Year 6 SCIENCE Topic 5: Paleontologists (4 Weeks)

Assessment Questions:

Is a bird a vertebrate or invertebrate? How else could you classify animals? How could you classify trees? Why is a fern a coniferous plant and not a deciduous plant? How can we know what life was like on earth millions of years ago? Can you name an animal which has adapted to its environment over time?

Values: Truthfulness and Trust

KNOW	DO	UNDERSTAND
Living things and their habitats **S: describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals** **S: give reasons for classifying plants and animals based on specific characteristics** **Vocabulary:** classified, characteristics, micro-organisms., vertebrates, fish, reptiles, amphibians, mammals, birds. Children know that living things can be classified based on common observable characteristics. Living things can also be compared – similarities and differences, e.g. invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals). **Evolution and inheritance** **S: recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago** **S: recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents** **S: identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution** **Vocabulary:** fossils, inhabited, offspring, identical, adapt, adaptation, environment, evolve, evolution, reproduction. Children know that living things change over time. They know that fossils are a really helpful tool to understand the world millions of years ago. Children know that living things produce offspring, which are normally of the same kind but vary slightly. Children know that animals and plants adapt to their environment. They can give examples of this – the moth. Children know that adaption may lead to evolution – this does not necessary mean from monkeys to humans. Children know that adaptation is special features that plants and animals develop to suit the place where they live. Evolution is the process of change to animal and plant species over long periods of time, or how plant species and animals have developed from generation to generation.	**WS: identifying scientific evidence that has been used to support or refute ideas or arguments** **WS: reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations**. Children observe and classify items, which will then help them draw their own conclusions about similarities and differences. They will research unfamiliar animals and then classify them. They can discuss reasons why living things are placed in one group and not another. Children will come up with their own questions about why an animal is the colour it is or the shape etc. They will then use their knowledge to deduce why that is. For example, the Artic Fox is white, so it is camouflaged against the snow. Children will present findings about adaption, giving examples of when this has happened. **Health for Life: Growing** **NC Plants: Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.** Pupils can enhance their learning in the 'Evolution and inheritance' topic by looking at how plants can vary within a particular species. They can plant varieties of bulbs (e.g. tulip, daffodil) and seeds (e.g. poppy, tomato). They can then observe these plants to identify how they are similar (i.e. what makes a daffodil a daffodil) but also how they are different (i.e. the variation within the species). • Grow varieties of **daffodils, tulips, crocuses** in September. • Grow varieties of **tomatoes, lettuces** in April.	*PRIOR KNOWLEDGE: Pupils should build on their learning about grouping living things in year 4 by looking at the classification system in more detail – children already know about mammals, insects, amphibians etc.* *PRIOR KNOWLEDGE: Building on what they learned about fossils in the topic on rocks in year 3, pupils should find out more about how living things on earth have changed over time.* This topic is done alongside writing about dinosaurs, looking at how they were adapted to their environment.

Year 6 Geography Paleontologists

Assessment Questions

- *Where are the Northern and Southern Hemispheres located on a world map and globe?*
- *Where are the Tropics of Cancer and Capricon located? What do these terms mean: longitude and latitude with reference to the Equator?*
- *What do paleontologists know about continents millions of years ago?*

Know	Do	Understand
Locational Knowledge Name some countries in the Northern Hemisphere, Southern Hemisphere Know the position of the Tropics of Cancer and Capricorn Know where the Arctic and Antarctic Circle are. Identify their significance and position in the world. Know that millions of years ago all continents were joined in one super continent that scientists now call Pangea. The earliest dinosaurs were around during this time. **Key Vocabulary** **Equator, latitude, longitude, northern/southern hemisphere, climate, continent, supercontinent, Pangea** **Geography Core Concepts:** Resources (natural) Land-Use Environment Climate	**Locational knowledge** **NC: identify the position and significance of latitude, longitude, Equator, Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle, the Prime/Greenwich Meridian and time zones (including day and night)** Label the northern and southern hemisphere on a globe/world map and name which continents and countries can be found in either or both hemispheres. Label the equator, latitude, longitude the Tropics of Cancer and Capricorn and the Arctic and Antarctic. Describe what scientists and geographers now believe about Pangea, showing on a map of the world. Children could create a PowerPoint presentation/fact file about Pangea with cross curricular links to the dinosaurs.	This topic covers predominantly science objectives (adaptation, variation evolution etc) but some locational knowledge of the world can be taught through the study of dinosaurs. By doing some revision of the continents found in the Northern and Southern Hemispherechildren can then be taught about Pangea (the supercontinent aroundin the early Mesozoic era - approximately 335 million years ago.)During the 165 million years of dinosaur existence this supercontinent slowly broke apart.Scientists believe Pangea began to break apart and separate into the continents we know today during the Triassic period.

Year 6 ART Topic 5: Palaeontologists		
Assessment Questions How did you create your sculpture? What materials did you use? Why? How did you create the different surface textures? How did you create your colour palette? Truthfulness and trust		
KNOW	DO	UNDERSTAND
Know how to use a sculpture base such as wire/newspaper/supports to create a 3D image. Know how to use mod roc to create different surface textures. Know how to blend a range of colours for a purposeful effect. Key vocabulary: Sculpture/3D Surface texture Blend Tone	3D/sculpture focus. Children create a model of a dinosaur using wire, mod roc and paint. **NC Aims:** - produce creative work, exploring their ideas and recording their experiences - become proficient in art and design techniques **NC Content:** Pupils should be taught to develop their techniques, including their control and their use of materials, with creativity, experimentation and an increasing awareness of different kinds of art, craft and design. - to create sketch books to record their observations and use them to review and revisit ideas - to improve their mastery of art and design techniques	This topic explores how competition and predation affect the distribution and numbers of organisms in selected environments. The impact of human activity is then considered with the opportunity for children to interpret data on living and non-living indicators. As part of this topic, children learn about how our world has changed throughout history, with a focus on dinosaurs. Children will develop new sculptural skills, using mod roc, to create a model of a dinosaur to accompany their non-fiction writing.

Year 6 MUSIC Topic 5: Palaeontologists		
KNOW	DO	UNDERSTAND
I know that: • Ostinati and different rhymical patterns can be added in layers and taken away to change the texture of a piece of music. • To sing in harmony you have to listen to those around you and pitch your notes carefully. • To perform music, you need to revise it, rehearse it and make developments to it • Different musical elements can impact the effectiveness of a performance **Vocabulary:** Rhythm Beat Texture Ostinati **Flashmob** Harmony chord Mood Expression dynamics	**Music express:** The children will explore rhythm and beat through listening to Ravel's *Boléro*. They will look at how the music grows (The instruments join in one by one. In music this is called thickening the texture.) and notice how it has a metre of three. The beat is set up by a solo snare drum and a double bass and the children will identify how this ostinati continues throughout. They will explore how a mime artist puts actions to the audio and plays them in time. The children will try their own mimes and make them fit to the beat. A class conductor can try to build the texture by asking children to start their mimes one after the other in time with the *Boléro* audio when directed. They can film and watch back to notice how the growing texture of mime artists matched the growth of texture in the music. The children will then look at a street scene and pick out all the buskers – listening to the parts of the Bolero that they are playing. They will then look at how the scene can be built on with street call chants. They can improvise their own calls and fit them in time to the Bolero ostinato. They will refine this further by looking at the structure of the whole piece and selecting effective instruments to use. In the next lesson, they will look at the texture of a line and see how singing in harmony can thicken the texture. They will learn how to perform *Street busker* in three-part harmony with the double bass ostinato and chordal accompaniment with the performance or backing audio. The children will learn about flashmobs and compare the 'Flashmob' performance to the street scene. They will learn the flashmob lyrics and rhythms and think about movements that could go with it. They will look at other flashmob videos and discuss what they have in common/ what makes them effective. They will then revise all of the elements they have learnt over the past few weeks and put them together to rehearse and perform their own busker bash. After the performance, they can watch a recording of it and discuss: – how well everyone kept in time with each other; – whether everyone showed enjoyment during the performance; – whether the performance captured the contrasting moods; – how well the transitions worked in the performance; – whether everyone performed with expression and dynamics.	*The children should be confident identifying ostinati and playing rhythms over the top. This unit combines all this together into the new concept of a flashmob and the children now have to consider how to perform and choregraph their composition.* **NC Areas covered:** • Pupils perform and listen to music, including the works of the great composers • Pupils develop an understanding of musical composition, organising and manipulating ideas within musical structures and reproducing sounds from aural memory • Pupils play and perform in solo and ensemble contexts, using their voices and playing musical instruments with increasing accuracy, fluency, control, and expression