

### Bottisham Village College

## KNOWLEDGE ORGANISER YEAR 7 TERM 3



## Bottisham Village College

At Bottisham Village College, we are striving to create a five-year curriculum plan that builds effective revision strategies into homework and lessons, to ensure that students are able to place powerful knowledge into their long-term memories. Additionally, we hope that this will help build effective learning strategies from early in their time here at the college.

Based on evidence, we know that regular recall activities are the best way of achieving this goal and committing powerful knowledge into the students' memories.

At the start of each term, we shall publish all the knowledge organisers that students will require for their studies in each curriculum area. These will cover a range of aspects: facts, dates, characters, quotes, precise definitions and important vocabulary. We are clear: if this fundamental knowledge is secured, students can then develop their higher-level skills of analysis and critical understanding with greater depth.

They will be given an electronic A4 Knowledge Organiser (KO) booklet for each term containing all of the knowledge required. In lessons, Bottisham staff will be regularly testing this fundamental knowledge, using short-quizzes or even more formal "Faculty Knowledge Tests".

The best way to use these organisers at home, is to follow a simple mantra:



- **1.** Look at a certain aspects of a particular knowledge organiser
- 2. Cover up part of their knowledge organiser
- **3.** Write it out from memory
- 4. Check and correct any spelling mistakes, missing bits or mistakes

So simple but so effective.

#### You will learn about the artist? Andy Warhol.

Andy Warhol sometimes chose

very ordinary things. He even did screen

prints of soup cans .

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- Artist research 1.
- 2. Page Layout
- 3. Note taking
- 4. Imitating sketches.



ART



You will continue to learn how to use start smart basic shapes and learn how to draw the shapes within objects and how to shade and tone appropriately





You will learn how to mix together secondary and primary colours to get a range of tones. You will also learn how to apply acrylic paint and keep within the lines and how to paint smoothly.



#### Depending on which Technology rotation students are on, they may be working in Computing, D&T or Food Technology

Unit Topics: Social Media Use How computers work Programming Programs use: GoogleSlides, GoogleDocs Microsoft Office Small Basic Crocodile Clips

#### **Digital Literacy**

#### ICT Legislation:

Computer Misuse Act. (1998) Data Protection Act. (2018) ICT Health and Safety Act. (1974) Copyright and Patents Act. (1988)

#### Password Management:

Between 5 – 12 characters. A mixture of letters, numbers and symbols. Memorable but not obvious.

#### File Management:

Save as – saving for the first time so you can choose a name and location. Save – updating an already saved file.

#### Networks:

**DNITUGMO** 

A network is a collection of computers connected digitally. There are different types of networks

including Local Area Networks, Wide Area Networks and the Internet.

## 09.\*<u>\*</u>



Input devices - put information into the computer. For example a keyboard, microphone or mouse. Output devices - allow the user to get data out of a computer (printed, seen, heard, watched). For example a screen, printer or headphones. Algorithm - an algorithm is a step by step

procedure to solve logical problems.

**Binary Code** – a number system in which there are only two possible states, off and on, symbolized by 0 and 1.



#### E-safety

Target Audience – the audience which a product is aimed at.

Age Restriction – an age limit in place to help protect users from seeing inappropriate content. Online Reputation – the image of yourself which is created through the things you do online.

Privacy Settings – the settings which can be applied so that you choose who sees your content. False accounts – social media accounts create to scam people.

Fake News – content which has been manipulated or incorrectly reported.





**Need help?** Search for: Childline, internetmatters, ceop or thinkuknow for information and advice. Depending on which Technology rotation students are on, they may be workingDepending onin Computing, D&T or Food TechnologyCo

#### What you will learn:

DESIGN & TECHNOLOGY

- Workshop and tool safety
- How to measure and mark out materials
- How to cut wood and polymers
- How to assemble parts and join materials
- How to read and draw simple plans (Orthographic drawing)
- How to draw3 dimensional objects and add shade, colour and annotation (Isometric drawing)
- The design process and key designers



#### Designer—William Morris

Key Term	Meaning
Face Side – Face Edge	Markings to show which way round you started to mark out your wood.
Steel Ruler	For measuring in millimetres (mm).
Try-square or Carpenters Square	For drawing 90 degree angles.
Waste Wood	The wood not needed (Marked with XXX's).
Scroll Saw	For cutting curves in thin plywood.
Pedestal Drill	For drilling holes.
Disc Sander	For sanding down to the line.
Tenon Saw	For cutting straight lines.
Bench Hook	Used to hold the wood on the bench.
G Clamp	Used to hold wood in place on the bench hook.
Vice	Used to hold the bench hook and the wood when sawing the ends.



Year 7 Knowledge organizer Design and Technology 'Out of the Box' Project

#### 1: JOINING METHODS

Permanent:	Temporary:		
When we do not want to take the pieces apart again	When we will, or might need to take pieces apart again		
Glues, welding, rivets	Screws, bolts, nails		

Wood joints can be either permanent of temporary depending on the type and if glue is used.





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1 cm = 10 mm

1m = 100cm or

1000mm

Mass: when you make thousands

Continuous: open ended production

4.1 Woods:				
Hardwoods:	Softwoods:			
Beech	Scots Pine			
Oak	Cedar			
Ash	Spruce			

#### 4.2 Engineered Boards

Engineered boards are manmade materials usually made by mixing wood chips and glues to make wooden sheets. Examples: Medium Density Fibreboard (MDF) Chipboard, Plywood and Hardboard

#### 4.3 Plastics

Plastics are made o mostly refined from categ	f <i>polymers,</i> and are oil. There are 2 main ories:
Thermoplastics	Thermosetting plastics
Acrylic	Urea Formaldehyde
Polypropylene (PP)	Melamine Formaldehyde
High Impact Polystyrene (HIPS)	Epoxy Resin

#### 4.4 Metals

Metals are hard and usually shiny, containing one or more elements dug and Refined from the ground

- Ferrous metals are any metal that contains iron and will rust
- Non-Ferrous metals do not contain iron and will not rust



#### **B: SURFACE FINISHES**

Finishing is usually one of the last stages of making a project. It will usually involve sanding and applying a surface coating to protect your material and make it look better.
<u>Some examples:</u>

Paint, Varnish, Oil, Wax, Polish & Dip Coating. Electroplating = coating one metal with another.

#### **Key Word Focus**

CAD	Computer Aided Design	
CAM	Computer Aided Manufacture	
Materials	Pewter, Medium Density	
Tolerance	Allowable amount of variation of a specific quantity	
Alloy	A mix of 2 or more metals	

You should be able to explain the meaning of each of these words by the end of this rotation.

## Poetry from other cultures

#### **Social and historical Context**

- The British Empire: All the countries which were once ruled by the British under the policy of colonialism. Even though the Empire has broken down, it has an impact on the politics of the world today and the identity and language of many.
- **Colonialism:** the policy of gaining political control over another country, occupying it with settlers, and earning money from it.
- **Immigration:** the action of coming to live permanently in a foreign country.
- **Displacement:** The displacement of people refers to the forced movement of people from their home or environment and occupation.
- The Middle Passage: The crossing from Africa to the Americas, which the ships made carrying their 'cargo' of slaves. It was so-called because it was the middle section of the trade route: Africa –America –Europe.
- Jim Crow Laws: Local and State laws that enforces racial segregation in the Southern United States until 1964.
- **Dialect:** a particular form of a language which is peculiar to a specific region or social group.
- **Slums:** A slum is usually a highly populated urban residential area consisting mostly of closely packed, housing in a situation of deteriorated or incomplete buildings.

	Notable Poets
John Agard	Bornin Guyana, he moved to England. He developed a love of language and began writing poems. He writes about place, conflict and identity.
Imtiaz Dharker	Shewas born in Pakistan before moving to Glasgow as a young girl. As an adult she moved to India.
Maya Angelou	Maya Angelou was an American poet, singer, memoirist, and civil rights activist. She gained fame for her autobiography <i>I know why the caged bird sings</i> .
Niyi Osundare	Born in Nigeria. Earned degrees from universitiesin Nigeria, England and Canada. He has always been a believer of the right to free speech and the power of words: "to utter is to alter".



Vocabulary to describe mood and feelings				
Despair	Threat	Isolation		
Anxiety	Doubt	Anger		
Confusion	Insecurity	Chaos		
Норе	Pride	Sarcasm		
Joy	confidence	optimism		
Pain	Coldness	Astonishment		
Beauty	cheer	playful		
judgement	unity	power		

# ENGLISH

## Poetry from other cultures



# Key ideas Culture Place Identity Nature Loss Anger Love

◊ Beauty

◊ Pride

ENGLISH

♦ Animals

#### **Key Poetic Techniques**

magery	Using language to paint different
Metaphor	Transforming one thing intoanother
Personification	making something seem alive;giving it human qualities
Alliteration	words starting with the same letter –
Dnomatopoeia	A word that sounds like the thing that it is describing eg. rumbles and jingle
lyperbole	an extreme exaggeration
ymbols	When an object is used to stand for
Repetition	When one word or phrase is repeated
lon-standard Inglish	Language which isn't the 'formal correct' English
imile	A way of describing something
Dxymoron	words that contrast each other that are placed next to each other

Structure			
Stanza	a verse		
Line Lengths	How long the lines are. Consider if they are the same or different? Why?		
Caesura	When there is punctuation in the middle of a line		
Enjambment	When 1 line of a poem runs into another		
Perspective	The point of view the poem is told from		
Regular Rhyme	When there is a consistent rhyme pattern i.e. aa bb or ababcc or ababcdcd		
Irregular Rhyme	When there is no, or a broken, pattern.		
Rhythm	The beat of the poem, how you deliver		

Depending on which Technology rotation students are on, they may be working in Computing, D&T or Food Technology

#### Skills to learn

- Chopping safely using the 'bridge and claw'
- How to 'rub in' butter
   and flour Kneading
- Mixing
- Whisking
- Frying

**JOIONH** 



#### CONVECTION

where heat is transferred through a fluid (liquid or gas), such as water, steam, oil and air

when a pan of water of placed on the cooker, the pan heats through conduction, the water them moves around the pan in a 'convection current', and transfers the heat to the food

deep frying is similar to this

when baking, the air is heated and travels around the oven, transferring the heat to the food



#### **Recipes to learn:**

- Fruit crumble
- Bread
- Bolognaise
- Omelette
- Cookies
- Rock cakes
- Tomato, bean and pasta soup
- Potato salad
- Pineapple upside-down
   cake
- Muffins





#### Scientific processes to learn

- Respiration yeast and bacteria break down sugars and carbohydrates
- Dextrinisation starch turns brown in dry heat
- Denaturation proteins change their structure when heated, whisked or mixed with acid
- Coagulation proteins set when heated
- Aerating adding air to a mixture to help it rise
- Caramelisation sugar turns brown

## Other topics to learn:

Nutrition and healthy eating

 which foods are part of a healthy diet and to know why.

**Food miles** – what are food miles, what is your carbon footprint and what can we do to reduce these.

Vegetarianism and special

**diets** – what are the medical, environmental, ethical and religious reasons to reduce eating meat. What does lactose intolerant and coeliac mean?



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#### **BILLY ELLIOT**

- Set in 1984 in County Durham.
- Themes of social inequality and gender stereotypes.
- Takes place during the Miner's Strike.

Billy Elliot: <u>https://</u> <u>www.youtube.co</u>

## **Musical Theatre**

#### **DANCE + ACTING + SINGING**

#### **Features of Musical Theatre:**

**Singing:** Chorus and Lead, Harmonies, Acting Through Song

**Dancing:** Unison groups, Mixture of Style, Character focussed

Acting: Heightened Naturalism, Accent, Direct Address

Here are some musicals we haven't studied that you may want to explore next!





#### HAIRSPRAY

- Set in 1950s/60s Baltimore, USA.
- Key themes are racial segregation, civil rights and body image.



#### Year 7 Geography: Globalisation

Key term		Definition	Key idea 1: The economies of countries vary					
Economy	\$	The state of a country in terms of its supply of money and the jobs people do	Economic variation HIC economies and LIC economies vary	in terms of:		UK	Cł	nina
Primary work		Jobs that involve collecting raw materials (e.g. farming or mining)	<ul> <li>Total income</li> <li>Average income</li> <li>How much they are growing</li> <li>The types of jobs that people do in</li> </ul>	each country			ax	25
Secondary work	F	Jobs that involve the processing of raw materials, or	Employment					
	000	manufacturing (e.g. carpentry)	Jobs can be divided into different category structure of a country will tell you a lot shows what types of job the majority of	ories (see keywords). The employment about the economy of that country as it people are doing, as the examples show.	Primar	y Secondary Tertiary	Primary Se	econdary Tertiary
Tertiary work		Jobs that provide a service (e.g. teachers, police)	Key ide	a 2: Globalisation n	nakes the v	world more	connected	I
Quaternary work	ja ji	Jobs in the 'knowledge economy' that involve research and the development of new ideas (e.g. research into cancer drugs)	Globalisation Globalisation has a range of different as more connected.	spects that make people around the world	37.de-			
Employment structure	$\checkmark$	The percentage of people in a country who work in each type of job		- 63 -	R	A 2	+	× _
ніс	Î	High income country	Money and goods	Information and communication		<b>9 1</b> 850 1850-193	) 10 1930-1950	1960s on 2000s on
LIC	\$	Low income country	un i <u>.</u>	4.	A shrinking w	orld? to transport throughout hi	story have repeatedly re	educed the times that it
Globalisation		The process of the world becoming more connected	People and culture	Transport Transport	has taken to tra	vel and communicate bety	veen different locations.	•
Trade	· <u>·</u>	An exchange between two parties (could be of money or	Key idea	3: Globalisation car	n have a ra	nge of diffe	rent impac	cts
		goods and be between people, companies or countries)	Positive impacts	Negative impacts	Impacts of diffe	rent groups of people		
Culture	<b>R</b>	The traditions and ways of living that people follow	Brings in wealth	LICs are exploited	Because globalisation has both positive and negative impacts, it means that some people are going to benefit more than others, depending on where they live and what sorts of je			ns that some people and what sorts of jobs
	~@		Highlights global issues	Local companies go out of business	they do. The peopl	e mentioned below will all	be affected in different	ways.
			Promotes diversity, tolerance and understanding	Homogenisation of culture – everywhere becomes the same	Kenyan tour guide	Peruvian cotton farmer	Chinese factory owner	British cancer researcher
			Allows for sharing of knowledge	Local traditions eroded	) J	Pa	Π	
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#### **GEOGRAPHY YEAR 7: ANTARCTICA**

#### Key Idea 2: The plants and animals of Antarctica are interconnected.

Food Web

in a food web.

Producers

			Definition
Continent	An area on the Earth that contains many different countries – 7 in total – Antarctica is a continent.	Climate Change	Evidence has shown that Earth's temperature is rising due to an increase in greenhouse gases. This has created, and will continue to create, a number of negative and positive effects.
Ecosystem	A group of living organisms interacting with the non-living parts of an environment. Ecosystems can vary in size, E.g. a single hedgerow or a whole rainforest.	Sustainability	Actions and forms of progress that meet the needs of the present without reducing the ability of future generations to meet their needs.
Food Web	The interrelationship between producers and consumers in an ecosystem.	Stakeholders	Groups of people who all have an invested interest in a particular area.

#### Key Idea 1: Antarctica is a special place.

Located on the southernmost point of out Earth in the Southern Hemisphere. It's nearest neighbours are Australia and South America. It is a landmass that is mostly covered in ice, with ice sheets extending out from the mainland.



Actions and forms of prog needs of the present with ability of future generation needs.	gress that meet the nout reducing the ons to meet their	Consumers	Animals which consume other living organisms to get energy.		Ice An
Groups of people who all interest in a particular are	have an invested ea.	Key Idea	a 3: Antarctica pro	has threats a otected.	ind n
Climate:	Sustainability Ma	naging Activities	l.		Killer
Antarctic's climate is harsh. The average temperature varies between -10°C to - 60°C	In order for Antarct sustainably manage compromised for fu to sustainability:	ica to remain the w the activities on A ture generations.	ray it is, we need to ntarctica so that it is not There are three branches		Seals
Due to the Earth's rotation, half of the year is spent in darkness. The other half of the year is spent in	Social	Balancing hum as tourism, rec wellbeing	an needs and wants such reational activities and	Whales	
continuous sunlight.	Economic	Considering ac money such as	tivities that generate mining and fishing.		ļ
History:	Environmental	Protecting wild	llife and its inhabitants.		
Antarctica was founded in In	Antarctica has no of	ficial human inhab	itants and is governed by no	other countries.	Phyto (microsc

Antarctica hosts an array of wildlife and

living creatures which are all connected

produce their own

1773 when James Cook and his crew crossed the	Antarctic Treaty was formed to regulate international relations with respect to Antarctica, Earth's only continent without a native human population. There are currently 12 signatories. The Treaty means that no one officially own Antarctica The agreement states that there is to be no military activity in Antarctica, no dumping of nuclear waste and rigorous environmental protection/monitoring amongst other things.	Stakeholders Interested in Antarctica		
Antarctic Circle for the first time.		Tourists	Tourists want to use go to Antarctica for recreational activities such as scuba diving, sight seeing and skiing.	
The first expedition to reach the geographic South Pole was led by the Norwegian explorer Roald Amundsen.		Miners	They want to mine the land for minerals and coal reserves which they can sell and use to generate power.	
He and four others arrived at the pole on 14 December 1911, five weeks ahead of a British party led by Robert		Environmentalists	Environmentalists wish to preserve the land and keep it as it is so that the wildlife and habits are preserved.	
Falcon Scott as part of the Terra Nova Expedition. Now, Antarctica is used		WWPA	The World Wildlife Protection Agency are concerned with Antarctica's preserved National Park areas.	
precominantly scientific research and hosts many countries scientific bases.		Scientists	Scientists from many countries use Antarctic as a research base, since here they can use ice cores and other apparatus to learn more about our climate.	

#### Interdependence

If one aspect of the food we were to change dramatically, for example, if krill numbers were to drop significantly, then the rest of animals in the food web would be affected too. Humans are having a negative effect on Antarctica's food web, due to hunting and our contributions to climate change which inevitably affects the habitats and wildlife that exists in Antarctica.



Extra reading: e decline in

eeds to be



#### **Tudor England: an overview**

- The Tudor period started in 1485 & ended in 1603
- \_\_\_\_The <u>Tudors</u> were powerful, with more control over England than previous medieval monarchs
- The Tudor period was dominated by religious change and violence. England consistently swapped between <u>Catholic</u> and <u>Protestant</u>.
- The Tudors were constantly aware that European countries like France and Spain had larger armies and more money than England.

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#### **Catholic beliefs**

- Churches should be decorated with gold, paintings, & ornaments
- Priests should wear expensive robes.
- The Bible should be in Latin.
- The Church is led by the <u>Pope</u>.
- You can get into heaven by doing 'good works'



#### **Key history words**

HISTORY

- Narrative: a chronological (start-to-end) piece of writing that explains what happened in an event
- **Continuity:** the opposite of changing, when something stays the same
- **Consequence:** The result/outcome of an event. This can be good or bad.

#### Protestant beliefs

- Churches should be plain and simple.
- Priests should wear plain robes.
- The Bible should be in the language of the people (e.g. English)
- The Church is led by the king.
- You can get into heaven by having faith in Jesus Christ and the Bible.



#### Key people

**Richard III**: the last Yorkist king of England, who was killed at the Battle of Bosworth Field. King from 1483-1485.

Henry VII: First Tudor king, reigned 1485-1509.

**Martin Luther**: German monk who wrote the 95 Theses, starting the <u>Protestant Reformation</u> in 1517.

**Henry VIII**: King, famous for his Break with Rome, <u>Protestant Reformation</u>, and six wives. King from 1509-1547.

**Catherine of Aragon**: Henry VIII's first wife, <u>Catholic</u> Spanish princess, divorced in 1533.

**Edward VI:** Henry and Jane Seymour's <u>Protestant</u> son. Became king in 1547 following Henry VIII's death. Died in 1553.

**Queen Mary I**: Henry VIII and Catherine's <u>Cath-</u> <u>olic</u> daughter, married to Philip II of Spain. Queen from 1553-1558.

**Queen Elizabeth I**: Henry VIII and Anne Boleyn's <u>Protestant</u> daughter, 45-year-long reign from 1558-1603.

Mary, Queen of Scots: Elizabeth's cousin, rival with a claim to the throne, executed in 1587

**Philip II of Spain**: Mary's husband, Elizabeth's rival, sent the Spanish Armada to England in 1588

#### **Protestant Reformation**

#### **Key dates**

1517: Martin Luther pins up his 95 Theses

1509: Henry VIII becomes King of England

1534: Henry declared himself 'Supreme Head of the Church of England' and broke with Rome

#### **Key events**

- Before 1517, the vast majority of people living in Europe were <u>Catholic</u>; they followed the <u>Pope</u> in Rome. It had been this way for centuries.
- However, in 1517 a German monk called Martin Luther was able to create a new branch of Christianity where there was no pope, and his beliefs were spread quickly due to the invention of the printing press; they were called Protestants
- Protestants believed that the Catholic Church was corrupt because they had been doing things like selling <u>indulgences</u>. These were pieces of paper that people could buy forgiving them of all their sins.
- Protestants believed that the only way to get into heaven was by having faith in Christ and the Bible. Therefore, the Protestant Bible was in English so that people could understand the words of Christ.
- By 1529, Henry VIII in England realised he wanted a divorce, as his current wife, Catherine of Aragon, had not provided him with a son. When the Pope did not allow a divorce to take place, Henry 'broke' with Rome, creating a new Protestant Church of England.
- Henry was now in charge of the English Church not the Pope. This created a lot of change in England.
- Religious changes would continue in England when Henry's children became king/queen.

#### **Key topic terms**

**Catholic:** the Church that was powerful in Europe **Protestant:** a new version of Christianity that challenged the Catholics **Illegitimate:** a child born out of marriage and unable to be a monarch

#### **Elizabeth I**

#### Key dates

1558: Elizabeth becomes Queen of England1587: Mary, Queen of Scots executed1588: The Spanish Armada1601: Elizabethan Poor Law passed1603: Elizabeth dies



#### Key events

- Henry VIII had become a <u>Protestant</u> in order to marry his second wife Anne Boleyn. His children all had different religious beliefs; Edward was a strong Protestant and Mary was a strong <u>Catholic</u>. This meant England experienced years of religious violence between 1529 and 1558.
- Henry's daughter, Elizabeth reigned from 1558 -1603, and was able to enjoy a peaceful and successful reign. She was Protestant but was more accepting towards Catholics
- She refused to share power with a foreign husband which meant that she had no children to be her heirs
- She faced many rebellions during her reign, mostly from people who wanted to make England officially Catholic again. Her cousin, Mary, Queen of Scots, was often a focus for their rebellions as she was a Catholic. This resulted in Mary being executed in 1587.
- Phillip II of Spain was also a Catholic and disagreed with Elizabeth's decision to execute Mary. He sent the Spanish navy to attack England to overthrow Elizabeth in 1588. This was called the Spanish Armada. However, the English defeated the Armada.
- Elizabeth introduced a Poor Law in 1601 to deal with the increasing numbers of poor people in England.

Reformation: the change in Europe of religion from Catholic to Protestant Indulgences: This was a piece of paper which said that all your sins had been forgiven Sin: Something that you have done wrong in the eyes of God e.g. stealing Pope: head of the Catholic Church, lived in Rome Tudors: the family that ruled England 1485-1603





MATHS

### **Elements of Music**

Pitch	IF notes are HIGH or LOW	Tonality	KEY, which NOTES are IMPORTANT and how they relate to each other
Duration	The LENGTH of notes and rests	Harmony	CHORDS, and how they are USED
Melody	The TUNE - PITCH and DURATION combined	Articulation	How NOTES are CREATED, SHAPED and PRODUCED
Rhythm	The BEAT, a combination of many different DURATIONS	Timbre	The TONE COLOUR of the note or sound
Tempo	How FAST or SLOW the music is	Instrumentation	Which INSTRUMENTS are used
Dynamics	How LOUD or QUIET the music is	Music Tech	SEQUENCING, SAMPLING, EFFECTS, and how they are USED
Texture	How the musical LAYERS are combined	Background & Context	WHO, WHERE, & WHY?
Structure	The ORDER of the different SECTIONS in a piece of music	Love	MUSIC



#### Weight training :

A series of exercises organised into sets and repetitions with an intensity and recovery time specific to the individual. It is used to increase strength and muscular endurance. Examples of exercises could include bicep curls and squats.

#### **Circuit training :**

A series of exercise stations arranged in a specific order, usually to alternate muscle groups. The stations can include equipment such as dribbling a basketball . Alternatively they can use body weight such as press ups.







Component of	Definition	Sporting example
Cardiovascular Endurance	The ability to continuously exercise without tiring.	Marathon runner Cross-country skiing
Muscular Endurance	The ability of a group of muscles to re- peatedly contract without tiring.	Rowing Swimming
Strength	The ability of the muscles to exert force.	Weightlifting
speed	The ability of the body or parts of the body to move quickly.	Sprinting Cricket bowling
Flexibility	The range of motion around a joint .	Dance Swimming
Power	The combination of strength and speed.	Triple/ Long/ High Jump Basketball
Reaction Time	The time taken from the stimulus to the start of a response.	Sprinting Table tennis
3alance	The ability to keep a body's centre of mass over a base of support.	Gymnastics Martial arts
Coordination	The ability to use different body parts together accurately and fluently.	Badminton Tennis
Agility	The ability to change direction at speed.	Netball Football







#### **Continuous training:**

Aerobic exercise for longer than 20 minutes. Aerobic exercises could include swimming, cycling, jogging, and rowing. This is used to improve cardiovascular endurance.

#### Interval training :

Periods of exercise followed by periods of rest, this is used by anaerobic and aerobic performers. How long you work and rest for can be adapted to the individual depending on their sport.

#### Fartlek training :

Continuous steady –state aerobic exercise with random higher intensity periods. This adds variety to training and improves cardiovascular endurance.



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#### Why it is important to celebrate milestones and rites of passage

REP

Key Words					
	Rite of passage	te of passage A ceremony or event marking an important stage in someone's life, especially birth, the transition from childhood to adulthood, marriage, and death.		Holi	A Hindu spring festival celebrated in February or March in honour of Krishna. Known as the 'festival of colours'
	Milestone A sign or marker that indicates a stage in a journey.		Purim	A Jewish festival held in spring to commemorate the defeat of Haman's plot, as recorded in the book of Esther.	
<b>Confirmation</b> The rite at which a baptised person, especially one baptised as an infant, affirms Christian belief and is admitted as a full member of the Church.		Baptism	A religious rite of sprinkling water on to a person's forehead or of immersing them in water to symbolise cleansing and purification.		
Bar/BatThe initiation ceremony of Jewish children who have reached a certain age and are ready to observe religious precepts and eligible to take part in public worship.		Initiation	The act of admitting/being welcomed. Marking an entrance or acceptance into a group or society.		
Ī					
			Κ	ey Ideas	
Milestones			Different stages in life which are marked/commemorated or celebrated in different ways. These difference can depend on religion, culture and interpretation. Some more general milestones could include turning 18, passing a driving test.		<u>Different stages in life are celebrated at different times:</u> Naming Ceremony, sacred thread ceremonies, baptism. Bar and Bar Mitzvah – coming of age ceremonies
Infant vs Believers Baptism Baptism Common Section 2015 Baptism: Baptism is a symbol of a new beginning. It also represents a baby becoming a member of the Church. Although a baby cannot decide to follow Christ for itself, a baptism shows that the child is included as a member of the church family.		<b>Believers Baptism:</b> Jesus was an adult when he was baptised by John the Baptist. Some Christian churches believe that baptism should wait until a person is old enough to make promises for themselves.			
	Naam Karan (naming ceremony)       Soon after the birth of a child, the family and relatives go to a Gurdwara. They sing hymns from the Guru Granth Sahib that express journame to thankfulness.         The naming ceremony confirms that the baby belongs to God and will live in God's presence forever. The child's life is centred round Gurdwara and the Sikh community. The community will support and protect the child as he or she grows up and gets to know more a the religion and how to put the religion into practice during their life.		ara. They sing hymns from the Guru Granth Sahib that express joy and I live in God's presence forever. The child's life is centred round the protect the child as he or she grows up and gets to know more about		

#### Key Ideas (cont.)

#### Bar and Bat Mitzvah



The Bar and Bat Mitzvah ceremonies mark the transition into adulthood for young Jews. At age 13 a boy becomes a Bar Mitzvah (a son of the commandments) and at age 12 a girl becomes a Bat Mitzvah (a daughter of the commandments).

Jewish boys and girls become responsible for living according to Jewish law. At this point, each young person has to accept the law and its obligations, participate fully in services at the synagogue and set a good example for others. After the ceremony, Jewish boys can be counted as part of a minyan. In Reform synagogues, girls who are Bat Mitzvah can also be counted.

Purim



Purim is a festival when Jews remember the biblical Esther. Esther was the Queen of Persia. She was also Jewish but her husband, the King, didn't know this. The King's chief minister was Haman, a man who hated the Jews. Esther's uncle would not bow down to Haman. Haman was so angry that he plotted to have all the Jews killed, and he drew lots to decide on the date. The Persian word for lot was Purim.

Anyone who went to see the King without permission was put to death, but Esther was brave enough to tell her husband of her religion.

Holi



The festival of Holi takes place in spring, Hindus celebrate this festival in many different ways. There are fireworks and special foods, and also fun celebrations such as giving gifts and cards, meeting up with friends and relatives. It is also known as the festival of colour – its origins are in a story about Krishna (one of Vishnu avatars), whose skin was blue. He loved Radha but felt conscious of the colour difference between them, so Krishna is said to have gently painted her face to make it the same as his. Krishna is also known as a prankster, so throwing of paint fits his character. This is a day of fun, and music, singing and dancing are common.



## Bottisham Village College

## **KNOWLEDGE** ORGANISER YEAR 7 SCIENCE TERM 3

• ELECTRICITY AND MAGNETISM

• CHEMICAL CHANGES

• WAVES



#### Electricity and Magnetism Year 7

A. Keywords.	
Cell	A chemical store of energy, which provides the push that moves charges around a circuit.
Battery	Two or more electrical cells joined together.
Switch	Can be opened or closed to turn a circuit on or off.
Magnetic field	The area around a magnet where another magnetic object will feel a force.
Circuit	Components connected together using wires.
Complete circuit	All wires and components connected, with no gaps. Electricity will only flow through a complete circuit.
Ammeter	A component placed in a circuit to measure the current
Poles	The ends of a magnet. Every magnet has a north pole and a south pole.
Rate	A measure of how frequently something occurs. If something has a high rate, then it happens more often each second. E.g. a higher current means more charges flowing past a point every second.

#### B. Working scientifically

We could use the circuit in **section D** to investigate how changing the number of bulbs in a circuit affects the current, by adding more bulbs and measuring the current on the **ammeters**. The **SI unit** for current is the **Ampere** or **Amps (A)** 

#### **Making Predictions**

Before we carry out experiments, we make predictions of what we expect to happen. We can make two kinds of prediction:

Qualitative—just using words to explain what we think will happen

Quantitative—using numbers to predict what data we will get (i.e. the values of current that we will get).

When we make a prediction we should **always** use our scientific knowledge to explain **why** we are predicting a certain outcome.

#### C. Circuits

Circuit symbols are used to represent components (the parts of the circuit). To draw a circuit, we



Components connected

across more than one loop.

Parallel circuits

To draw a circuit, we Bulb Ammeter Volt connect the symbols with lines to represent the wires.

Batter

Series circuits All components connected in one continuous loop.



#### **D.** Current in series

Current is a measure of the rate of flow of **negative charges** around a circuit. These charges are called **electrons.** 

Current is measured using an ammeter. The unit is Amps (A). Ammeters are always connected in series to the component being measured (like in the diagram).

#### E. Magnets

All magnets have a north and a south pole, one at either end. If you bring two magnets near each other, the **opposite** poles will **attract**, but same poles will **repel.** 



The Earth also has a magnetic field. What we call the North pole is actually the south pole of a giant magnet!!!

It is because of this magnetic field that we can use smaller magnets to make compasses for navigation. Series circuits Current is the same

Ν

everywhere in a series



#### 

REPULSION NSEESN OR SNEENS







#### **Chemical Changes**

Year 7

A. Keywords.		
Atom	The smallest part of an element that can exist	
Chemical Reaction	A change in which a new substance is formed. In a chemical reaction the atoms are rearranged and joined together differently.	
Acid	A solution with a pH value less than 7	
Alkali	A solution with a pH value more than 7	
Indicator	A substance used to identify whether a unknown solutions is acidic or alkaline	
Neutralisation	When an acid cancels out an alkali or an alkali cancels out a base in a chemical reaction	
Combustion	A chemical reaction in which a substance reacts quickly with oxygen and gives out light and heat. Also called burning.	
Thermal Decomposition	A chemical reaction in which a compound breaks down on heating to form more than one product.	
Reactant	A starting substance in a chemical reaction	
Product	A substance made in a chemical reaction	
Particle	A very tiny object, such as an atom or molecule, that materials are made from.	

#### **B.** Chemical Reactions

#### Reactants → Products

Bonds between atoms are broken

• The atoms are rearranged and new bonds form between different atoms.

A + B	<b>A</b> - <b>B</b>
A-B	A + B
A-B + C	A-C + B
A-B + C-D	<b>A-D</b> + <b>C-B</b>

#### C. Acids, Alkalis and Indicators

• Acids have a pH between 1 and 6

• Alkalis have a pH between 8 and 14.

- pH 7 is neutral.
- Litmus paper can be used to show whether a substance is acidic (red) or alkaline (blue).
- Universal indicator changes colour to show **how** acidic or alkaline a substance is.



#### D. Neutralisation.

When an acid and an alkali react together a neutralisation reaction occurs.

Reacting exactly the right amounts of acid and alkali together will form a neutral solution which is pH 7.

The general equation for neutralisation is:

Acid + Alkali → Salt + Water

In some neutralisation reactions carbon dioxide is also produced. This only happens if you see your reaction fizzing.

#### E. Combustion and Thermal Decomposition

#### Combustion

Combustion can either be complete combustion or incomplete combustion.

Complete combustion happens when there is plenty of oxygen.

Fuel + Oxygen → Carbon Dioxide + Water

Incomplete combustion happens when there is not enough oxygen.

Fuel + Oxygen  $\rightarrow$  Carbon Dioxide + Water + Carbon Monoxide + Carbon

In a combustion reaction energy is released via the heating and light pathways.

#### Thermal Decomposition

There will be one reactant in a thermal decomposition reaction.

When the single reactant is heated it will break up into two or more smaller molecules.

E.g. Copper Carbonate  $\rightarrow$  Copper oxide + Carbon Dioxide



#### Waves Year 7

#### A. Keywords

Wave	Transfer of energy through vibration of particles
Longitudinal wave	Where the direction of vibration is the same as that of the wave.
Transverse wave	Where the direction of vibration is at right angles to the direction of travel of the wave.
Amplitude	The maximum amount of vibration. The height of the wave on a diagram.
Frequency	The number of waves produced in one second, in hertz (Hz).
Pitch	How high or low a sound is. A low pitch sound has a low frequency.
Wavelength	Distance between two corresponding points on a wave, in metres.
Ultrasound	Sound at a frequency greater than 20 000 Hz, beyond the range of human hearing.
Eardrum	A membrane that transmits sound vibrations from the outer ear to the middle ear.
Cochlea	Tube in the inner ear with the sensory cells that detect sound.
Ossicles	The small bones of the inner ear that transfer vibrations from the eardrum to the oval window.

#### **B. Working Scientifically**



Speed is a measure

of the distance



- One person fires a gun into the air.
- The time keeper starts a stopwatch when he sees the flash from the gun and stop the stopwatch as he hears the gun shot.

covered in a given time: speed  $(m/s) = distance (m) \div time (s)$ 

#### Improving the speed of sound investigation

Systematic errors occur in this experiment because our method relies on human reaction times, a computer sensor would be more reliable.

If we have a systematic error we should repeat the experiment using a different method or set of equipment and then compare our results.





The human ear detects sound from the vibration of air particles. This is directed by the pinna, sent down the auditory canal, and transferred through the eardrum, via the ossicles and oval window, into the cochlea. This turns it into an electrical signal, sent to the brain along the auditory nerve.

Humans can hear frequencies from 20Hz — 20,000Hz



Sound travels through particles. As the particles **vibrate**, they get **compressed** together, and pass on energy. Particles that are closer together can transfer the sound wave more easily, so sound travels quickest through solids., and slowest in gases.

Sound **will not** travel through space because it is a **vacuum**, and doesn't have any particles.