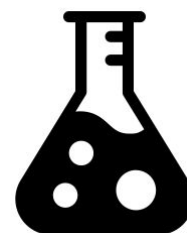
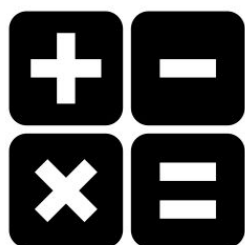
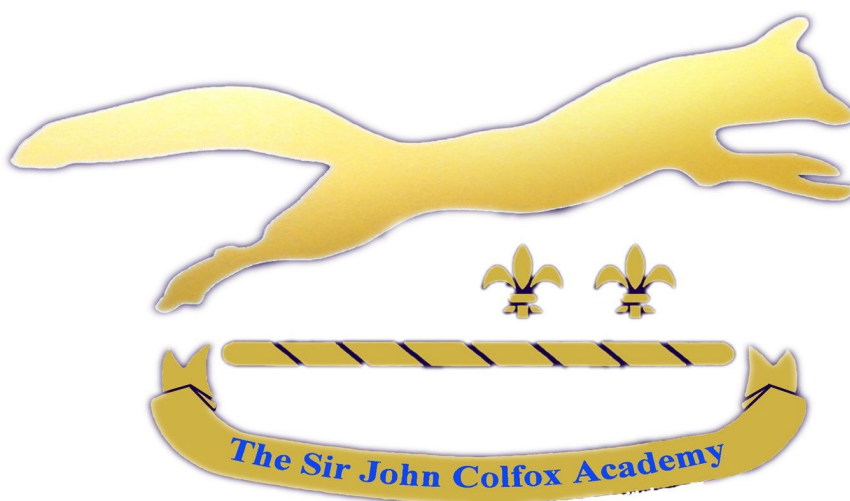


The Sir John Colfox Academy Homework Booklet

Year 8

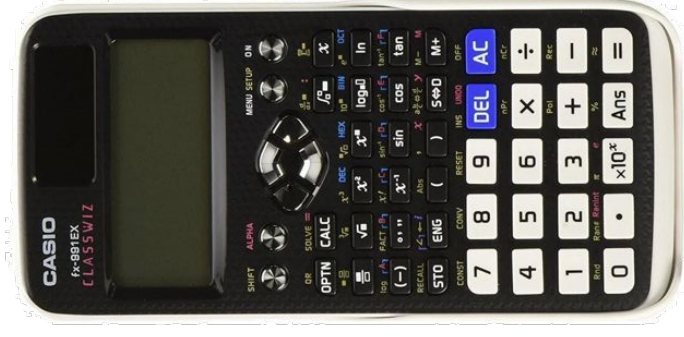


Name: _____

Tutor Group: _____

Bring this booklet to school with you **every day**.

School Equipment



These items of equipment should be brought to school every day.

Principles of homework

Homework is an essential part of learning for all students at The Sir John Colfox Academy. It supports the teaching and learning happens in the classroom, as well as helping to reinforce key learning from previous topics or years. It also helps to build routines and habits that will be needed for successful revision in Key Stage 4. We believe that meaningful homework is underpinned by the following principles.

- We value quality rather than quantity, so that a small number of things are done well.
- Homework is regular and specific, so that you know when to expect it and what to do.
- It is time limited, so that you are developing good study habits without being overwhelmed.
- It develops independent study habits and metacognitive skills so that students can work with increasing independence as they move through school and into adult life.

Homework expectations

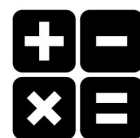
	T	On Time	Follow the homework schedule so that you know when each piece of homework will be checked by your teacher.
	A	Accurate	Take care over your work. Use the correct spelling, punctuation and grammar. Be specific. Use subject specific vocabulary.
	N	Neat	Present your work neatly. Write in pen and draw in pencil. Use a ruler if needed.
	C	Complete	Make sure the task(s) or questions are finished in full. No blanks. No missed questions.

Support with homework

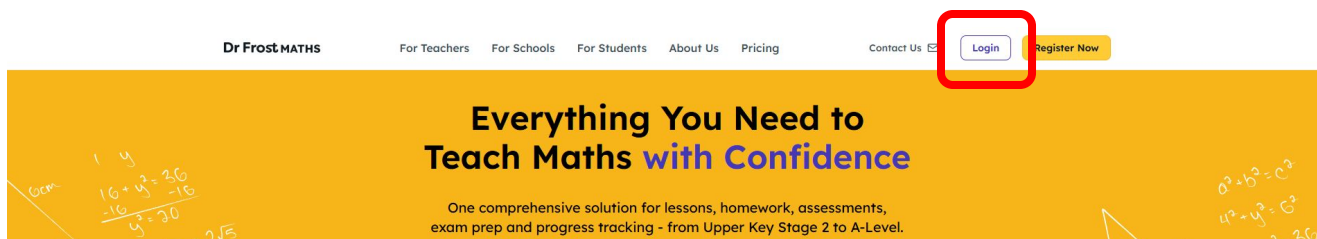
If you need help with your homework, you can:

- ✓ Speak to your class teacher.
- ✓ Speak to your tutor.
- ✓ Come to homework club in the library until 4:30 every Monday to Thursday
- ✓ SEN Homework club runs in the SEN room until 4:30 every Monday to Thursday.

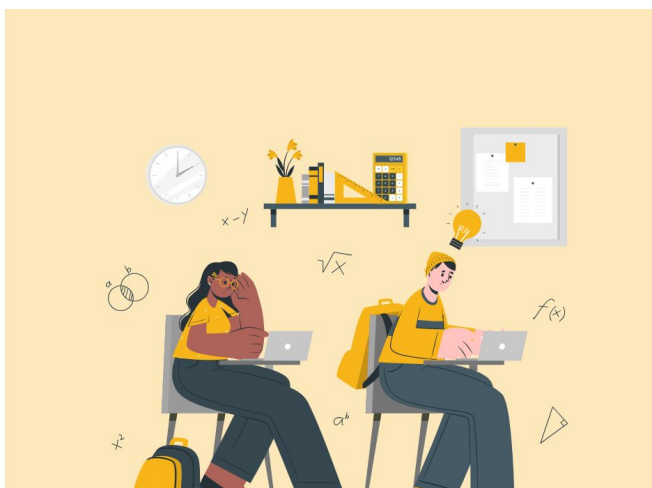
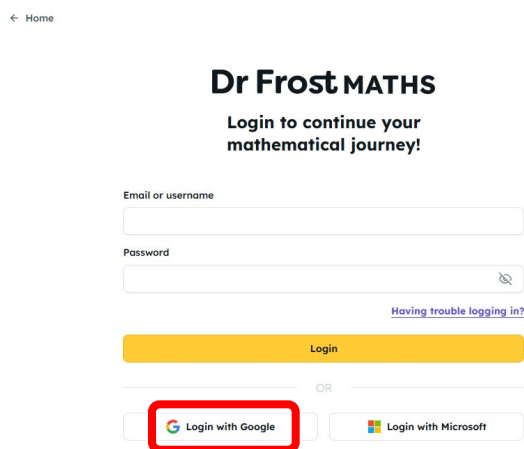
Dr Frost - Maths



Visit <https://www.drfrost.org/> and click “Login” at the top of the page



Click “Log in with Google”



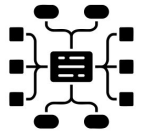
You then use your school email address and the password you use in the computer room e.g.

Username: 26exampleanne@sirjohncolfox.org

Password: The same a you use to log into the computers at school.

Your tasks will appear on the left-hand side of the screen.

Mind Maps



A mind map is a way of organising information using keywords, colours, pictures and branches. Start with the main topic in the centre of the page and draw lines outwards for different ideas or sub-topics. Add key facts, images and links between ideas. Mind maps help you see how information fits together and make it easier to remember. They are especially useful when revising a topic with lots of information. When creating a mind map, try to use short keywords instead of full sentences. This helps your brain focus on the most important information and makes revision quicker.

Flashcards



Flashcards are small cards used to test your memory. On one side, write a question, keyword or topic. On the other side, write the answer or explanation. Once you have made your cards, test yourself by looking at one side and trying to remember what is on the other. Flashcards are useful because they help you practise retrieving information from your memory, which strengthens learning. Keep reviewing cards regularly, especially the ones you find difficult. You can use flashcards for vocabulary, dates, formulas, definitions and key facts in almost any subject.

Dual Coding



Dual coding is a technique that combines words and pictures to help you learn. Instead of only reading notes, add diagrams, symbols, timelines, charts or simple drawings to represent the information. Using both visual and written information can make ideas easier to understand and remember. The pictures do not need to be artistic – simple sketches are often best. For example, you could draw something that represents a key idea – a smiley face for happy, a heart to represent love, etc. The aim is to help your brain make stronger connections between ideas by presenting information in more than one way.

Summarising



Summarising means reducing information to its most important points. After reading a text, write a short explanation using your own words. Focus on the key ideas rather than copying everything. A good summary is clear, accurate and much shorter than the original information. This technique helps you check your understanding and identify what is most important. You could summarise a chapter, lesson notes or a revision topic. If you can explain something simply, it is often a sign that you understand it well.

Look/Cover/Write/Check



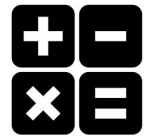
“Look, Cover, Write, Check” is a simple method for learning facts, spellings, vocabulary and key information. First, look carefully at the information you want to learn. Next, cover it so you cannot see it. Then write it down from memory. Finally, check your answer against the original and correct any mistakes. Repeat the process until you can remember the information accurately. This technique works because it makes your brain actively recall information rather than just reading it. Regular practice can improve memory and help information stay in your long-term memory.

Homework Timetable

Homework Timetable – Half Term 1			
Week beginning	Maths	English	Science
14 th Septr	Dr Frost Task 1	Mind Map	Cells Mind Map
	Due Weds 23/09	Due first lesson of w/c 21/09	Due first lesson of w/c 21/09
21 st Septr	Dr Frost Task 2	Flash Cards	Cells Mind Map
	Due Weds 30/09	Due first lesson of w/c 28/09	Due first lesson of w/c 28/09
28 th Septr	Dr Frost Task 3	Dual Coding	Cells - Questions
	Due Weds 7/10	Due first lesson of w/c 05/10	Due first lesson of w/c 05/10
5 th Oct	Dr Frost Task 4	Summarising	Reactions - Mind Map
	Due Weds 14/10t	Due first lesson of w/c 12/10	Due first lesson of w/c 12/10
12 th Oct	Dr Frost Task 5	Look, Cover, Write, Check	Reactions - Mind Map
	Due Weds 21/10t	Due first lesson of w/c 19/10	Due first lesson of w/c 19/10
19 th Oct	Dr Frost Task 6	Mind Map	Reactions - Questions
	Due 4/11	Due first lesson of w/c 02/11	Due first lesson of w/c 02/11

Tick off each task to keep track of what you have done.

Maths



Two topics will be covered this half term:

- Topic 1: Fractions
- Topic 2: Expressions

All the key facts here need to be learnt off by heart.

Fractions Key Facts

CORE

learn by heart

What is a numerator?	The top number in a fraction
What is a denominator?	The bottom number in a fraction
What is a whole ?	All of the parts, e.g. $\frac{5}{5}$
What is a unit fraction ?	A fraction with a numerator of 1, e.g. $\frac{1}{5}$
What is a proper fraction?	Denominator > Numerator
What is an improper fraction?	Numerator $\geq$ Denominator
What is a mixed number?	An integer + a fraction
What is finding $\frac{1}{4}$ of an amount the same as?	Dividing by 4
What is finding $\frac{2}{5}$ of an amount the same as?	Dividing by 5 and multiplying by 2
What are equivalent fractions?	Fractions which have the same value
What is the simplest form of a fraction?	The numerator and denominator have no common factors
What is $\frac{14}{100}$ as a decimal?	0.14
What is $\frac{2}{5}$ as a decimal?	$\frac{2}{5} = \frac{4}{10} = 0.4$
How are fractions multiplied?	Multiply numerators and denominators
How is the reciprocal of a fraction found?	Swap over the numerator and denominator
To divide by a fraction.....	multiply by its reciprocal

Fractions Key Facts

SUPPORT

learn by heart

What is a fraction?	A number of equal parts
What is a numerator?	The top number in a fraction
What is a denominator?	The bottom number in a fraction
What is a whole ?	All of the parts, e.g. $\frac{5}{5}$
What is a proper fraction?	Denominator > Numerator
What is an improper fraction?	Numerator $\geq$ Denominator
What is a mixed number?	An integer + a fraction
What is finding $\frac{1}{4}$ of an amount the same as?	Dividing by 4
What is finding $\frac{2}{5}$ of an amount the same as?	Dividing by 5 and multiplying by 2
What are equivalent fractions?	Fractions which have the same value
What is the simplest form of a fraction?	The numerator and denominator have no common factors
What is $\frac{14}{100}$ as a decimal?	0.14
List all the factors of 100	1, 2, 4, 5, 10, 20, 25, 50, 100
What is $\frac{1}{2}$ as a decimal?	0.5
To be able to add or subtract fractions.....	they need to have the same denominator
How are fractions multiplied?	Multiply numerators and denominators

Algebraic Expressions Key Facts A

CORE

learn by heart

What does adding a positive result in?	Moving up the number line
What does adding a negative result in?	Moving down the number line
What does subtracting a positive result in?	Moving down the number line
What does subtracting a negative result in?	Moving up the number line
What is a product ?	The result of multiplying
Negative $\times$ Negative =	Positive
Negative $\times$ Positive =	Negative
What are like terms ?	Multiples of the same variable, e.g. $3b$ & $5b$
How can you simplify an expression?	By adding or subtracting like terms
What is a coefficient?	The number that multiplies the variable
What must like terms have?	The same base and the same index
In $3a^2$ what is the coefficient?	3
In $3a^2$ what is the index?	2
In $3a^2$ what is the base?	a

Algebraic Expressions Key Facts B

CORE

learn by heart

How is $a \times 3$ written?	$3a$
Simplify $b \times a \times c$	abc
Simplify $a \times a$	a^2
Simplify $3a \times 5a$	$15a^2$
Simplify $4a^5 \times 2a^7$	$8a^{12}$
What is the base?	Part of a term which is raised to the index
Simplify $(a^3)^4$	a^{12}
List all the factors of 10	1, 2, 5 and 10
How can fractions be fully simplified?	Divide numerator & denominator by HCF
How else can we write a division?	As a fraction
When do we need to use brackets in a calculation?	When a part of the calculation needs to be done first
What helps with order of operations?	BIDMAS
How is an expression factorised?	Write as the product of its factors
What is the Highest Common Factor of an algebraic expression?	Largest factor shared by two or more terms

Algebraic Expressions Key Facts A

SUPPORT

learn by heart

What does adding a positive result in?	Moving up the number line
What does subtracting a positive result in?	Moving down the number line
What does adding a negative result in?	Moving down the number line
What does subtracting a negative result in?	Moving up the number line
What is a product ?	The result of multiplying
How else can we write a division?	As a fraction
When do we need to use brackets?	When a calculation needs to be done first
What are like terms ?	Multiples of the same variable, e.g. $3b$ & $5b$
How can you simplify an expression?	By adding or subtracting like terms
How is $1a$ written?	a
Simplify $3a^2 + 8a^2$	$11a^2$
How is $a \times 3$ written?	$3a$
Simplify $b \times a \times c$	abc
Simplify $a \times a$	a^2
Simplify $3a \times 5a$	$15a^2$

Algebraic Expressions Key Facts B

SUPPORT

learn by heart

Simplify $4a^5 \times 2a^7$	$8a^{12}$
Expand $2(n + 1)$	$2n + 2$
List all the factors of 10	1, 2, 5 and 10
How is an expression factorised?	Write as the product of its factors (usually with brackets)
What is the Highest Common Factor?	Largest factor shared by two or more terms
Factorise $5a - 25$	$5(a - 5)$
What does it mean to fully factorise?	Take out the highest common factor
Fully factorise $12a + 8$	$4(3a + 2)$
What are factors?	Numbers that multiply to make a product
How can fractions be fully simplified?	Divide numerator & denominator by HCF
What helps with order of operations?	BIDMAS
What does $2(n + 1)$ mean?	Add 1 to n then multiply by 2
Age today = x Age in 2 years =	$x + 2$
Age today = x Age 3 years ago =	$x - 3$



Year 8 Knowledge Organiser: Klara and the Sun

The author: Kazuo Ishiguro

- Born in Nagasaki, Japan, in 1954, but his family moved to England when he was just 5 years old.
- Nobel Prize winner for Literature. Not for a specific text but his entire body of work. His novels were noted as a "great emotional force"
- Writes about memory, loneliness, and what it means to be human.
- Studied at Kent and East-Anglia University
- Klara and the Sun published in 2021



Society	people living together in a more or less ordered community
Genre	a style or category of art, music, or literature.

Science Fiction	fiction based on imagined future scientific or technological advances and major social or environmental changes
Dystopia	an imagined society which is frightening, undesirable
Capitalism	A societal system where the money is made by private corporations and kept by those who run them
Late-stage capitalism	A capitalist society is developed but progress needs to slow down due to environmental damage, inequality, extreme technology advancement.

Narrative Structure		Part 1:		Part 2:		Part 3:	
- The novel is split into 6 parts - Each part is NOT labelled by traditional chapter numbers or titles. Instead, the novel is divided into parts that reflect shifts in time, location Written from Klara's Perspective: - Each section marks a significant phase in Klara's experience, often defined by changes in her environment or her relationship with Josie and others around her. - The division into parts can be seen as a reflection of Klara's processing of information, where she initially focuses on smaller sections before gradually understanding the bigger picture	Part 1: Klara, an Artificial Friend (AF), waits in a store with other AFs, hoping to be chosen by a child.	Part 2: Klara adjusts to life in Josie's rural home. She observes human behaviour at an interaction meeting. She goes on a trip to Morgan Fall's with Mother.	Part 3: Tensions between Josie and Rick surface. Klara becomes increasingly concerned about Josie. Klara visits Rick and his mother. Klara explores the wider area.	Part 4: They all go to the city so Josie can pose for a strange portrait being made by Capaldi. Josie's father is there; he helps Klara.	Part 5: Josie's struggles become more serious. Klara asks Rick to help her and he obliges.	Part 6: Years have passed and Josie prepares to leave for college.	Part 6: Years have passed and Josie prepares to leave for college.

Characters	
Klara ❖ An AF (artificial friend) ❖ A robot ❖ Intelligent ❖ Observant ❖ Narrator ❖ Worships the sun	Josie ❖ 14 years old ❖ Lives with her mother ❖ Chooses Klara ❖ Walks with a limp and has a mysterious chronic illness
Rick ❖ Josie's best friend and neighbour ❖ Poorer than Josie ❖ Faces discrimination ❖ Intelligent	Josie's mother (Chris) ❖ Protective ❖ Disagreeable ❖ Can be 'cold'
Melania ❖ Housekeeper to Josie's family ❖ Speaks bluntly ❖ Threatened by Klara ❖ Cares for Josie	Josie's father ❖ Engineer ❖ Often disagrees with Josie's mother ❖ Helps Klara ❖ Lives in an insular community
Sal ❖ Josie's sister	Mr. Capaldi ❖ Hired to create a portrait of Josie ❖ Lives in the city
Manager ❖ Runs a store that sells Afs ❖ Interested in Klara ❖ Parent figure to Klara	Beggar Man ❖ Inspiration to Klara
	Coffee Cup Lady and Raincoat Man ❖ Help Klara learn about human behaviour

Symbols	
The Sun ✓ God-like (for Klara) ✓ Hope/ faith ✓ Natural world 	The Cootings Machine ✓ Negative consequences of technological advancement and industrial progress 
The Bull ✓ A threat ✓ Something ominous ✓ Force of nature 	The Sheep ✓ Contentment ✓ Or, when unable to eat - limitations/ struggles 
	Black Birds ✓ Connection between natural and artificial 

Klara	Altruistic	Kind, unselfish, concerned about others
	Vigilant	Watchful, alert
	Guileless	Innocent, unable to deceive
Josie	Solitary	Alone
	Mercurial	Changeable and unpredictable
	Narcissistic	Self- centred
Mother	Sceptical	Disbelieving, doubtful
	Nostalgic	Thinking about the past with fondness
	Integrity	Honesty, truthfulness, having strong morals
Rick	Steadfast	Steady, predictable
	Condescend	To patronise
	Nurturing	Caring, protective
Melania	Indignant	Anger/ annoyance at unfair treatment
	Wary	Cautious, suspicious of others

CORE task: Turn page 1 (author information; definitions; narrative structure) of your Knowledge Organiser into a mind map below.

- Think carefully about how to organise the information (bigger version on your KO).



Science Fiction + Dystopian

Societies

Poetry- Relationships

Language Change

Detective - writing

Detective - reading

Year 8 Knowledge Organiser: Klara and the Sun



The author: Kazuo Ishiguro

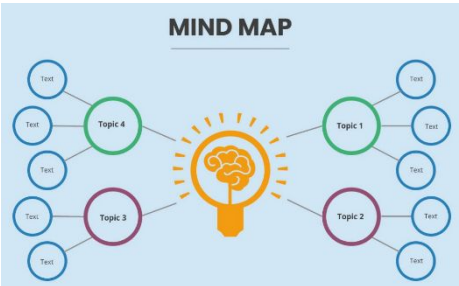
- Born in Nagasaki, Japan, in 1954, but his family moved to England when he was just 5 years old.
- Nobel Prize winner for Literature. Not for a specific text but his entire body of work. His novels were noted as a "great emotional force"
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Narrative Structure

- The novel is split into 6 parts
- Each part is **NOT** labelled by traditional chapter numbers or titles. Instead, the novel is divided into parts that reflect shifts in time, location
- **Written from Klara's Perspective:**
 - Each section marks a significant phase in Klara's experience, often defined by changes in her environment or her relationship with Josie and others around her.
 - The division into parts can be seen as a reflection of Klara's processing of information, where she initially focuses on smaller sections before gradually understanding the bigger picture

Part 1:	Part 2:	Part 3:
Klara, an Artificial Friend (AF), waits in a store with other AFs, hoping to be chosen by a child.	Klara adjusts to life in Josie's rural home. She observes human behaviour at an interaction meeting. She goes on a trip to Morgan Fall's with Mother.	Tensions between Josie and Rick surface. Klara becomes increasingly concerned about Josie. Klara visits Rick and his mother. Klara explores the wider area.
Part 6:	Part 5:	Part 4:
Years have passed and Josie prepares to leave for college.	Josie's struggles become more serious. Klara asks Rick to help her and he obliges.	They all go to the city so Josie can pose for a strange portrait being made by Capaldi. Josie's father is there; he helps Klara.



EXTENSION : Research more about the author and add extra information to your mind map

Week 2: Flashcards

- Flashcards are a creative and colourful way to support long-term learning.

CORE task: Create 14 flashcards – 1 for each of the following words that are on the Knowledge Organiser. Use the given definitions below.

Get card from your teacher if you need. A flashcard should be no smaller than a quarter of A4 (if making your own).

Altruistic	Kind, unselfish, concerned about others
Vigilant	Watchful, alert
Guileless	Innocent, unable to deceive
Solitary	Alone
Mercurial	Changeable and unpredictable
Narcissistic	Self- centred
Sceptical	Disbelieving, doubtful
Nostalgic	Thinking about the past with fondness
Integrity	Honesty, truthfulness, having strong morals
Steadfast	Steady, predictable
Condescend	To patronise
Nurturing	Caring, protective
Indignant	Anger/ annoyance at unfair treatment
Wary	Cautious, suspicious of others

- Have the key word on one side – clearly written – quite big!
- Have the definition on the other side – clearly written.
- Practise using them!

EXTENSION task: Add an antonym (the opposite) below your definition so you know what the opposite of that word is.

Week 3: Dual Coding

- Dual coding is the process of combining verbal materials with visual materials.
- There are many ways to visually represent material, such as with infographics, timelines, cartoon strips, diagrams, and images.
- When you have the same information in two formats-words and visuals-it gives you two ways of remembering the information later on. Combining these visuals with words is an effective way to study.

CORE task: Go back to your flashcards from last week. Add (at least 1) image to the key word side(dual code) that will help prompt you for the definition of that word.

EXTENSION task: Write a question under your word and image that could only be answered using this word.

Week 4: Summarising

- Summarise your topic in a few words.
- Using your own words means you process the information, which improves your understanding and your memory. Keep the notes brief to act as prompts. The aim is to create your summary from memory; do not use notes to help you.

CORE task: Summarise the following characters (using the character information and what you have read about them so far) in 15 words exactly. 1 word per box.

EXTENSION task: Draw how you see the characters in your mind's

eye.

Klara

Josie

Manager

Josie's Mum

Week 5: Look, cover, write, check

CORE task: Learn how to spell the key vocabulary from the Knowledge Organiser – using the look, cover, write check system. Do this **THREE TIMES THIS WEEK** (in the booklet) and then there will be a spelling test in class.

EXTENSION task: Write 10 sentences (1 sentence per word) applying that word to what you have been learning this term. Be as detailed and thorough as possible.

<i>Look and Say</i>		<i>Write – without looking!</i>	<i>Check! Did you get it right?</i>
Altruistic	<i>Now cover up look and say column!</i>		
Vigilant			
Guileless			
Solitary			
Mercurial			
Narcissistic			
Sceptical			
Nostalgic			
Integrity			
Steadfast			

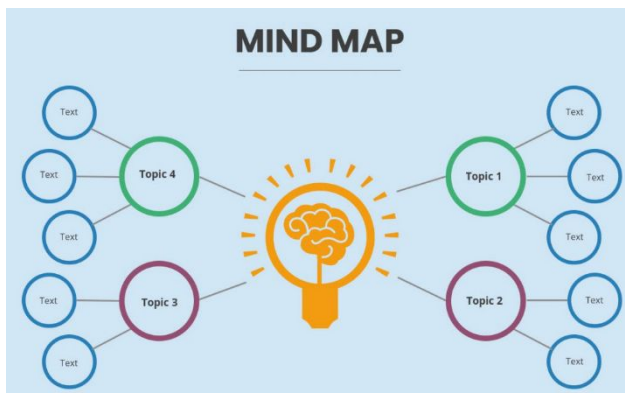
<i>Look and Say</i>		<i>Write – without looking!</i>	<i>Check! Did you get it right?</i>
Altruistic	<i>Now cover up look and say column!</i>		
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Mercurial			
Narcissistic			
Sceptical			
Nostalgic			
Integrity			
Steadfast			

<i>Look and Say</i>		<i>Write – without looking!</i>	<i>Check! Did you get it right?</i>
Altruistic	<i>Now cover up look and say column!</i>		
Vigilant			
Guileless			
Solitary			
Mercurial			
Narcissistic			
Sceptical			
Nostalgic			
Integrity			
Steadfast			

Week 6: Mind map, dual code, summarising

Core task: Create a mind map that showcases the WHOLE Knowledge Organiser.

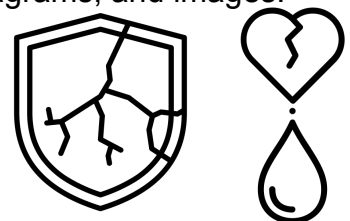
Use colour, dual coding, summarising and all the skills you have learned this half term.



- Summarise your topic in a few words.
- Using your own words means you process the information, which improves your understanding and your memory. Keep the notes brief to act as prompts. The aim is to create your summary from memory; do not use notes to help you.



- Dual coding is the process of combining verbal materials with visual materials.
- There are many ways to visually represent material, such as with infographics, timelines, cartoon strips, diagrams, and images.



Science



Science helps us explain how the world around us works.

So, when you learn science, you learn explanations (or theories) of why things happen in nature. For example, you learn about how forces can explain why things move or how ideas about atoms help us explain what happens when in a chemical reaction.

But before you can understand these scientific explanations (or theories), you need to understand the key ideas. For example, you need to know that a force is a push or a pull or a bit about what atoms look like.

The homework in science reminds you of the key ideas you need to understand to learn the explanations you are studying in science this term. You will have been taught these topics before. So, this is a recap.

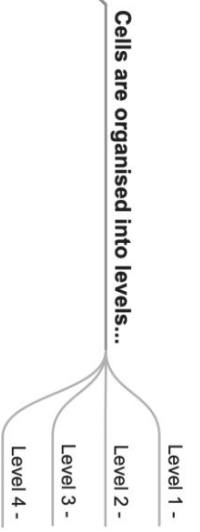
To do this, your science teachers expect you to:

1. Complete the mind-map for the topic using the handout you have been given (1st and 2nd week). The branches you have been given are just a starting point. You are free to add lots more detail. But remember, don't become a human photocopier! You need to summarise or select the information you want to add.
2. Check your understanding of this topic by answering the 'Check your understanding' questions (3rd week).

There are two topics each half-term.

This half-term they are:

1. Cells and diffusion.
2. Chemical reactions and equations.



Cells are important to understand living things because...

Cells and Diffusion

Some living things only have ONE cell

Eugelena

Ameoba (look this one up on the internet)

Diffusion

Diffusion is how....

This is a diagram of diffusion

Cells

Animal cells

Look like...

Contain....

A nucleus that...

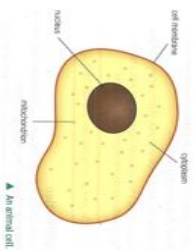
Plant cells

Look like...

As well as a nucleus, cell membrane, cytoplasm, and mitochondria, they also contain...

...a cell wall that....

Cells and diffusion | Test your understanding

Typical Cells and Specialised Cells				
Why do multicellular organisms require specialised cells?	Can you give examples of plant and animal tissues?	- List the 5 common features of animal and plant cells and their functions? - List the three extra features of Plant cells and their functions? - What examples of specialised cells can you name / draw?		
Organs and Organ Systems		Diffusion		
What are examples of organs in plants and animals?	What are examples of organ systems in humans?	Draw particles of Glucose diffusing into this animal cell?	Define concentration gradient?	What factors affect the rate of diffusion and how?
				
Unicellular Organisms - Euglena and Amoeba				
Draw and Label an Amoeba	Draw and label a Euglena	- What is a Unicellular Organism? - Compare Euglena and Amoeba as unicellular organisms?		

word equations,
for example...

Equations show what is happening in a reaction the can be...

Chemical Reactions and Equations

Chemical are
formed in a
chemical reaction
because...

Chemical reactions

In a chemical
reaction the atoms...

The chemicals you
start with are called...

The chemical you end
up with are called...

symbol equations

for example

Symbols are used
for elements, for example...

Sulphur...

Oxygen...

Hydrogen..

Sodium...

water...

table salt...

carbon dioxide...

Formula are used
for compounds, for example

In any chemical
reaction, the mass...

Chemical Reactions and Equations | Test your understanding

Write down the names and symbols of 3 elements.	Write down the names and formula for 3 compounds.	Look at this word equation that describes a chemical reaction. Zinc + copper sulfate → zinc sulphate + copper What are the reactants in this reaction? What are the products in this reaction?
Is ice melting a chemical reaction? Yes or no and explain your answer.	What two elements are in the compound, H ₂ O (water).	Draw a diagram that shows what happens to the atoms in this reaction.
Look at this word equation for a chemical reaction. Carbon + oxygen → carbon dioxide Can you write the symbol equation for this reaction.	Look at this symbol equation for a chemical reaction. $2\text{Na} + \text{Cl}_2 \rightarrow 2\text{NaCl}$ Can you write the word equation for this reaction.	