Knowledge Organiser Year 6

St Augustine’s School, Weymouth

Autumn Term

Year 6 Autumn Term - Art

Prior Learning

Sculpture- Colourful Clay Relief Tiles

Unit

Sculpture- Ancient Greece

How Knowledge will be built on

Key Knowledge

- Explore and study images and details of Ancient Greek pantheons, focusing on details of structural architect e.g. columns (drawing studies)
- Recreate 2D images in 3D, looking at one area of experience- form and surface
- Use the study of 3D work from a variety of genres and cultures to develop a personal response through models, experimentation and design stages
- Make imaginative use of previous knowledge of tools, materials (Clay) and techniques to create form and texture.
- Apply previous knowledge to create a 3D clay sculpture – composite task
- Colour: Mixing and matching colour for effect
- Form: Continue to develop solid 3D skills, working on a range of scales – small scale , precision
- Line: Make decisions about the width and type of lines used to decorate or to represent factors of cultural significance
- Texture: Apply knowledge of using a range of tools to create rough and smooth textures on the surface of the clay, as appropriate for the nature of the piece

Vocabulary

size, weight, scale, surface, shape, cross hatching, score, slip, relief, slab, blending, welding, proportion, line, pose, position, dynamic, proportion, balance

Year 6 Autumn Term - Computing

Prior Learning: Computing systems and networks: Search engines

Unit: Computing systems and networks: Bletchley Park and the history of computers

How Knowledge will be built on:

Key Knowledge

- The importance of having a secure password and what brute force hacking is
- The first computers were created at Bletchley Park to crack the Enigma code to help the war effort in World War 2
- About some of the historical figures that contributed to technological advances in computing
- What techniques are required to create a presentation using appropriate software
- Sound clips can be recorded using sound recording software
- Sound clips can be edited and trimmed

Vocabulary

acrostic code, audio advert, brute force hacking, Caesar cipher, chip and PIN system, cipher, combination, date shift cipher, discovery, invention, Nth letter cipher, password, pigpen cipher, scrambled, script, secret, secure, technological advancement, trial and error

Year 6 Autumn Term - DT

Prior Learning

Mechanical systems: Automata toys

Unit

Electrical systems: Steady hand game

How Knowledge will be built on

Electricity (KS3)

Key Knowledge

- To know that ‘form’ means the shape and appearance of an object
- To know the difference between ‘form’ and ‘function’
- To understand that ‘fit for purpose’ means that a product works how it should and is easy to use.
- To know that ‘form over purpose’ means that a product looks good but does not work very well.
- To know the importance of ‘form follows function’ when designing: the product must be designed primarily with the function in mind
- To understand the diagram perspectives ‘top view’, ‘side view’ and ‘back’

Vocabulary

assemble, battery, battery pack, benefit, bulb, bulb holder, buzzer, circuit, circuit symbol, component, conductor, copper, design, design criteria, evaluation, fine motor skills, fit for purpose, form, function, gross motor skills, insulator, LED, user

Year 6 Autumn Term - Geography

Prior Learning

What is climate change and how can we tackle it?

Unit

How are places around the world tackling pollution?

How Knowledge will be built on

Carrying out fieldwork (Y6)
The Earth's changing climate.

Key Knowledge

- Vertical lines called **meridians** split the Earth is split into 24 different **time zones**. Each time zone is a number of hours ahead or behind London, at the **Prime Meridian**. Some countries are too large for one zone and operate in multiple time zones
- **Climate zones** share long-term weather patterns. Six main ones: **polar**, **temperate**, **arid**, **tropical**, **Mediterranean** and **mountains**
- Climate zones are usually found in more than one continent; and continents of Europe, North America and South America have several climate zones Some climate zones (e.g. temperate) usually have a much higher **population density** than others
- **: Biomes** are areas of the world that, because of similar climates, have similar landscapes, animals (**fauna**) and plants (**flora** or **vegetation belt**): **tundra**, **tropical rainforests**, **coral reefs**, **temperate forests** and **hot deserts**
- Flora and fauna that have adapted to life in the tundra (Arctic hare, polar bear) hot desert (cactus, camel, Saharan silver ant, cape ground squirrel) temperate forest (deciduous and coniferous trees with thick bark, red squirrels, hedgehogs, brown long-eared bats southern wood ants) coral reefs (soft coral, pistol shrimp & goby fish, reef sharks)
- **Global warming** relates to an increase in Earth's temperature only; it causes **climate change** which relates to a broader set of changes. Global warming and climate change both happen naturally but both have been accelerated by **human activity**
- Global warming is caused by too many **greenhouse gases** in the atmosphere from burning **fossil fuels**, **agriculture**, **and deforestation**
- We can prevent further climate change by using less electricity, **reforestation** and **afforestation**, and by using less and **recycling more**. If humans do not act now, global warming and climate change will continue and have major impacts

Vocabulary

Climate features, Plastics, Organisms, Habitats, Great Pacific Garbage Patch, Pollution, Recycling, Sustainable cities, Response, Environmental issues

Year 6 Autumn Term - History

Prior Learning

Early ancient civilisations.
Roman Empire.
Anglo-Saxon kings,

Unit

How have our lives been influenced by the Ancient Greeks?

How Knowledge will be built on

Knowledge of democracy and other forms of government.

Key Knowledge

- When we refer to Ancient Greece, we usually mean the period between the end of the Mycenean civilization (around 1200BC) and the death of Alexander the Great (323BC)
- Ancient Greece was not an empire, but was made of lots of city- states like Athens and Sparta
- The Ancient Greeks believed that the gods and goddess had control over every aspect of life. They believed that they had to appease the gods in order to gain their favour and avoid punishments
- Democracy is a system of government in which all eligible members have a say. Ancient Greek society was very structured, and people's experiences varied greatly depending on which class or subclass they belonged to
- Athens became the dominant city-state through a range of physical (geographical position, access to silver, marble, lead) and cultural (interest in trade and overseas territories, democracy, exchange of ideas) features

Vocabulary

civilization, Classical Period/Golden Age, society, culture, belief, religion, city-state, government, monarchy, oligarchy, democracy, empire, trade, warfare, slavery, physical geography, attitude, philosophy, theatre, Olympics,

Year 6 Autumn Term - Maths

Termly Overview			
1	Place value within 10,000,000	Number - number and place value	• Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit • Round any whole number to a required degree of accuracy • Use negative numbers in context, and calculate intervals across zero • Solve number and practical problems that involve all of the above
2	Four operations	Number - addition, subtraction, multiplication and division	• Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) • Identify common factors, common multiples and prime numbers • Use their knowledge of the order of operations to carry out calculations involving the four operations • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
3	Four Operations 2	Number - addition, subtraction, multiplication and division	• Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context • Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context • Perform mental calculations, including with mixed operations and large numbers

Year 6 Autumn Term - Maths

Termly Overview			
3	Four Operations 2 (Con't)	Number	• Identify common factors, common multiples and prime numbers • Use their knowledge of the order of operations to carry out calculations involving the four operations • Solve problems involving addition, subtraction, multiplication and division
4	Fractions	Number - fractions (including decimals and percentages)	• use common factors to simplify fractions; use common multiples to express fractions in the same denomination • Compare and order fractions, including fractions > 1 • Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
5	Fractions 2	Number - fractions (including decimals and percentages)	• Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams • Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions • Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 1/4 × 1/2 = 1/8] • Divide proper fractions by whole numbers [for example,1/3 ÷ 2 = 1/6]. • Use written division methods in cases where the answer has up to two decimal places

Year 6 Autumn Term - Maths

Half Termly Overview			
6	Measure - imperial and metric measures	Measurement	• Solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate • Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places • Convert between miles and kilometres

Year 6 Autumn Term - MFL

Prior Learning

Au cafe
Les Vêtements (I)

Unit

La phonétique (Phonics & Pronunciation)
Chez moi (My Home)

How Knowledge will be built on

Les Habitats (I) (Habitats)
Quel Temps Fait-Il? (I) (Weather)

- In these 4 sequential lessons pupils will learn a selection of the key phonemes to facilitate accurate and authentic pronunciation as part of their language learning experience. Each of the 4 lessons is accompanied by a song that pupils will be encouraged to actively participate in, as well as a mouth mechanics guide video
- Say and write in French whether we live in a house or an apartment
- Say what room we have and do not have at home using the key structure chez moi il y a… and chez moi in n'y a pas de/d'…
- Use the conjunction 'et' (and) to link two sentences together

Vocabulary

cheval, mouton, cochon, oiseau, six, cinq, musique, famille, bureau, yeux, café, règle, appartement, quatre, campagne, français, dents, blanc, une maison, un appartement, en ville, a la montagne, au bord de la mer, à la campagne, dans un village, un salon, une buanderie, une chambre, un bureau, un garage, une salle à manger, une salle de bains, un sous-sol, un jardin, une cuisine

Year 6 Autumn Term - Music

Prior Learning

Composition notation
(Ancient Egypt)

Unit

Dynamics, pitch and texture
Songs of World War 2

How Knowledge will be built on

Film Music
Theme and variations (Pop Art)

Key Knowledge

- To know that the conductor beats time to help the performers work well together
- To understand that improvisation means making up music 'on the spot'
- To understand that texture can be created by adding or removing instruments in a piece and can create the effect of dynamic change
- To know that timbre can also be thought of as 'tone colour' and can be described in many ways e.g. warm or cold, rich or bright
- To know that 'Pack up your troubles in your old kit bag' and 'We'll meet again' are examples of songs popular during WW2
- To know that the Solfa syllables represent the pitches in an octave
- A 'counter-subject' or 'counter-melody' provides contrast to the main melody
- To know that a counter-melody is different to harmony because it uses a different rhythm as well as complementary notes

Vocabulary

classical, characterise, composition, conductor, depict, dynamics, ensemble, graphic score, improvisation, notation, orchestra, pitch, texture, accuracy, backing track, compare, contrast, complement, control, counter-melody, diaphragm, era, expression, features, harmony, harmonise, lyrics, melody, melody line, morale, notate, octave, parts, performance techniques, phrase, phrasing, pitch, purpose

Year 6 Autumn Term - PE

Prior Learning

Unit

Athletics

How Knowledge will be built on

Key Knowledge

- Physical: pace, sprint, jump for distance, push throw, fling throw
- Social: negotiating, collaborating, respect
- Emotional: empathy, perseverance, determination
- Thinking: observing and providing feedback, comprehension
- long distance running, short distance running, triple jump, discus and shot put.

Vocabulary

Collaborating, fling throw, push throw, sprint, perseverance

Year 6 Autumn Term - Science

Prior Learning: Fossil fuels, batteries and the sun

Unit: Electricity

How Knowledge will be built on: Current (KS3)

Key Knowledge

- Many of the appliances used in the home do not use batteries they use mains electricity.
- Mains electricity is generated in a power station and transferred to our homes by overhead cables. Power stations can use both renewable and non-renewable sources of energy to generate electricity.
- Renewable energy sources quickly replenish themselves, meaning that we can use them again and again. Wind, solar, geothermal and hydrological power are all examples of renewable energy sources.
- Renewable energy is an important development for global climate targets.
- There are recognised symbols for cell, lamp, buzzer, motor, and switch. Wires are represented with straight lines (cons)
- More than one lamp can be put into one circuit. They can be placed in series or in parallel.
- In a series circuit, the lamps are placed in a continuous loop. In parallel, the lamps are placed in separate loops.
- Connecting lamps in parallel means that if one lamp burns out the other will stay on and switches can be used to turn each lamp off.
- As long as batteries have the same voltage, the size of the battery does not affect the brightness of the lamp/loudness of the buzzer (though the smaller batteries will not last as long as the larger ones) (investigation)
- Adding more cells in the circuit increases the voltage. Increasing the voltage in a circuit makes the lamp in the circuit get brighter or the buzzer get louder. (investigation)When more bulbs are added to a series circuit, the brightness of each bulb decreases.
- When more bulbs are added into a parallel circuit, the brightness of each bulb remains unchanged.

Vocabulary

AaElectricity, appliance, device, electrical circuit, complete circuit, circuit diagram, circuit symbol, components, cell, battery, positive, negative, terminal, connection, short circuit, wire, crocodile clip, bulb, bright/dim, switch, buzzer, volume, motor, conductor, insulator, voltage, current, resistance.

Year 6 Autumn Term - Science 2

Prior Learning: Living things and their habitat

Unit: Evolution and Inheritance

How Knowledge will be built on: DNA (KS3)

Key Knowledge

- **Mary Anning** was involved in the development of evolutionary biology
- **Fossils** provide evidence for evolution, because they show how organisms have changed over time
- **Charles Darwin** was involved in the development of evolutionary biology
- Variation occurs within and between **species**
- Variation can be **environmental** or **genetic**, or a mixture of both.
- Some variation is **advantageous** to the organism in their environment; sometimes it is **disadvantageous**; and sometimes it gives no advantage/disadvantage.
- An **organism** with **advantageous traits** are more likely to survive and reproduce, passing those traits to the next generation. This is called **natural selection.**
- These advantageous traits - **adaptations** - can be **physiological**, **structural** and **behavioural.Genetic** variation happens randomly through the mixing of **genomes** in **sexual reproduction**.
- Offspring inherit traits from their parents and combine traits from two parents.
- Hybrid species can be created through cross breading (e.g. labradoodle, mule, zonkey, loganberry)
- Over many generations, the species will **evolve** so that all organisms have this adaptation/ advantageous trait
- Homo sapiens evolved in East Africa

Vocabulary

Adaptation, characteristics, evolution, species, mutation, inherit, natural selection, extinct, ancestor, extinct, offspring, reproduction, variation, biodiversity, maladaptation, traits