (CAD)** is the process of using specialist software to create designs for new products or components.



Computer Aided Manufacture (CAM) uses saved CAD files to make new products or components as prototypes through the use of Computer Numerically Control (CNC) machinery.

3. 3D Printing

The action or process of making a physical object from a three-dimensional digital model, by laying down many thin layers of a material in succession.

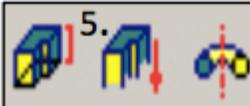
3D printing is used in manufacturing, medicine, architecture, art and design.

Understand and be able to explain the advantages of disadvantages of using CAD/CAM.

4. CAD Advantages. Can be more accurate than hand-drawn designs - it reduces human error. You can save and edit ideas, which makes it easier and cheaper to modify your design as you go along. You can modify existing ideas, which saves time.

CAM Advantages. Is faster because machining speeds are higher. greater accuracy. greater consistency: every finished product is the same.

Disadvantages of CAD/CAM
The software/equipment itself is expensive so initial costs are high. Need to be trained how to use the software and machinery.



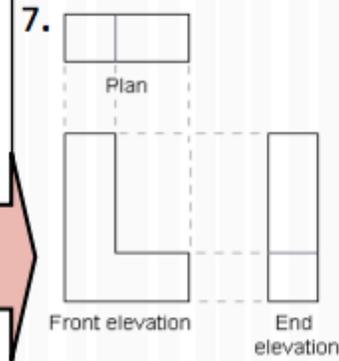
Remember the Pro Desktop icons and drawing tools. Remember to select face, go to work plane and select new sketch when you want to add or remove material to/from your design.

6. An engineering drawing is a type of technical drawing used to define the requirements for engineering products or components. Typically, the purpose of an engineering drawing is to clearly and accurately capture all geometric features of a product or component so that a manufacturer or engineer can produce the required item. It may also describe the process of making the item.

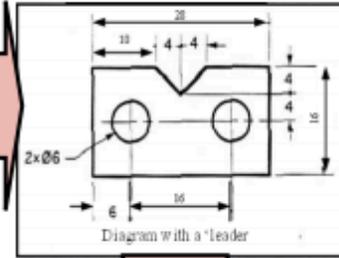
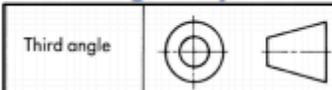


Rendering means the process of adding colour, shading, and texturing to an image. It is used in CAD to make a drawing look realistic.

STL (an abbreviation of "stereolithography") is a file format that allows a CAD drawing to be saved and manufactured using CAM or 3D Printing.



Third Angle Projection



The purpose of dimensioning is to provide a clear and complete description of an object.

A complete set of dimensions will permit only one interpretation needed to construct the part.

Tools used for metal

8.



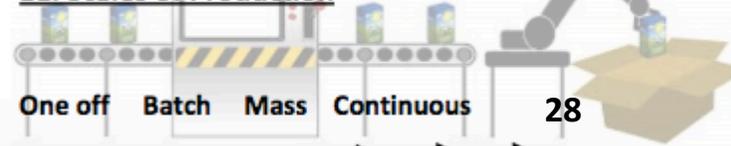
9. **Ferrous Metal** – Contain Iron and are magnetic. They will rust easily.

Non Ferrous Metal – Do not contain iron and are not magnetic- They are more resistant to corrosion.

Alloys are a mixture of two or more metals.

10. Metals are made from **ores**. These are extracted from the earth through **mining**; they are then refined (often via smelting) to extract the valuable element or elements.

11. Scales of Production



Year 8 – Food Technology Knowledge Organiser

1. Key Words

Understand and be able to spell the words below:

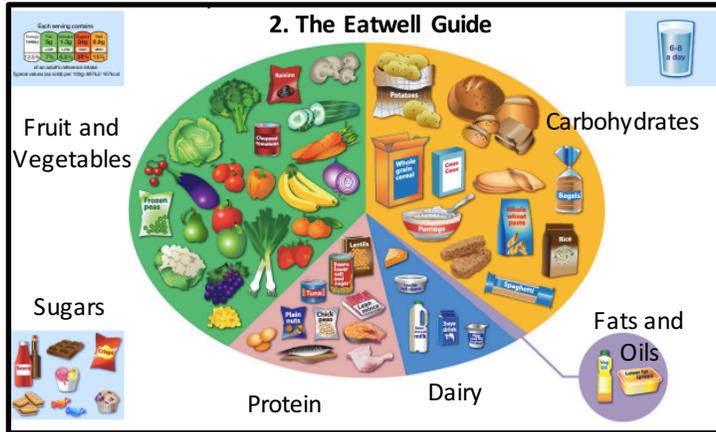
Nutrition
 Heathy Eating
 Eatwell Guide
 Balanced Diet
 Cooking
 Baking
 Chopping
 Slicing
 Health and Safety
 Food Hygiene
 Oven
 Hob
 Designing
 Evaluate
 Sensory
 Analysis
 Seasonality
 Ingredients
 Vegetables
 Savory
 Food Provenance
 Portion Size
 Convenience
 Foods
 Vitamins
 Minerals
 Technique

7. Star Profiling

Sensory Analysis

The scientific way of analysing and measuring human responses to food and drink.

2. The Eatwell Guide



4 Cooking methods



Stir frying – vegetables, meat, fish and chicken are cut into strips and cooked quickly in a little oil



Stewing – a slow method of cooking meat and vegetables in a small amount of liquid on the hob. Low in fat



Boiling – a moist method of cooking in boiling/simmering water used for root vegetables that are low in water soluble vitamins so the nutritional value is not affected by cooking.



Poaching – fish, eggs and fruit can be poached in a minimal amount of water and no fat is added



Steaming - where the food is cooked by the steam from boiling water so it is not placed in the water but in a steamer. Fat is not added when steaming so this is a no fat method.



Baking – cooking in the oven without adding fat e.g. baked potato in it's jacket, baking cakes



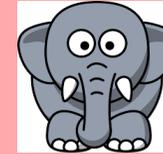
Grilling – a fast method of cooking meat under a hot grill (salamander), the fat drains away as it melts

3. Macronutrient and Micronutrient

Macro nutrients are our main **energy providers** and therefore we need a **lot** of them to help our bodies move and **function** throughout the day.

Macro nutrients include:

- Carbohydrates
- Protein
- Fats



Micro nutrients are only needed in small amounts as some of them the body can **produce itself**. Micro nutrients are needed to maintain normal **cell function** on a smaller scale, but they are **just as important** as macro nutrients as a lack of some micro nutrients can lead to **serious health implications**.

Micro nutrients include:

- Vitamins
- Minerals



5. Health and Safety

- Wear a clean apron
- Wash your hands
- Tie back long hair
- Keep food preparation surfaces clean
- Remove nail varnish
- Store food appropriately.
- Do not run
- Wipe up food spills immediately.
- Handle knives and other sharp equipment with care.
- Turn handles of saucepans away from the front of the stove when cooking.
- Wash kitchen and eating utensils after use in hot soapy water.
- Dry equipment properly
- Put away equipment
- Use oven gloves when removing items from the oven

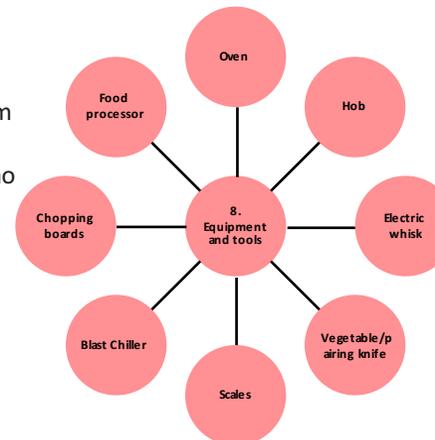
6. Knife handling skills & Colour coding chopping boards



Bridge grip



Claw grip



PREVENT CROSS CONTAMINATION	
USE CORRECT COLOUR CODED CHOPPING BOARDS & KNIVES	
RAW MEAT	Red
RAW FISH	Blue
COOKED MEATS	Yellow
SALADS & FRUITS	Green
VEGETABLES	Brown
DAIRY PRODUCTS	White