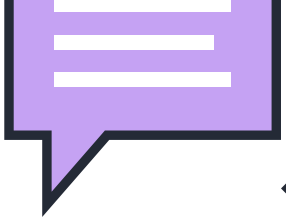
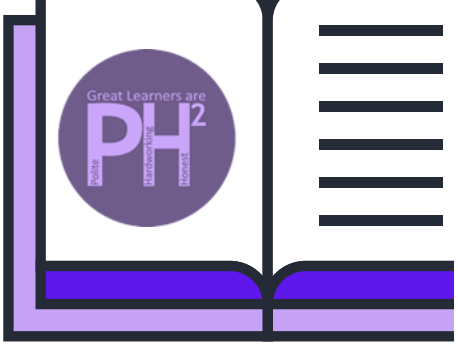
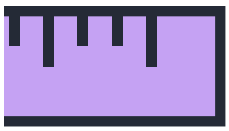


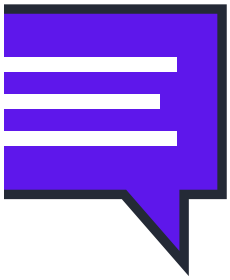


HOME-LEARNING

YEAR 7



HALF TERM 4



"STRIVE FOR PROGRESS, NOT PERFECTION."

UNKNOWN

Core Values

Our school community is built on three important values which underpin all we do.

We believe that great learning comes from:

Politeness

- We treat every person and thing as we want to be treated
- We are respectful, polite and courteous at all times
- We help others at all times

Hard-work

- We never give up
- We remain positive so that we have the strength to persevere with even the hardest work
- We do what it takes, for as long as it takes

Honesty

- We are true to ourselves and others and we do not make excuses
- We look to ourselves to see what needs to be done.

What is learning?

A big part of learning is about getting knowledge to go into your long-term memory and then using this knowledge. Our brains will only remember knowledge in the long term if we think really hard about it. Just reading, or highlighting does not make our brains work hard enough. We must **practise** remembering things – this will feel difficult at the time but worth it in the end.

What is a knowledge organiser?

A knowledge organiser is a document that contains key facts and information. A knowledge organiser will not include every possible fact on a topic; it will include facts needed to understand the main points. Knowledge organisers make knowledge clear. So, even if a learner misses a lesson, they have a constant point of reference.

Why are knowledge organisers good for learning?

Research shows that our brains remember things more efficiently when we know the 'bigger picture' and can see the way that 'nuggets' of knowledge link. Making links helps information move into our long-term memory. A knowledge organiser shows linked facts on a single topic.

Knowledge organisers can be used for retrieval practice (practising remembering things). Regular retrieval of knowledge helps us remember more effectively with our long-term memory. Developing our long-term memory is a vital first step. Without knowledge we have nothing to work with, nothing to think about! Retaining knowledge over time is essential.

To help us understand learning better, Gateacre students and staff have created a series of videos that explain how memory works and what we can do to make it stronger. Follow the QR code or the Learning to Learn link to view them.

How can you best use your knowledge organiser?

There are many ways you can use a knowledge organiser. The most important thing to say, however, is 'use it'. Owning one does not make you remember facts… **you must practise** if you are to improve at anything! There will be mistakes – this is how you learn. Ultimately, the best way to remember things is to try and remember facts that you can't quite remember instantly… practice, practice and practice.

Here are some ways you could try to improve your **long-term memory** – they are all based on making you **think**, getting you to **test your memory**. That way your memory will get stronger:

Hide and seek

Read through a small section of your knowledge organiser (three or four key words), cover the facts and try to write out as much as you can remember. Check your answers and correct them if needed. Then choose your next words or check ones you have already done again.

Quiz

Test your memory by asking someone to quiz you on facts from your knowledge organiser. Write down your answers and see how many you get right. Correct any facts you get wrong.

Teach it!

Teach and explain to someone your key facts – you could even test them!

Back to front

Write down a fact from memory and then compose a question that would lead to that answer.

Sketch it

Draw pictures /diagrams to represent each of the facts or dates (time lines, flow diagrams, or labelled pictures are great ways of remembering parts of a system or orders of events).

Repackage it (from memory)

Create a mind map that brings different facts together under one title. Check that your key words are spelt correctly… or, take a key word and create a sentence that uses it.

Take pride in how you present your work. Each page should be clearly labelled with an underlined date. There should be at least one page of work.

Always check your answers and correct anything you got wrong…. You are allowed to get things wrong… That is how you learn! Getting yourself to think is the key!

Do not just copy a knowledge organiser out – that would not help learning and would only waste your time! Make sure you are having to think!

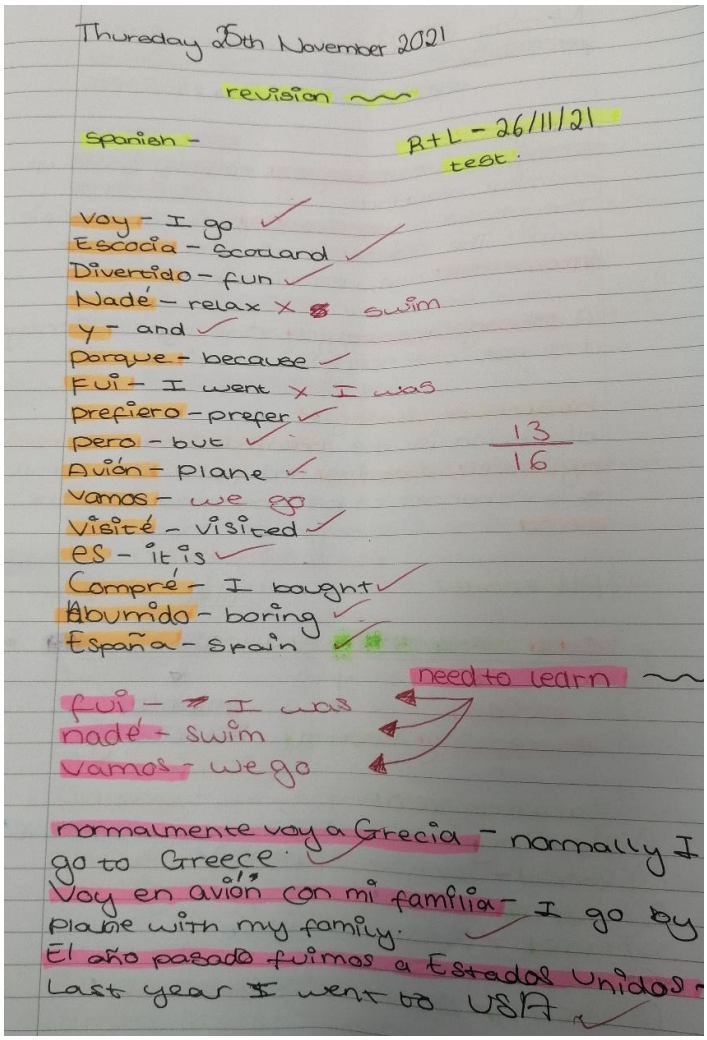
What does effective home-learning look like?

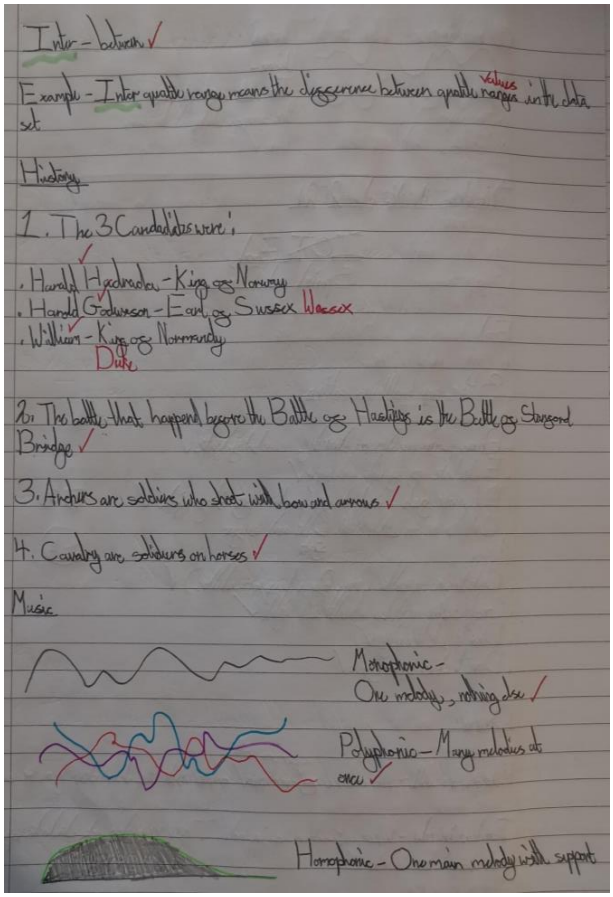
Here are some essential points to remember and some examples to see.

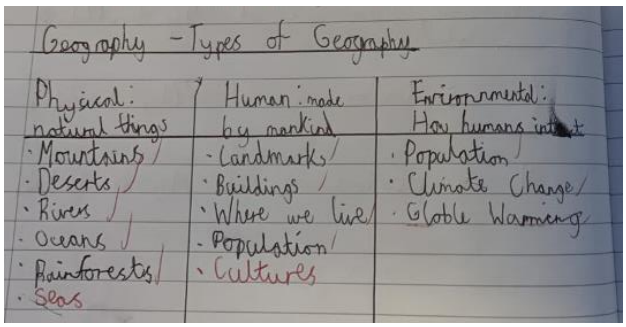
- Long term memories are created when you have to **think**. Simply copying does not help you remember. Testing yourself will make you **think** and remember

- The process of reflection and self-assessment is important if you are to fix mistakes. Do not worry about getting things wrong as long as you check, fix it and try again

All these learners have **read**, **thought**, **tested themselves** and then **checked** their work. They will start to develop long term memory which they can then use in the future.







MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Maths [Hegarty Maths On-Line]	**Computing**	**English** [Supported by Educake Tasks]	**Art**	
History	**Food/Drama**	**Geography**	**Science**	
Music	**Spanish**	**Dt**	**Active Lifestyles/RS**	

Where subjects share a slot it is for **you** to decide which one **you** know less about - which one should **you** revise?

You decide which one to do, or you could, of course, revise both.

Literacy: Do take time to engage with the **Listen Project**. Developing our vocabulary is immensely important if we are to develop as learners. The **listen Project** is an opportunity to listen to interesting ideas, facts and make our vocabulary better. You can do this sh[illegible] point within the week.

Remember, you can always do more. Challenge yourself to be the best you can be!

The 'Listen' Project #1

How to use the 'Listen' Project

Start Here

Being read to is a vital part of learning - hearing words that we are unfamiliar with, ideas that we don't understand yet and thoughts we haven't had a chance to think.

Even simple stories create links from one idea to the next. The fairy tales we heard when we were babies give us the first step to understanding the adventure stories we read in school.

Take time out and listen…

Step 1 – Click the link and listen.

You can follow the text as you are read to or just listen.

Step 2 – Check the text.

Have a look at the texts. There are three pieces of writing.

The first piece may appear to be very simple, maybe even too young for you. These stories are some of the first we hear and often start our journey to understanding more complicated ideas.

The second text may be something you recognise or have read yourself. Is there a link to the first story?

The third is the most complex and may even leave you with a lot of questions.

Step 3 – What's the connection?

The final step is to think about what links these texts and stories together?

Where have you thought about these ideas before?

Do you think about any of these ideas in school?

You can go back and listen to the texts being read as many times as you like.

SCAN ME

The 'Listen' Project #1

Dogs

Hairy Maclary from Donaldson's Dairy

Out of the gate
And off for a walk
Went Hairy Maclary
From Donaldson's Dairy

And Hercules Morse
As big as a horse

With Hairy Maclary
From Donaldson's Dairy.

Bottomley Potts
Covered in spots,
Hercules Morse
As big as a horse

And Hairy Maclary
From Donaldson's Dairy.

Muffin McLay
Like a bundle of hay,
Bottomley Potts
Covered in spots,
Hercules Morse
As big as a horse

and Hairy Maclary
From Donaldson's Dairy.....

Humph.....

In the beginning of years, when the world was so new and all, and the Animals were just beginning to work for Man, there was a Camel, and he lived in the middle of a Howling Desert because he did not want to work; and besides, he was a Howler himself. So he ate sticks and thorns and tamarisks and milkweed and prickles, most 'scruciating idle; and when anybody spoke to him he said 'Humph!' Just 'Humph!' and no more.

Presently the Horse came to him on Monday morning, with a saddle on his back and a bit in his mouth, and said, 'Camel, O Camel, come out and trot like the rest of us.'

'Humph!' said the Camel; and the Horse went away and told the Man.

Presently the Dog came to him, with a stick in his mouth, and said, 'Camel, O Camel, come and fetch and carry like the rest of us.'

'Humph!' said the Camel; and the Dog went away and told the Man.

Presently the Ox came to him, with the yoke on his neck and said, 'Camel, O Camel, come and plough like the rest of us.'

'Humph!' said the Camel; and the Ox went away and told the Man.

At the end of the day the Man called the Horse and the Dog and the Ox together, and said, 'Three, O Three, I'm very sorry for you (with the world so new-and-all); but that Humph-thing in the Desert can't work, or he would have been here by now, so I am going to leave him alone, and you must work double-time to make up for it.'

That made the Three very angry (with the world so new-and-all), and they held a palaver, and an indaba, and a punchayet, and a pow-wow on the edge of the Desert; and the Camel came chewing on milkweed most 'scruciating idle, and laughed at them. Then he said 'Humph!' and went away again.

Man's Best Friend

This man (Thornton) had saved his life, which was something; but further, he was the ideal master. Other men saw to their dogs' welfare from a sense of duty; he saw to the welfare of his as if they were his own children. He had a way of taking Buck's head between his hands and resting his own head upon Buck's, and of shaking him back and forth. Buck knew no greater joy than that rough embrace. It seemed that his heart would be shaken out of his body.

When Thornton's two partners, Hans and Pete, arrived, Buck refused to notice them until he learned they were close to Thornton; after that he tolerated them in a passive sort of way.

For Thornton, however, Buck's love seemed to grow and grow. In the fall of the year, he saved John Thornton's life.

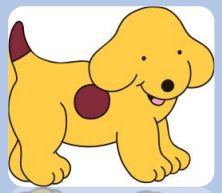
The three men were lining a boat down a stretch of rapids. Hans and Pete moved along the bank, snubbing with a rope from tree to tree, while Thornton remained in the boat, helping its descent by means of a pole.

At a spot, where a ledge of barely submerged rocks jutted out into the river, Hans cast off the rope, and Thornton poled the boat out into the stream. The boat snubbed into the bank bottom up, while Thornton, flung sheer out of it, was carried downstream toward the worst part of the rapids, a stretch of wild water in which no swimmer could live.

Buck sprung in; and at the end of 300 yards, amid a mad swirl of water, he overtook Thornton. When he felt him grasp his tail, Buck headed for the bank. But from below came the fatal roaring where the wild current went wilder. Thornton scraped furiously over a rock, bruised across a second, and struck a third with crushing force. He clutched its slippery top with both hands, releasing Buck, and shouted: "Go, Buck! Go!"

Dogs

Animals play an enormous role in many of the texts that we read. From our youngest years, we read about **Spot the Dog** and **Meg and Mog.** Humans and animals have existed together for thousands of years and the relationship between pets and their owners can be very powerful.



Animal stories are not always simple or heart-warming. We can learn valuable lessons about the natural world from the stories we tell.

Humph…

Authors use animals to tell bigger, more valuable stories. We often call simple stories that try to tell bigger truths **allegories**. Rudyard Kipling wrote a series of short stories that explain how various animals came to be the way they are, both in terms of their character like the grumpy camel and the way they look. **Aesop's fables** also use animals to explain why things are they way they are or to teach valuable lessons.

Man's Best Friend

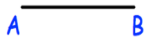
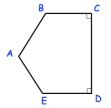
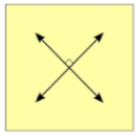
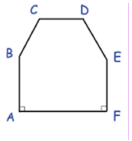
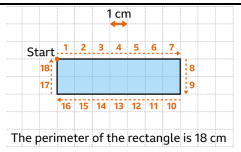
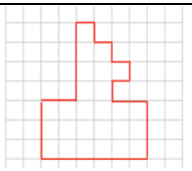
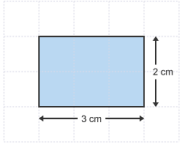
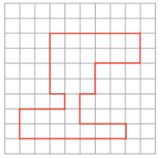
The story of Buck is told in **Jack London's *Call of the Wild***. The story is told from the perspective of Buck the dog and details his adventures in the Alaskan wilderness during the gold rush. Although the story is told from the animal's perspective, **London** works hard to retain ***realism***. The short novel details just how tough the world can be for humans and animals alike and bond that can be created between them.

Mathematics

Your Maths Home Learning has two parts:

Part 1 is: Copy the definition of the key word and diagrams into your Home Learning Book, then use these to complete the task

Part 2 is: Access **www.hegartymaths.com** → Watch the video , making notes in your book → Complete the assigned quiz

Week	Key Word	Definition	Task	Hegarty Task
20th Feb	Capacity	Capacity is how much space there is inside a 3D object Another word for capacity is volume	Find 5 objects around the house and state their capacity Hint: The kitchen might be a good place to look!	568
27th Feb	Parallel	Parallel lines are lines that remain the same distance apart and will never meet  Parallel lines are indicated by arrows going in the same direction.	(a) Draw a line parallel to the line AB.  Name the parallel lines 	MemRi
6th March	Perpendicular	Perpendicular lines are lines that intersect (cross over) at a 90 degree angle (right angle) 	Two lines are perpendicular to AF. What are they? 	MemRi
13th March	Polygon	A polygon is a 2D closed shape with straight sides, eg triangle, hexagon, etc.	Draw and label 5 polygons. Eg triangle, square, pentagon. A circle is not a polygon. Why not?	822
20th March	Perimeter	Perimeter is the distance around the outside of a shape  The perimeter of the rectangle is 18 cm	Find the perimeter 	548
27th March	Area	Area is the total amount of space inside a 2D shape.  $A = 6cm^2$	Find the area 	553 Challenge Video 554

History KNOWLEDGE ORGANISER

Topic: **Religion in Medieval England (1250-1500)**

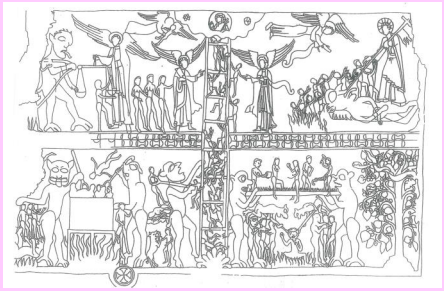
YEAR 7
HT4

Overview

Religion was very important in the Medieval period (1250-1500). Everyone believed in God and there was no science to explain things like illness. Doom paintings show that people believed that they would go to heaven if they lived a good life and go to hell if they committed sins (broke religious rules).

There were a number of crusades, known as Holy Wars, during this period. In 1095 the Pope asked Christian Kings to send armies to the Holy Land. The Pope wanted to evict (get rid of) the Turks who controlled that area. These journeys were known as the Crusades (wars of the cross).

People went on the Crusades for a number of reasons. They included to get rid of sins, to become a hero, for adventure and to see the world. The Crusades helped England gain new products like cotton, silk and new knowledge (including a new number system and better maps).



Key People and Terms

Thomas Becket

Thomas Becket was made Archbishop of Canterbury by King Henry II. They later fell out. He carried on the quarrel (argument) after he had returned to England and he knew that this would put him in danger. He had a good chance to escape but refused to go. He seemed to want to be a martyr (die for what he believed in) so that he could serve God and the Church.

Henry II

Henry II was King of England and made his friend, Thomas Becket, Archbishop of Canterbury. Henry became angry with his former friend who was causing so much trouble by taking his new role seriously and going against King Henry II. He wanted Thomas out of the way. He more or less ordered his murder by saing out loud "will no-one rid me of this troublesome priest…".

Medieval Life

Peasants

Life for medieval peasants (villeins) was tough. They worked outside in the fields from sunrise to sunset whenever there was work to do. Most of the land was owned by someone else (the Lord of the Manor) who was usually a knight or a baron. The lord let peasants live on his land in return for obedience (doing as they were told), a payment and several says of work a week.

Peasant families lived in wooden huts that they would build themselves. Each had a small garden where they grew vegetables and fruit.

Towns

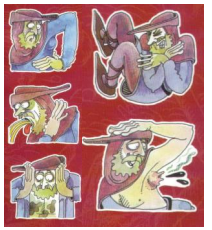
About 90% of people lived in small villages in the countryside. After 1066, towns began to grow. Some villages grew in size and became towns. If you saved up you could buy your freedom and land. A town charter gave people the chance to run the town themselves.

Medieval Health

There were 4 main beliefs for the cause of disease in Medieval England. 1) God sent disease as punishment for sins. 2) Miasma - bad air caused disease. 3) Astrology – the alignment of planets caused people to become ill. 4) The Four Humours – the idea that fluids in the body were out of balance. They were black bile, yellow bile, blood and

Black Death in England (1348-49)

The Black Death arrived in England in 1348. It had spread across Europe and was carried by infected rats and people on ships that were transporting goods. Almost half of the population died. People did not understand rats carried the disease and believed it was a punishment sent by God for sins or caused by bad air (called miasma).



Symptoms included swellings in the armpits and groin, fever, bleeding under the skin, coughing blood, spasms and black spots called buboes. The effects of the Black Death were not all negative. There was more land for people. It also led to changes including more freedom and better pay. There was too much food so many people began farming sheep and selling wool. The Government passed a law to try to keep wages low. It did not work.

Key Terms

Buboes: The black spots people developed with the Black Death (plague). They were filled with puss.

Crusades: Holy Wars or Wars of the Cross. These were religious wars fought by the Latin Church between 1096 and 1271.

Doom paintings: Wall paintings in Medieval churches. They show what they believe heaven and hell is like.

Holy land: An area in the Middle East which is very important to Christians, Muslims and Jews.

Lord of the Manor: The owner of large estates of land, often given power by the King.

Martyr: Someone who dies for what they believe in.

Miasma: The belief that bad smells caused illness.

Sin: Breaking religious rules. People of Medieval England believed they would go to hell if they sinned.

Symptoms: Something that you can link to a disease. Symptoms of a cold include sneezing and a fever.

Villeins: Peasants (farmers) who worked for and were controlled by the Lord of the Manor. They worked the land to grow food and did services in return for land.

Tasks

Task 1

Look at the "Overview" section on the page above. Create you own recruitment poster of the Crusades. You will need to include:

- What were the Crusades?
- What would people gain by joining up?

Task 2

Look at the 'Key People and Terms' Section on the page above. Create a short dialogue (script) of a conversation between Henry II and Thomas Beckett. Include one reason why the two fell out.

Task 3

You have travelled back in time to Medieval England. Using the 'Medieval Life' and 'Key Terms' section, write a short description of what life was like in Medieval England. (Try to include as many of the key terms as possible).

Task 4

Using the 'Black Death in England (1348-49) section, draw and complete the table below:

Causes	Symptoms
Punishment from God	

Task 5

Create a 10 question quiz based on your knowledge organiser. Use this quiz to test someone you know. If they don't know the answer, teach them!

Task 6

Read through the BBC Bitesize – Black Death topic and complete the quiz at the end.

https://www.bbc.co.uk/bitesize/topics/zqjwxnb/articles/zdkssk7

ELEMENTS OF MUSIC 1

Texture: how different layers of instruments are used

Monophonic: One melody – nothing else

Polyphonic: Many melodies at once

Homophonic: One main melody with support

Unison:  Two instruments playing the same melody at the same time

Harmony: the chords and how they sound

Major: Positive harmony (happy, relaxed)

Minor: Negative harmony (sad, dark, gloomy)

Chord: A group of notes played together (often 3 notes)

Instruments:

Strings: Violin; Viola; Cello; Double Bass; Guitar; Sitar

Woodwind: Flute; Oboe; Clarinet; Bassoon; Saxophone

Brass: Trumpet; Trombone; French Horn; Tuba

Percussion: Drums (lots of types); Tambourine; Cow Bell; Timpani; Xylophone

Timbre: The sound itself e.g. an instrument might sound metallic, breathy, mellow.

Rhythm:

Time Signature: The regular count of the music. How many beats are in each bar?

2/4 3/4 4/4 = most common time signature 6/8

Syncopated: Playing off the beat. This will create a more complicated rhythm. Syncopation is common in jazz and popular music as well as much folk music (i.e. African drumming, Samba)

Ostinato: This is a repeated pattern. A repeated rhythm can be very effective in creating a strong sense of rhythm (**Samba** and **African drumming** use layers of **rhythmic ostinato patterns)**.

Task 1: Learn the names of the different **textures** and what they mean.

Task 2: Revise task 1 – texture, and learn the **harmony** words and what they mean.

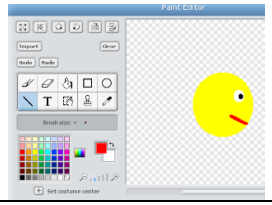
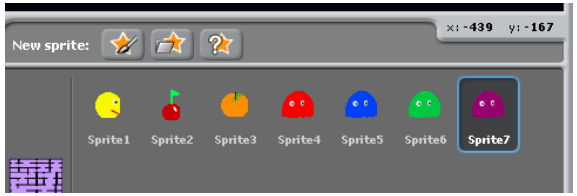
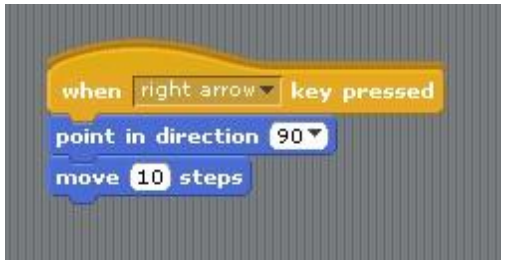
Task 3: Learn the **rhythm** words: **Time Signature; Syncopated; Ostinato** and what they mean.

Task 4: Learn which **instruments** are in the four instrument families (Strings; Woodwind; Brass Percussion) and what the word **timbre** means.

Task 5: Create a 10-question quiz based on **Texture** and **Harmony**.

Task 6: Create a 10-question quiz based on **Rhythm** and **Instruments**.

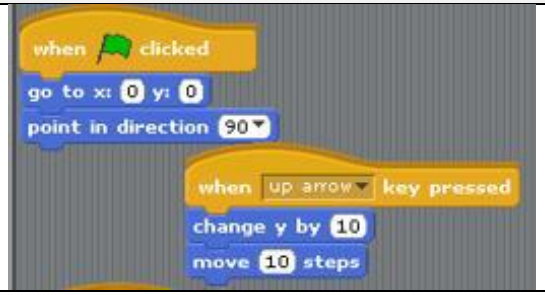
Computing Department Knowledge Organiser: Year 7 Scratch Programming

Scratch Programming	
What is scratch? 	Scratch is a free graphical **programming language** that allows you to create interactive stories, games, animation, music, art and presentations. You will be designing and programming a PAC-MAN game in school.  
Learn how to use Scratch online https://scratch.mit.edu	There are tutorials and projects you can access online. Scan the QR code with a camera to go to the tutorials webpage: https://scratch.mit.edu/projects/editor/?tutorial=all
What is an algorithm? 	An **Algorithm** is the step by step instructions to complete a task. A set of rules to be followed in order. You can write your own algorithms in Scratch. Scratch has pre-programmed blocks of code that can be placed together to create your algorithm to create the instructions for your sprite(s) and the background. The first algorithm will be basic movement of your sprite.
What is a variable? 	A **variable** is something that changes during the running of the program. Variables can be used to create scoring in a game e.g. keys collected or lives.

Computing Department Knowledge Organiser: Year 7 Scratch Programming

Sequencing

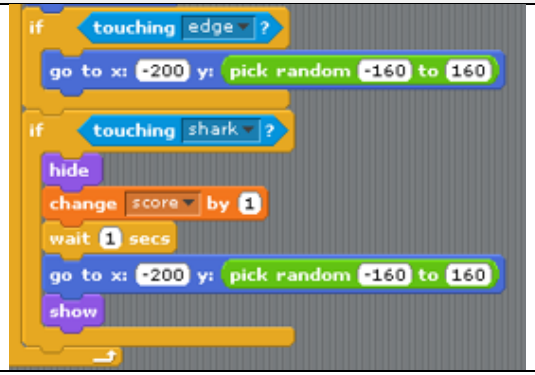
Sequencing is the specific order in which instructions are executed.



Selection

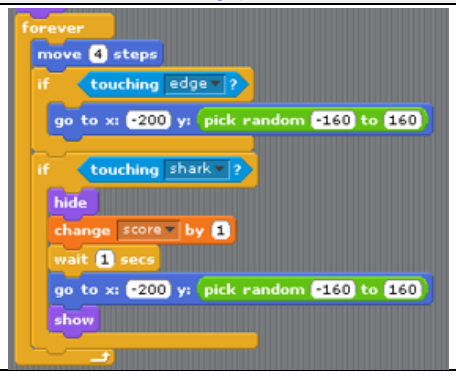
Selection is where a program may need to ask a question because it has reached a step where one or more options are available.

Depending on the answer given, the program will follow a certain step and ignore the others.



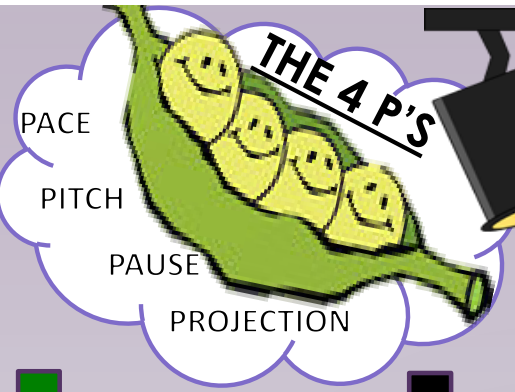
Iteration (known as a Loop)

Iteration means repeating steps, or repeating instructions, over and over again. This is often called a 'loop'.



Tasks

- **Task 1** - What is Scratch?
- **Task 2** - What is a sprite?
- **Task 3** - What is an algorithm?
- **Task 4** - What is a variable?
- **Task 5** - Describe sequencing?
- **Task 6** - Describe selection?
- **Task 7** - Describe iteration?



The next two schemes are:

Physical Theatre

New Skill/Technique **Retrieval**

Knowledge/ skill	Definition
Stimuli	The starting point, idea or inspiration for your devised **drama**. It is what you base your **drama** around.
Gesture	In **acting gesture** is **defined** as a sign that communicates a character's action, state of mind and relationship with other characters to an audience.
Still Image or Freeze frame	This is where the action freezes as if someone has taken a picture midway through a performance. Conveys meaning and highlights the current scene.
Body as Prop	A genre (type) of drama that tells a story using over exaggerated movement. and physicality. Body as Prop Using your body to create props and objects on stage.
Improvisation	A very spontaneous performance without specific or scripted preparation.
Transition	This is the process in which something changes from one state to another
Movement	Where we move to on and around the stage avoiding the blocking another actor.
Physical Theatre	**Physical theatre** is a well-known genre of theatrical performance that encompasses storytelling primarily through **physical** movement.
Role Play	Role play is the act of imitating the character and behaviour of someone who is different from yourself.
Promenade theatre	In promenade theatre there is no formal stage, both the audience and the actors are placed in the same space.
Narration	A commentary delivered to accompany a performance.
Slow Motion	Performing in manner whereby the action appears much slower than in real life.

Gecko Youtube Channel

What is promenade theatre?

What are the constraints of 'Theatre in The Round?'

What performance skills can we use to show emotion?

BUT DO ENJOY YOURSELVES!

WATCH LIST FOR THIS TERM (IF YOU CAN):

Frantic Assembly: What is Physical Theatre?

Gecko 'The Time of your life' 2016

Youtube Channel: DV8 Physical Theatre

Key performance terminology for this term:

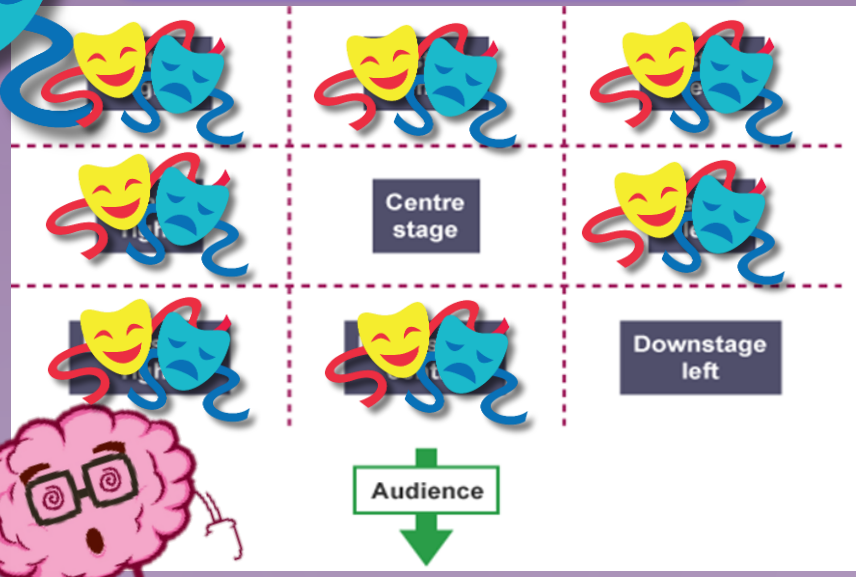
Physical Skills...(Skills that involve using your BODY)

1. Body Language	How an actor uses their body to communicate meaning. For example, crossing your arms could mean you are fed up.
2. Posture	The position an actor holds their body when sitting or standing. For example, an upright posture.
3. Gait	The way an actor walks.
4. Facial Expressions	A form of non-verbal communication that expresses the way you are feeling, using the face.
5. Gestures	A movement of part of the body, especially a hand or the head, to express an idea or meaning.
6. Stance	The way you position yourself when standing to communicate your role. An elderly person would have a different stance to a child!

Vocal Skills...(Skills that involve using your VOICE)

1. Projection	Ensuring your voice is loud and clear for the audience to hear.
2. Volume	How loudly or quietly you say something. (Shouting, whispering)
3. Tone	The way you say something in order to communicate your emotions. (E.g. Angry, worried, shocked tone of voice)
4. Pace	The speed of what you say.
5. Pause	Moments of pause can create tension, or show that you are thinking.
6. Accent	Use of an accent tells the audience where your character is from.
7. Pitch	How high or low your voice is.
8. Emphasis	Changing the way a word or part of a sentence is said, in order to emphasise it. (Make it stand out.) Try emphasising the words in capital letters and see how it changes the meaning: "How could YOU do that?" "How could you do THAT?"

Stage positioning



Week 1	Week 2	Week 3
Draw out the stage positioning grid and uncover our Drama faces!	Create an information poster on the Physical Theatre Company 'Frantic Assembly'	List the important skills/techniques needed for effective physical theatre

Week 4	Week 5	Week 6
Access the GCSE Bitesize Quiz	Watch a Gecko Performance on youtube	Write a list of the skills you have explored/used this term – be proud!

Year 7 – Fruits, Vegetables and Sensory Evaluation

Key Vocabulary

Sensory Evaluation: judging food on its appearance, aroma, flavour and texture.
Sensory attributes: appearance, aroma, flavour, and texture of foods detectable by our senses, often used to evaluate food quality.
Sensory Descriptor: a word used to describe food by its appearance, aroma, flavour, and texture

Types of Fruits

Fruits are split into different groups:

- Soft fruits – strawberries and raspberries
- Citrus fruits – oranges, lemons and limes
- Stone fruits – peaches, mangos and plums
- Tree fruits – apples and pears
- Exotic fruits – banana, kiwis and melons

Fruits and Vegetables

- We should all aim to have at least 5 portions of a variety of fruit and vegetables each day.
- Fruit and vegetables should make up around one third of what we eat each day.
- Fruit and vegetables are a very important part of a healthy, balanced diet, as they are good sources of fibre, as well as providing essential vitamins and minerals.
- Eating lots of fruit and vegetables can help maintain a healthy weight and having your 5 A DAY could reduce your risk of some diseases.

Types of Vegetables

Vegetables are split into different groups:

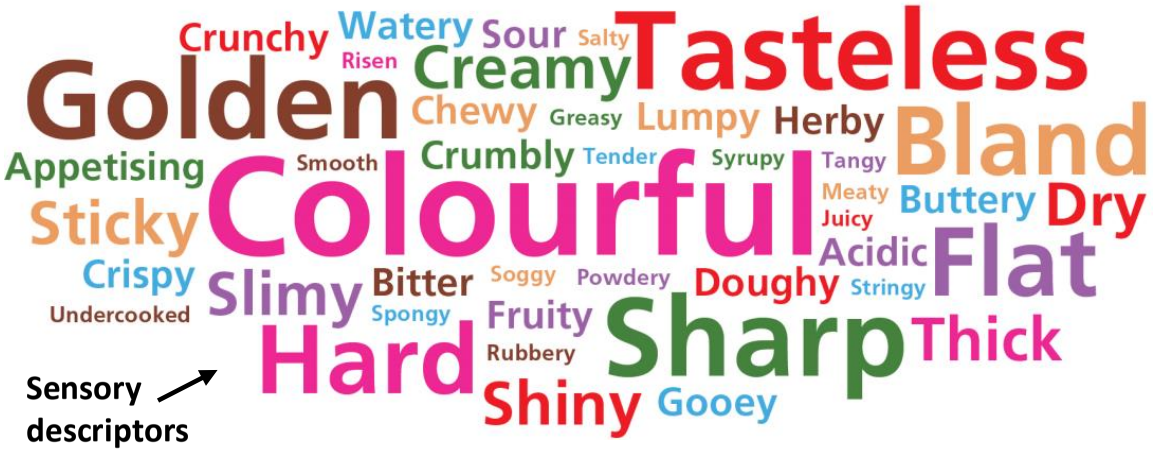
- Fruit vegetable – aubergine, tomato & cucumber.
- Seeds and pods – peas, beans and lentils.
- Flower vegetables – broccoli and cauliflower.
- Leafy vegetables – spinach, cabbage, and lettuce.
- Stem vegetables – asparagus, fennel and celery.
- Tubers – potatoes, sweet potatoes and yams.
- Fungi – different types of mushrooms.
- Bulbs – onions, garlic, shallots and leeks.
- Roots – beetroot, swede, carrot and radish.

Weekly Tasks

Task 1: Choose your favourite food or snack and use 2 words to describe the appearance, aroma, flavour and texture.
Task 2: Create your own sensory word bank like the one in your knowledge organiser. Think of 10 words for each of the senses.
Task 3: Design a pizza with lots of difference toppings. Using the word bank, make a list of tastes and flavours you would or would not like on your pizza.
Task 4: Complete a sensory evaluation of your latest food practical dishes.
Task 5: List 10 sensory descriptors and in a separate column, list the words that represent the opposite, for example: flavourful / bland.
Task 6: Create a quiz that you could use to test someone else's knowledge of sensory evaluation.

Sensory Evaluation

When eating food, you are judging the following sensory attributes:
Appearance (what does the food look like?)
Flavour (what does the food taste like?)
Aroma (what does the food smell like?)
Texture (what does the food feel like?)
Judging food based on these characteristics is called sensory evaluation.



Year 7 – Fruits, Vegetables and Sensory Evaluation

Sensory Word Bank

Appearance

*Attractive
*Bright
*Colourful
*Golden Brown
*Cracked
*Crispy
*Crumbly
*Crunchy
*Delicate
*Dry
*Dull
*Firm
*Flaky
*Fragile
*Fresh
*Heavy
*Moist
*Pale
*Smooth
*Soggy
*Spongy
*Stringy
*Wet

A products size, shape and colour and surface texture can be described.

Aroma

*Artificial
*Bland
*Floral
*Fruity
*Minty
*Natural
*Nutty
*Plain
*Zesty
*Rich
*Salty
*Smokey
*Sour
*Spicy
*Sweet
*Stale
*Yeasty
*Cheesy
*Burnt
*Lemony
*Minty
*Savoury
*Spicy
*Tart

The nose detects volatile aromas released from food.

The intensity can also be recorded.

Sensory Vocabulary

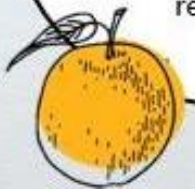
When we evaluate our products it is so important to use specialist terminology. Can you talk like a food critic? When you evaluate look at the different characteristic of food:

Appearance, Aroma, Taste and Texture

Taste

*Acidic
*Aftertaste
*Artificial
*Bitter
*Bland
*Creamy
*Dry
*Fruity
*Overpowering
*Plain
*Rich
*Savoury
*Sharp
*Sickly
*Stale
*Sweet
*Sugary
*Tangy
*Yeasty
*Citrus
*Nutty
*Meaty
*Tasteless
*Zesty
* Flavoursome

The tongue can detect four basic tastes; sweet, sour, salt and bitter. The intensity can also be recorded.



Texture

*Bitty
*Brittle
*Bubbly
*Chewy
*Crispy
*Dry
*Firm
*Flaky
*Fluffy
*Grainy
*Hard
*Lumpy
*Moist
*Rubbery
*Smooth
*Soft
*Soggy
*Spongy
*Stodgy
*Tough
*Wet
*Stretchy
*Thick

Spanish - Key verbs and vocab

Key phrases

1. **Tengo el pelo rubio y corto** – I have short, blonde hair.
2. **Tengo los ojos verdes** – I have green eyes.
3. **Tengo tres peces** – I have three fish.
4. **Mi tortuga es muy tímida** – My tortoise is very shy.
5. **Me chifla escuchar música** – I'm crazy about listening to music.
6. **Odio jugar a los videojuegos** – I hate playing videogames.
7. **Siempre bailo** – I always dance.
8. **Nunca saco fotos** – I never take photos.
9. **Cuando hace calor leo** – When it's hot I read.
10. **Cuando nieva salgo con mis amigos** – When it snows I go out with my friends.
11. **¿Te gustaría ir al la piscina?** – Would you like to go to swimming pool?
12. **Lo siento, no puedo** – I'm sorry, I can't.

Me llamo Juan y tengo **doce** años. Tengo el pelo **castaño** y **largo** y los ojos **marrones**. Hay cuatro personas en mi familia y tengo una **serpiente verde**. Es muy **tímida**.
En mi tiempo libre **me encanta salir con mis amigos** o **leer** porque es **relajante** sin embargo **no me gusta chatear en línea** porque no es **entretenido**. Los martes siempre **monto en bici** y cuando hace buen tiempo **juego al fútbol** en el parque. En mi opinión **montar en bici** es **activo** pero nunca **bailo** porque es **aburrido**. A veces **hago natación** porque es muy **interesante**.

Para ir más lejos: (To go further…)

Link to BBC Bitesize

Your teacher should have given you your username and password for **Languagenut**. Log in and complete some of the revision games on there. It's great for practising speaking and listening skills!

Task 1: Practice key phrases 1-6 – look, cover, write, check, correct x 3. Read the sentences out loud to practice your pronunciation.

Task 2: Practice key phrases 7 -12 - look, cover, write, check, correct x3. Read the sentences out loud to practice your pronunciation.

Task 3: Pick one of the boxes of vocab from page 2 and draw a picture to represent each phrase in that box.

Task 4: Read through the model paragraph and translate what you can into English.

Task 5: Re-write the model paragraph, changing the underlined words and phrases. Try to do this without looking at the vocab!

Task 6: Teach it! Create a resource that will help teach others these key phrases. It could be a poster, a PowerPoint presentation, a leaflet or anything else. If you can, stick it in your home learning book.

Task 7: Write a paragraph about yourself FROM MEMORY! Then check it over with your red pen. Read it out loud to a member of your family to practice your pronunciation.

Spanish - Key verbs and vocab

Opiniones - opinions

Me gusta – I like
Me gusta mucho – I really like
Me encanta – I love
Me chifla – I'm crazy about

No me gusta – I don't like
No me gusta nada – I really don't like
Odio – I hate
No soporto – I can't stand

porque… - because
porque es… - because it is
porque no es… - because it isn't

interesante – interesting
guay – cool
divertido/a – funny / fun
estúpido/a – stupid
aburrido/a – boring
entretenido/a – entertaining
activo/a – active
sano/a – healthy
relajante – relaxing
emocionante - exciting

Actividades - activities

chatear en línea - to chat online
escribir correos - to write emails
escuchar música - to listen to music
jugar a los videojuegos - to play videogames
leer - to read
mandar sms - to send text messages
navegar por internet - to surf the net
salir con mis amigos - to go out with my friends
ver la televisión - to watch t.v
jugar al fútbol – to play football

El presente – present tense

bailo - I dance
canto karaoke - I sing karaoke
hablo con mis amigos - I talk with my friends
monto en bici - I ride my bike
saco fotos - I take photos
salgo con mis amigos – I go out with my friends
toco la guitarra - I play the guitar
hago artes marciales - I do martial arts
hago atletismo - I do athletics
hago equitación - I do/go horse riding
hago natación - I go swimming
juego al baloncesto - I play basketball
juego al fútbol - I play football
juego al tenis - I play tennis
juego al voleibol - I play volleyball

El tiempo –the weather

Cuando… - when
hace calor - it's hot
hace frío - it's cold
hace sol - it's sunny
hace buen tiempo - it's nice weather
llueve - it's raining
nieva - it's snowing

Adverbios de tiempo – Time phrases

A veces - sometimes
De vez en cuando - From time to time
Nunca - never
Todos los días - everyday
Siempre – always

Los lunes - On Mondays, every Monday
Los martes – On Tuesdays, every Tuesday
Los miércoles – On Wednesdays, every Wednesday
Los jueves – On Thursdays, every Thursday
Los viernes – On Fridays, every Friday
Los sábados – On Saturdays, every Saturday
Los domingos – On Sundays, every Sunday

En primavera – in Spring
En verano – in Summer
En invierno – in Winter
En otoño – in Autumn

Year 7
William Shakespeare
Romeo and Juliet

Structure and Form

Term	Definition
Prologue	An introductory section to a piece of literature or drama.
Rhyming couplet	Two lines of the same length that rhyme.
Soliloquy	A character speaking alone, voicing their thoughts out loud.
Aside	A comment made by a character, only to be heard by the audience.

Themes

Theme	Description
Fate	**Fate** is something that is meant to happen. In the play, this is Romeo and Juliet's relationship.
Love	The main point of the plot is that Romeo and Juliet fall in **love**.
Conflict	The Montagues and the Capulets have an ongoing feud, which results in **conflict** and violence.
Religion	Shakespeare uses religious imagery to show the purity of Romeo and Juliet's love. **Example**: *"O speak again, bright **angel**"*

Characters

Character	Description
Romeo Montague	Young and romantic. Falls in love with Juliet.
Juliet Capulet	Beautiful and naïve. Falls in love with Romeo.
Benvolio Montague	Cousin and protector of Romeo.
Tybalt Capulet	Violent and spiteful cousin of Juliet.
Mercutio	Best friend of Romeo. Neither a Montague nor a Capulet.
Friar Lawrence	Marries Romeo and Juliet with hopes to end the families' feud.

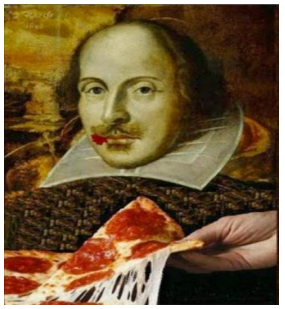
Literary Terms

Term	Definition
Simile	A comparison using the words 'like' or 'as' **Example:** *"My bounty is **as** boundless **as** the sea"*
Metaphor	A description saying something is something else **Example:** *"**I am** the East and Juliet **is** the sun."*
Personification	Giving human qualities to something that us not human. **Example:** *"Then love-devouring **death** do what **he** dare."*
Foreshadowing	A hint at what is to come next. **Example**: Friar Lawrence discusses "violence" just before a fight scene.
Rhyme	Words that sound similar. **Example:** *"Did my heart love till now, forswear it **sight**, For I ne'er saw true beauty till this **night**."*
Sonnet	A poem of 14 lines, usually to express love. **Example:** Romeo and Juliet's first conversation is written in sonnet form.

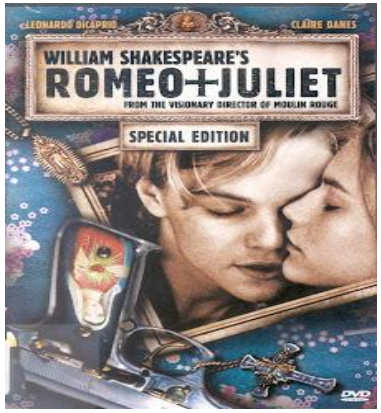
Romeo and Juliet Home Learning - Shakespeare

Research five things about William Shakespeare	Create a information poster about William Shakespeare and find out about three of his plays.	Research William Shakespeare's life. Write a short pamphlet with sub-headings that tells you about his life.
Create a family tree for the characters in Romeo and Juliet.	Research the key themes in Romeo and Juliet and create Theme Cards for each one.	Create an advertising campaign for The Globe Theatre. You need to include a logo, a slogan and a production poster for the play.
Research the key themes of Romeo and Juliet and create your own Knowledge Organiser	Research the treatment of women in the time Romeo and Juliet was set. How has it changed?	What was the legal age for marriage in Elizabethan times? Write an argument for why this should be raised.
Find out what 'foreshadowing' is and research how this is used in the play.	Which house would you belong to: Montague or Capulet? Why? (at least three reasons/paragraphs)	Create a poster showing how symbolism is used in Romeo & Juliet.
Create an ingredients list and method for creating the poison.	Create a rhyming poem that helps you remember the key characters.	Create a new character to be included in the play. Explain their importance and what influences they would have.
Create a new character to be included in the play. Explain their importance and what influences they would have.	Imagine you are Lady Capulet. Write a letter to an agony aunt asking for advice about your wayward daughter.	Write an alternative ending to the play. Do not use 'happily ever after'.
Create a 10 frame storyboard of the play	Create a 10 frame storyboard of the play	Create a set of Top Trump cards for each of the characters in the play.

Easy Difficult Challenging



Click on the QR code to take you to BBC Bitesize revision for Romeo and Juliet



Key process- erosion

Abrasion- This is the process by which the bed and banks are worn down by the river's load. The river throws these particles against the bed and banks, sometimes at high velocity.

Hydraulic Action- This process involves the force of water against the bed and banks.

Solution (Corrosion) - This is the chemical action of river water. The acids in the water slowly dissolve the bed and the banks.

Attrition- Material (the load) carried by the river bump into each other and is smoothed and broken down into smaller pieces.

Key process- transportation

Traction - Where large rocks and boulders are rolled along the river bed.

Saltation - Where smaller stones are bounced along the river bed in a leap frogging motion.

Suspension- Where very small grains of sand or silt are carried along with the water.

Solution - Where some material is dissolved (like sugar in a cup of tea) and is carried downstream.

Key process- deposition

When a river loses energy, it deposits (drops) its load.

The hydrological cycle- key terms

Evaporation-The change of water from a liquid to a gas.

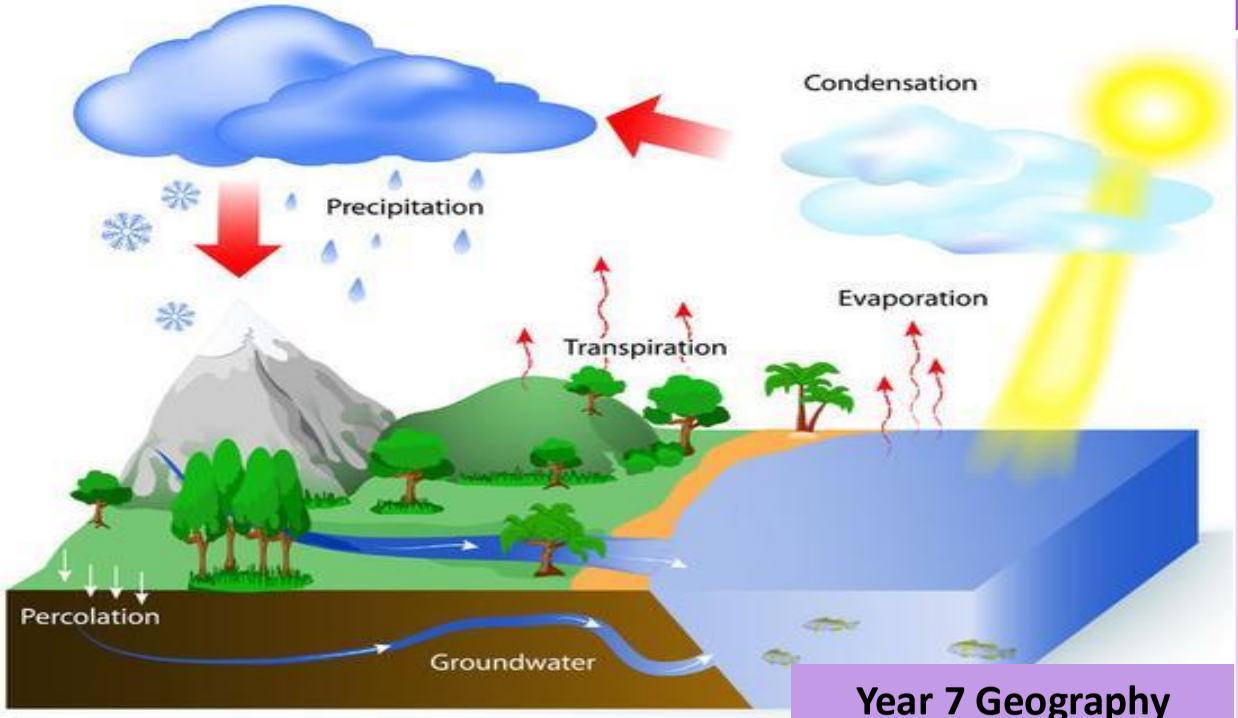
Condensation- The change of water from a gas to a liquid.

Precipitation- Water falling from the sky (e.g. rain, sleet, hail, snow).

Transpiration- The release of water vapour from the leaves of trees of plants.

Throughflow- Flow of water though the soil.

Infiltration- When water soaks down through the ground.



Tasks- if you complete all 7, revisit some or all from memory

Task 1: Learn the key processes of erosion.
Task 2: Learn the key processes of transportation.
Task 3: Revise the diagram of the hydrological cycle, then cover it and draw the diagram from memory, then self assess and add any detail you have missed.
Task 4: Learn the key terms linked the hydrological cycle.
Task 5: Draw 4 small diagrams that help you remember the key processes of transportation.
Task 6: Create a quiz linked to erosion, transportation and deposition. Max 10 questions.
Task 7: Extension- find out what the key terms percolation and groundwater mean and write down a definition for each. Make sure the definitions link to rivers & geography.

Year 7 Geography

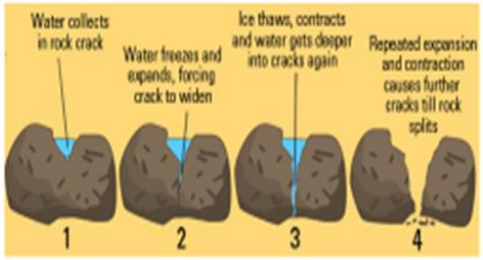
Where are arid environments located?

Weathering

- Rocks on the earth's surface are broken down in their place of origin – i.e. In situ.

There are 3 types of weathering;

- **Physical / Mechanical** : Disintegration of rock without a chemical change e.g. freeze-thaw/exfoliation.



- **Chemical**: The decomposition of the rocks is caused by a chemical reaction within the rock. E.g. acidic rainwater / alkaline seawater and limestone.
- **Biological:** Rocks are broken down by the action of plants and animals e.g. plants roots break apart rocks, animals burrow into banks and some plants can release chemcials that can dissolve rocks slowly over time.

Tasks- if you complete all 7, revisit some or all from memory

Task 1: Learn the names of the Earth's main deserts.
Task 2: Learn the location of the Earth's main deserts using the map.
Task 3: Read over the 3 types of weathering and then cover and write down what you can remember.
Task 4: Draw 4 small diagrams that help you remember the key processes of weathering.
Task 5: Read the bullet points on what are arid environments and create 5 questions with answers based on the information.
Task 6: Extension- find out how plants are adapted to survive in a desert. Choose one to investigate and draw a labelled diagram to highlight its adaptations.
Task: 7 Extension- find out how animals are adapted to survive in a desert. Choose one to investigate and draw a labelled diagram to highlight its adaptations.
Task 8: If completed tasks, redo 1,2,3 and answer your questions from task 5.

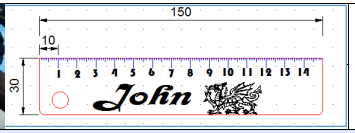
Year 7 Geography Arid Environments K0

What are arid environments?

- Arid environments (deserts) are usually found near to the Equator in between the Tropics of Cancer and Capricorn.
- Typical environments are mainly hot and dry.
- Arid environments: receive under 250mm of rain per year.
- Largest hot desert is the Sahara which is located in the continent of Africa. Stretches over many countries such as Algeria, Chad, Egypt, Libya, Mali, Mauritania, Morocco, Sudan and Niger.
- Antarctica is classed as a desert because it gets less than 200mm of rainfall.

DESIGN TECHNOLOGY KNOWLEDGE ORGANISER

Topic: CAD/CAM Ruler Project



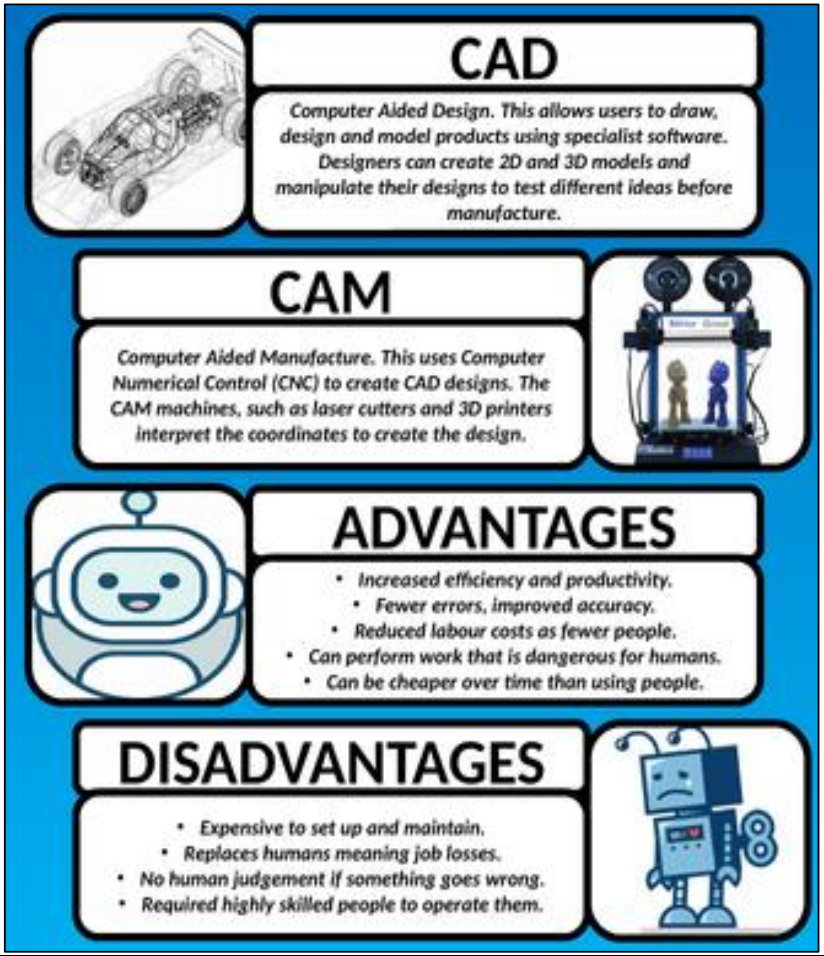
YEAR 7 DT

Computer aided design - CAD

Design software such as 2D design or Sketchup, allow the designer to draw a product in detail. Products can be designed and modified quickly. CAD allows for the testing of prototypes during the design process, without the need to make it.

Computer aided manufacture - CAM

Once a prototype design has been produced, it can be manufactured on a CNC machine or Laser Cutter. Computer Aided Manufacture (CAM) has meant that products and components can be made repeatedly to the same high standard.



Focused Topics

THERMOSETTING PLASTICS

THESE ARE PLASTICS THAT ONCE HEATED AND MOULDED, CANNOT BE REHEATED AND REMOULDED. THE MOLECULES OF THESE PLASTICS ARE CROSS LINKED IN THREE DIMENSIONS AND THIS IS WHY THEY CANNOT BE RESHAPED OR RECYCLED. THE BOND BETWEEN THE MOLECULES IS VERY STRONG.

UREA FORMALDEHYDE	SOME ADHESIVES (GLUES)	POLYESTER RESINS
POLYURETHANE	SILICONE	MELAMINE FORMALDEHYDE
BAKELITE	MELAMINE RESIN	DUROPLAST

THERMOPLASTICS

THESE PLASTICS CAN BE RE-HEATED AND RE-SHAPED IN VARIOUS WAYS. THEY BECOME MOULDABLE AFTER REHEATING AS THEY DO NOT UNDERGO SIGNIFICANT CHEMICAL CHANGE. REHEATING AND SHAPING CAN BE REPEATED. THE BOND BETWEEN THE MOLECULES IS WEAK AND BECOMES WEAKER WHEN REHEATED, ALLOWING RESHAPING. THESE TYPES OF PLASTICS CAN BE RECYCLED.

ACRYLIC (KNOWN ALSO AS PERSPEX)	POLYPROPYLENE (PP)	NYLON
POLYVINYL CHLORIDE (PVC)	LOW DENSITY POLYTHENE (LDPE)	
POLYSTYRENE	HIGH IMPACT POLYSTYRENE (HIPS)	TEFLON

Key Terms

Automation- Using automatic equipment in production – e.g. robots

Computer aided design (CAD)-The process of creating a 2D or 3D design using computer software.

Computer aided manufacture (CAM)-The manufacture of a part or product from a computer aided design (CAD) using computer-controlled machinery, such as a 3D printer.

Laser cutting- a technology that uses a laser to cut materials

Thermoplastic- types of plastic which become soft when they are heated

Tasks

Task 1: Create a mind map about the thermoset plastics.
Task 2: Create a mind map about the thermoplastics.
Task 3: Create 6 questions that can be answered from the information on the knowledge organiser.
Task 4: Create a quiz based on task 1, 2 or 3. Get someone to test you.
Task 5: Create a mind map for the information you remember and red pen anything you've forgotten.
Task 6: Teach it. Create a task that can be used to teach some of the information from here.

To go further:

Introduction to 3D modelling: SketchUp

Precious Plastic - The basics of plastic

ART KNOWLEDGE ORGANISER

Topic: Pop Art (producing outcomes)

YEAR 7
Term 2b

History/Context:

During this term, you'll be looking at the work of Pop Artists and developing your own art, applying the key trends of this art movement.

Pop Art is one of the most instantly recognizable forms of Art. It was characterized by a bold, bright predominantly primary colour palette (red, yellow, blue), with the use of black outlines and white space. This art movement was governed by, popular commercial culture, everyday recognizable imagery/objects, branded products and celebrities.

Artists of this movement created work in various ways:

Printmaking: an art technique, which allows you to transfer an image from one surface to another.

- Andy Warhol used **silkscreen printing,** a process where inks transferred onto paper through a mesh screen with a stencil.
- Roy Lichtenstein used **lithography,** or printing from a metal plate, to achieve his signature visual style

Mixed media and collage: Pop artists often use more than one material in their artwork. They also collected found images and applied collage with scissors and glue.

- Peter Blake and Robert Rauschenberg, both used mixed media and collage techniques in their work.

Home Learning tasks:

Week 1: Practice key phrases 6 -10 - look, cover, write, check, correct x3. Read the sentences again and check for understanding

Week 2: Watch the Video of Roy Lichtenstein's 'work in Life'. See QR code below. Produce a mind map of key elements from this.

Week 3:. Create a piece of artwork using the everyday object 'a Coca-Cola can'. Consider the key elements of the Pop Art movement:

- Bold opaque colour, primary and secondary
- A black outline
- The cola can
- Pop art patterns
- Layers
- Onomatopoeia: which links with the sound of a fizzy drink.

Moving fonts/text.

Week 4: Create your own pop-art portrait, this task will need to be split over 2 home learning sessions as it will take 40 minutes. Start in this session by drawing the outline of your face, look in a mirror and draw in your book the key features of your face. Keep this as an outline.

Week 5: This week you should now consider adding colour and pop-art inspired patterns to begin to make your portrait more 'pop-art'. Think carefully about a colour palette and use a variety of materials if you have them.

Week 6: Create a poster that gives us an overview of the theme of 'Pop-Art', including information about one of the pop artists you have been studying in class. You could choose from; Roy Lichtenstein, Peter Blake or Andy Warhol.

Key Literacy Vocabulary:

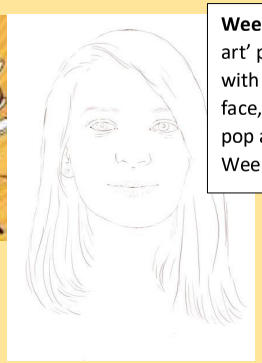
1. **Composition:** the arrangement or placement of visual elements in an individual piece of artwork. 'Putting a piece of art together', where you place things.
2. **Construct:** To build, create or make something.
3. **Pattern:** a regularly repeated arrangement. A design made from repeated lines, shapes, or colours.
4. **Opaque:** you cannot see through the colour. No light passes through.
5. **Primary colour**: The basic colours that can be mixed together to make secondary colours. These are Red Yellow and blue.
6. **Secondary colour:** A colour which results in mixing the two primary colours:
   - **Red +Yellow = Orange**
   - **Red + Blue = Purple**
   - **Blue + Yellow =Green**

   The secondary colours: orange, purple and green.
7. **Outline:** The line created on the outside of a shape image or lettering. It helps define something from the background.
8. **Mixed-med** the use of two or more art materials in one piece of artwork, for example: paint, colour pencil and collage.
9. **Collage:**
10. **Onomatopoeia:** a word that names a sound, for example: bang, zoom, whizz.

Week 2: scan this QR code to watch the video discussing Roy Lichtenstein.

Week 3: Create a piece of Artwork that with a coca-cola can. Think of a sound the drink makes when you open the can. Add an 'Onomatopeia' word: like this example 'Pop' for a champagne bottle.

What word will you use?



Week 4 & 5: Create a 'pop-art' portrait. Start in Week 4 with a basic outline of your face, then add colours and pop art style patterns in Week 5.

Week One

Using your Home Learning book, make a quiz containing at least 10 questions from the topic **Cells.**

Remember to include:

3. Answers to each question written in full sentences,
4. A variation in the type of question, Draw/state/explain etc.

Week Two

Read your knowledge organiser focusing on **Cells** for 5 minutes. Then turn the organiser over and write a short summary of the topic.

The summary should include:

1. No more than 40 words
2. And should be written in full sentences.

Week Three

Answer the following questions in full sentences in your home learning workbooks.

1. Name all the organelles that are in plants and animal cells
2. Name all the organelles found only in a plant cell
3. What is the difference between a cell wall and a cell membrane?
4. Define diffusion
5. Name two substances that must diffuse into cells from the blood stream
6. Name two substances that must diffuse out of cells into the bloodstream?
7. How are some cells adapted for more efficient diffusion?

Week Four

Pick 4 key words from the knowledge organiser page title **Body systems.** Using those 4 key words make as many links between the words as you can.

Remember to include:

1. The 4 key words you have chosen
2. The links you have made between the words, these should be written along the arrow that connects them.

Week Five

Using your Home Learning book, make a quiz containing at least 10 questions from the topic **Body Systems.**

Remember to include:

1. Answers to each question written in full sentences,
2. A variation in the type of question, Draw/state/explain etc.

Week Six

Answer the following questions in full sentences in your home learning workbooks.

1. Put the following in order starting from the smallest; organ, organelle, tissue, cell, organism.
2. Put the following in order, starting from the smallest; mitochondria, nerve cell, human, spinal cord, nervous system
3. Define the term 'tissue'
4. Define the term 'organ'
5. Name 3 organ systems in the body.

Have you completed your 4 daily goals?

Complete 4 daily goals each week to ensure success in Science! 😉

Home learning tips:

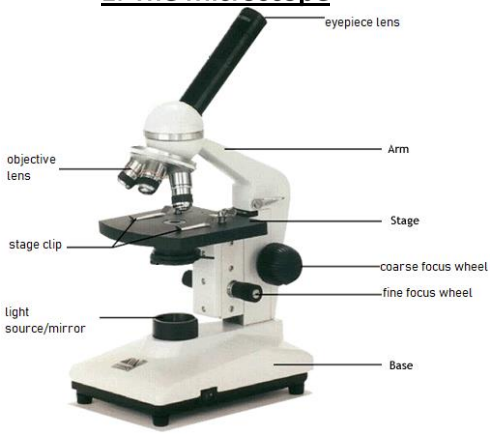
1. Answer any questions in full sentences.
2. Take your time reading through your knowledge organiser.
3. Read the task twice.
4. Ask your teacher in your next lesson if you are unsure about anything.
5. Not sure which week to do? Ask your teacher!

7.6 – Cells

What do I need to be able to do?

- Understand cells as the fundamental unit of living organisms
- Describe the functions of the cell wall, cell membrane, cytoplasm, nucleus, vacuole, mitochondria, ribosomes, and chloroplasts
- Compare the similarities and differences between plant and animal cells
- Understand the role of diffusion in the movement of materials in and between cells
- Identifying areas of high and low concentration to predict the movement of particles by diffusion
- Explain the structural adaptations of some unicellular organisms
- Describe the cycles of materials and energy
- Observe, interpret, and record cell structure using a light microscope

1. The Microscope



Eyepiece lens	Magnifies the sample
Objective lens	Magnifies the sample
Stage clip	Holds the slide in place
Light source/mirror	Directs light through the sample to illuminate it
Coarse focus wheel	Brings the specimen into approximate focus
Fine focus wheel	Sharpens the focus quality of the image

2. Using the Microscope

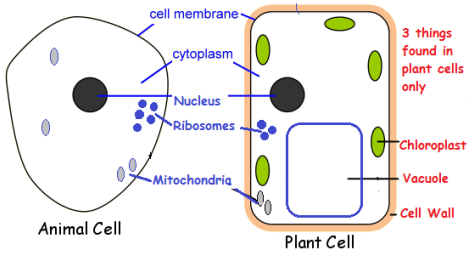
1. Carry the microscope with one hand holding the **arm** and one under the **base**
2. If necessary, plug in and turn on the microscope
3. Rotate the **nosepiece** and select the lowest power **objective lens**
4. Place the **specimen slide** onto the **stage** and clip in place
5. Look through the **eyepiece lens** and turn the **coarse focus wheel** until the specimen comes into view – take care not to get too close to the slide
6. Adjust the **fine focus wheel** until the image in view becomes clear
7. To view the specimen in more detail – rotate the nosepiece to a higher power objective lens and repeat steps 5 and 6

To calculate the total magnification of the image:
Total magnification = eyepiece lens power x objective lens power

To calculate the actual size of the specimen:
Actual size = image size ÷ total magnification

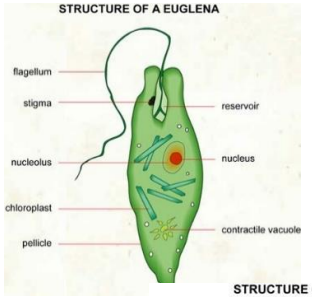
The image size (the size the specimen appears in the microscope view after magnification) can be measured using a ruler

3. Plant & Animal Cells

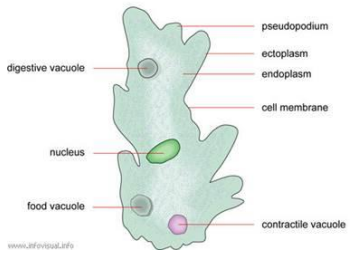


Nucleus	Contains the genetic information (DNA) that controls the activities of the cell
Cytoplasm	Gel-like substance where chemical reactions occur
Cell membrane	Controls what substances enter/leave the cell
Mitochondria	Where respiration occurs
Ribosomes	Where proteins are made
Chloroplasts	Where photosynthesis occurs
Vacuole	Filled with cell sap that keeps the cell firm
Cell wall	Supports the cell

4. Unicellular Organisms



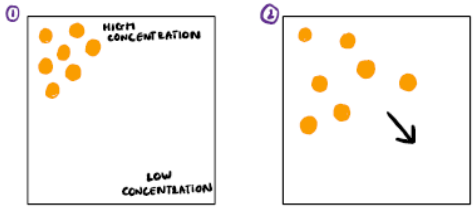
Flagellum helps the euglena to move around



An amoeba surrounds and engulfs food

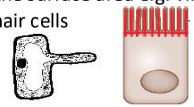
5. Diffusion

Substances enter cells from the blood stream, across the cell membrane, via **diffusion**. Substances leave cells by the same method



Hint – see 7.2 Particles & Their Behaviour

Cells are adapted to increase the efficiency of diffusion into and out of the cell by having folded membranes to increase the surface area e.g. villi epithelial cells and root hair cells



6. Respiration

Respiration is the chemical reaction in which energy is released from glucose

Aerobic Respiration	Anaerobic Respiration
Occurs in the presence of oxygen	Occurs with limited/no oxygen
Glucose + oxygen → carbon dioxide + water (+ energy)	**Animal cells:** Glucose → lactic acid (+ energy) **Plant cells and Yeast (unicellular organism):** Glucose → ethanol + carbon dioxide (+ energy)
✔ releases a lot of energy	✔ energy can be released quickly (e.g. when sprinting) and is not reliant on the delivery of oxygen to cells
✘ reliant on a constant supply of oxygen to cells	✘ releases a lot less in energy in comparison. Lactic acid causes pain and cramps

7. Specialised Cells

Not all plant and animal cells look like those above. Some have different features that make it better adapted to its function. They are specialised.

Cell	Diagram	Function	Features
Red Blood Cell		To transport oxygen to respiring cells	No nucleus to maximise surface area
Sperm Cell		To carry DNA to the egg cell	Lots of mitochondria 'Tail'
Palisade Cell (leaf cell)		Absorb light for photosynthesis	Lots of chloroplasts
Root Hair Cell		Absorb water and mineral ions	Large surface area Lots of mitochondria

7.7 – Structure & Function of Body Systems

What do I need to be able to do?

- Understand the hierarchical organisation of multicellular organisms: from cells to tissues to organs to systems to organisms.
- Describe the structure and functions of the human skeleton
- Describe the function of muscles and give examples of antagonistic muscles.
- Understand biomechanics – the interaction between skeleton and muscles
- Take measurements of force exerted by different muscles
- Describe the structure and functions of the gas exchange system in humans, including adaptations to function.
- Describe the mechanism of breathing to move air in and out of the lungs, using a pressure model to explain the movement of gases
- Take measurements of lung volume

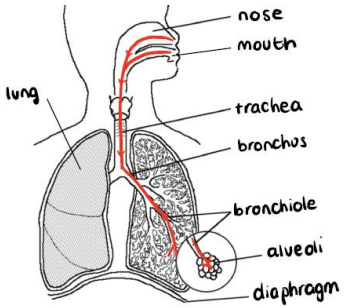
1. Levels of Organisation

Atoms make up our DNA and other necessary molecules for life e.g. proteins. These molecules then make up organelles, the structures inside cells and so on…

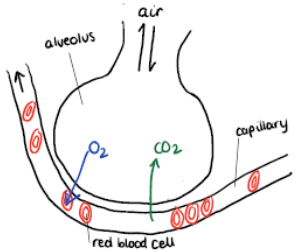
Level of Organisation	Definition	Example in humans
Organelle	Lots of different organelles work together to make a cell	Nucleus, mitochondria
Cell	The smallest functional biological unit, of which all organisms are composed	Red blood cell, nerve cell, sperm cell
Tissue	Lots of the same cell working together to perform a function	Muscle tissue, nerve tissue
Organ	Different tissues working together to perform a function	Stomach, brain, heart
Organ System	Different organs working together to perform a function	Respiratory system
Organism	Different organ systems working together to perform a function	Human, cat, fish,

2. Gas Exchange

This diagram shows the pathway air takes when it is inhaled.



This diagram shows the exchange of gases in the alveoli. Oxygen diffuses across the wall of the alveoli and into the capillary (blood vessel). Carbon dioxide moves in the reverse



3. Adaptations for Efficient Gas Exchange

During gas exchange – oxygen and carbon dioxide moves across the walls of the alveoli and capillaries by **diffusion.**

Revisit 7.2 and 7.6 for a refresher on diffusion

Gas exchange is important to get oxygen into the bloodstream so it can be delivered to **respiring** cells, and so the products of respiration can be brought to the lungs to be exhaled

Revisit 7.5 and 7.6 for a refresher on respiration

To ensure that diffusion of gases into and out of the alveoli is as efficient as possible, the alveoli has the following adaptations:

- Large surface area

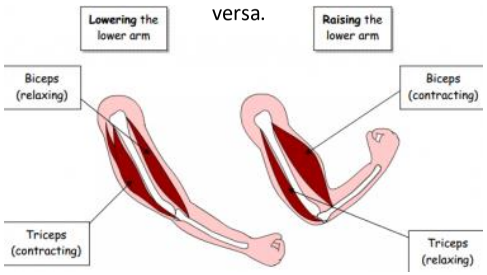
- Good blood supply – maintains the concentration gradient
- Thin walls (1 cell thick) – short diffusion distance

4. Muscles

The skeleton can move, at joints, but only by being pulled on by **muscles.**

Tendons connect muscles to bones. When a muscle **contract**s, it gets shorter and pulls on the tendon which moves the bone.

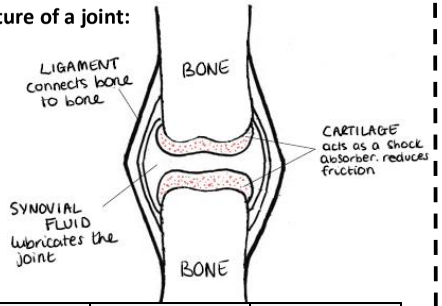
Muscles work in pairs to move bones at a joint, called **antagonistic** pairs. When one muscle contracts, the other relaxes and vice versa.



5. Joints

A **joint** is where two bones meet – allowing movement

Structure of a joint:



Type of Joint	Movement	Example
Hinge	Forwards & Backwards	Elbow, knee
Ball & Socket	In all directions	Shoulder, hip, neck
Fixed	None	Cranium (skull)

6. Skeleton

The skeleton is made up of 206 individual bones. It has some very important functions:

- **Support** – the skeleton helps to keep us upright
- **Protection** – the skeleton protects our organs
  Cranium – brain
  Rib cage – heart and lungs
  Vertebrae (spine) – spinal cord
- **Movement** – two bones meet at a joint to allow movement in that area
- **Making blood cells** – red and white blood cells are made in the marrow of bones

7. Breathing

	Inhalation	Exhalation
Intercostal muscles	Contract	Relax
Rib cage	Move up and out	Move down and in
Diaphragm	Contract Flattens (moves down)	Relax Returns to bell shape (moves up)
Lung volume	Increases	Decreases
Pressure in lungs	Decreases	Increases
Result	Air enters the lungs	Air leaves the lungs

Remember; **breathing** and **respiration** are not the same thing. Breathing is how we get the oxygen we need for respiration – a chemical reaction to release energy - into our blood, so it can be transported to cells.

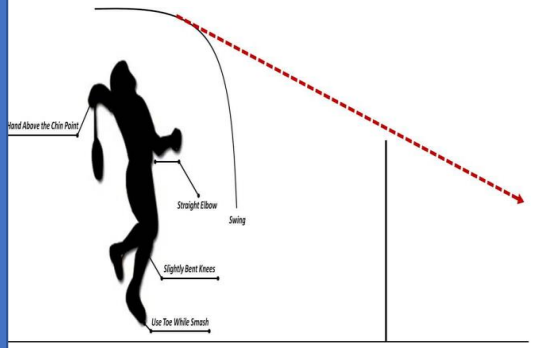
Rules of the game

Badminton Singles	Table Tennis Singles
1 LINES Remember long and narrow. Inner vertical lines, outside horizontal lines for everything. Anything in the space of these lines including touching the line is in and everything else is out.	Game is played to 11 points. A Game must be won by two points.
2 POINTS Not dots, but badminton points. Hit it in on their side or have your opponent hit it out on your side. As simple as that.	When serving each player has 2 serves each. However, if the score reaches 10-10 then the rest of the game is played one serve each
	You can serve to any side on your opponents side (doesn't have to be diagonal)
3 DON'T HIT ON THE OTHER SIDE If you hit the shuttle on the other side or touch the net, you lose.	ONLY when you serve you must hit the ball on your side of the table first then it must hit your opponent side.
	If the ball hits the net but goes over the net on a serve you retake the serve (let). If the ball hits the net but doesn't go over the net there is no 2nd serve.
4 SERVICE HEIGHT 1.15 meters. Or if you're a casual player, below the waist.	You MUST let the ball bounce once on your side of the table before making contact (no volleys)
	If the ball bounces twice on your side of the table you lose the point
5 EVEN RIGHT, ODD LEFT You have an even score? Right side. Odd score? Left side.	If you hit the ball and it misses the table you lose the point

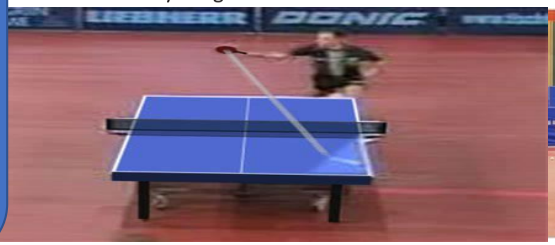
Smash shot

Coaching points

- **Raise your non-racket hand and point it above your chin. This is highly crucial, for a angled shot. It has part to play in the direction and pace of your shot.**
- **You should shift your weight on to your back foot, for balance.**
- **Straighten your elbows and swing the racket forward. Keep in mind to shuffle your racket foot forward and knees should be slightly bent.**

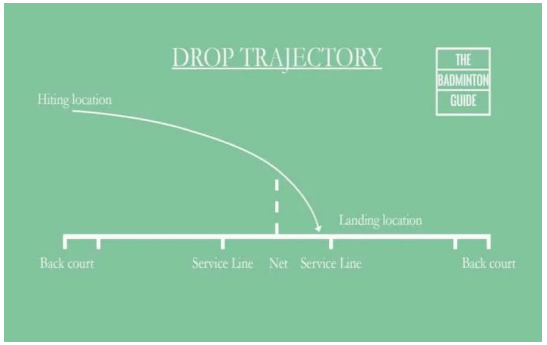


- Face sideways with your shoulder pointing towards the target.
- Body weight should be on the back foot.
- Raise the racket to a high position to generate downwards and forwards power.
- As the ball bounces off the table, rotate your body quickly to face forwards.
- Aim to hit the ball at its highest point.
- Transfer body weight from back to front foot.



Drop Shot

- Both of your hands should be upwards in the air, with the non-racket arm in front of your body, and the racket arm needs to be behind your head. The body weight should be on your racket leg.
- When the shuttle comes closer, you need to extend your non-racket arm and rotate the hip and shoulders towards facing the net. Hit the shuttle gently with the shuttle just in front of your body, but still high in the air. Unlike a smash, decelerate the racket head speed.



- A drop shot is a type of shot in table tennis in which the ball is hit softly and lands near the net. Table tennis is a sport that has a type of shot called "drop shots."
- These shots are hit softly and with a lot of touches, so the ball just clears the net and stays low.

Badminton Drop Shot

Table tennis Smash Shot

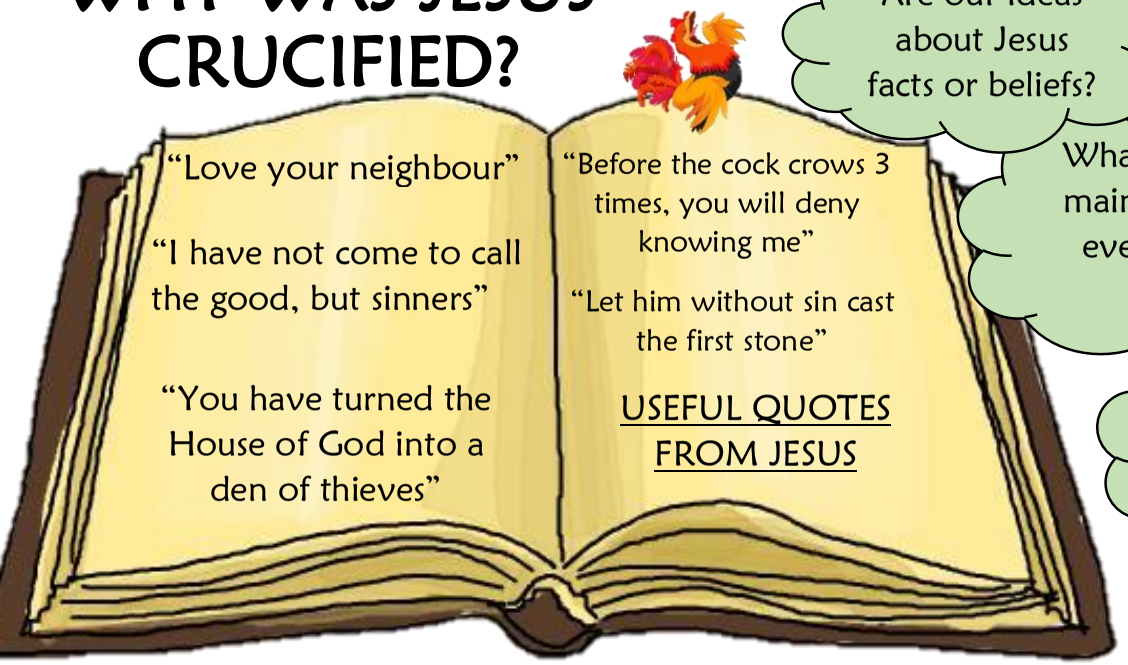
Table tennis

1) How many points are needed to win the game?
2) When performing a smash shot you hit the ball at its lowest point true or false
3) When would be a good time to perform a drop shot?
4) When you perform a drop shot, how should it be delivered/executed?

Badminton

1)True or False. All lines are in on the badminton court.
2) True or False. If you an even score you stand on the right and serve to the right.
3)When may you perform a drop shot and why would it be effective?
4)Can you name other shot types in badminton?

WHY WAS JESUS CRUCIFIED?



As we study think about…

reflection questions

- Are our ideas about Jesus facts or beliefs?
- What was Jesus' main purpose in everything he did?
- How did Jesus challenge people?
- Why did people follow Jesus?
- Why did some people hate Jesus?
- Why is the crucifixion and resurrection important for Christians?

KEY WORDS:

MIRACLE	A surprising event that defies natural laws	PARABLE	A story with a meaning, used by Jesus to communicate ideas about God
SABBATH	The Jewish holy day of rest and worship	BLASPHEMY	Saying something that is against God or making yourself equal to God
CRUCIFIXION	Being put to death by hanging on a cross. It was the worst punishment the Romans would give	TREASON	Saying something that is against the ruler/king or making yourself equal to the ruler/king
RESURRECTION	Coming back to life after you have died	PHARISEE	A Jewish holy man, responsible for teaching people about God
PROPHECY	Using the power of God to predict something that will happen in the future	FORGIVENESS	Having your sins taken away and no longer being responsible for something bad you have done
SIN	A bad action that goes against God's law	SAMARITAN	A person coming from Samaria (disliked by the Jews)

SOME TASKS FOR YOU TO COMPLETE

1. *Create a timeline of Jesus's last week*
2. *Create a mind map of the things Jesus did. Add the criticisms in a different colour*
3. *Draw a symbol for each key word*
4. *Write your answers to 3 reflection questions*
5. *Create a symbol for each of Jesus' teachings*
6. *Create key word flash cards or a quiz*
7. *Retell the Good Samaritan story in 4 images or less*

WHAT JESUS SAID:

- You can only judge people if you are perfect
- You should put God above everything in your life
- He came to help people who want to change
- We should love and help people in need

BUT…

- Sometimes we compare ourselves to others to improve our self-esteem
- Family and friends are important too
- Sometimes we don't want to change
- It's hard to be kind to people who we don't like or who treat us badly

THE PARABLE OF THE GOOD SAMARITAN

Teaches that we should love others and help them, WHOEVER THEY ARE

A Jewish man was left for dead on the road by robbers. A Jewish priest and a Levite walked past but did not help him. The man that finally helped him was a Samaritan (his enemy). He took him to safety and paid for him to be looked after.

WHAT JESUS DID:

- Jesus told a man his sins were forgiven
- He healed a man's hand on the Sabbath
- He rode into Jerusalem and was treated like a king
- He smashed up the stalls in the temple because they were disrespectful to 'God's house'

BUT…

- Only God can forgive sins
- Jews are forbidden to do anything on the Sabbath except worship God
- He is challenging the Romans because Caesar was king
- It is making the Pharisees angry because he is criticising them

THE MIRACLE OF HEALING THE PARALYSED MAN

Some men lowered a paralysed man through a roof to Jesus. He wanted to heal him so said, "Your sins are forgiven" but the Pharisees were not happy because it was blasphemy as only God can forgive sins. Jesus responded by instead telling the man to get up and walk and the man was healed.

Shows that Jesus has God's power to heal and forgive sins

Jesus' Last Week

SUNDAY: Jesus arrived in Jerusalem. People praised him as a **king and a saviour** but this **challenged the Romans** and the **Jewish leaders** who didn't believe he was a saviour. He smashed up the temple which angered the Jewish leaders who ran it.

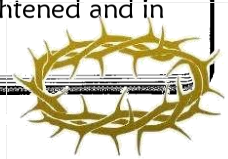
People were confused by Jesus' claims that he could **rebuild the temple in 3 days**. This seemed to be a challenge to them that he would destroy their building but many now see it as **a prophecy** by Jesus about what he would accomplish by dying and then resurrecting.

THURSDAY: At the last supper Jesus **predicted his own death,** saying that the bread was his body and the wine was his blood. He also said that Judas would betray him and told Peter that he would **deny knowing him.**

He was arrested in Gethsemane and taken to the Chief Priest's house where he was accused of **blasphemy.** They found him guilty but couldn't punish him so they took him to the Roman leader, Pilate and charged him with **treason.** Pilate could not find him guilty but sentenced him to be whipped and crucified.

FRIDAY: Jesus was **crucified**. He was humiliated as he carried his cross through the streets then on the cross he shouted **"My God, why have you given up on me?"**

He asked John to look after his mother then said **"It is finished"** and he died. The sky turned black and the disciples hid away because they were frightened and in despair.



SUNDAY: Mary and some other women went to the tomb and found it empty. The stone had been rolled away and the burial cloth was neatly folded. When Peter, James and John went and an angel told them Jesus had risen: **"Why do you look for the living among the dead?"**

Jesus appeared to many people. He **ate** with them, he **showed them his scars** and he **talked** to them about his life and death

SCAN ME

Learning to Learn

SCAN ME

The 'Listen' Project #1