



Elm, Maple, Walnut Footprints from the Past

Lesson	IPC Learning Goal			
Entry Point		A few days before you plan to start the unit, you should secretly bury some plastic dinosaur models or dinosaur toys in tubs of plaster of Paris. Follow the instructions on the packet of plaster to make a weak solution. Allow about 12 hours to dry. The containers only need to be a little bit bigger than the models. Empty plastic ice-cream tubs make good containers. When dry, gently tip out the plaster 'fossils'. Dress the children up as 'palaeontologists', who are looking for fossils in the dust and heat of the Egyptian desert. Equip them with goggles, gloves, white coats or aprons, paintbrushes, and simple hand tools such as small hammers and chisels. Tell them to gently chip away at the plaster 'fossil' to find out what's inside but don't tell them what it's going to be. Show them how to use the various tools properly and the paintbrushes to carefully brush away the plaster without damaging the fossil inside. In another container you could bury a 'dinosaur' egg (substitute a toy egg). Perhaps you could invite a 'palaeontologist' in to school to talk them through this entry point and set them the challenge – it could just be another teacher or parent or someone linked to the school acting in the role of a palaeontologist and really setting the 'Dinosaur Detectives' scene. Take lots of photographs of the children working on this activity and display them so that they can refer back to them later in the unit when they will find out more about palaeontology. When the dinosaurs and the eggs are revealed you can ask them if they can guess what the topic of the next unit is going to be!		
Knowledge Harvest		What do the children already know about dinosaurs? Probably quite a lot! Have a game of True or False. Write 10 facts and 10 myths about dinosaurs on separate pieces of paper and stick them around the room. Children have to group them as true or false. Don't tell them that there are 10 of each. Here are some sample facts and myths you can use. Ask the children to keep a record of their responses and move the facts and myths from one set to another as needed as the unit progresses and the children identify any mistakes they have made, or repeat the activity individually at the end of the unit to assess their learning. Now you can ask the children what they would like to find out about dinosaurs. You could ask each child to think of, say, three or more key questions about dinosaurs that they would like to discover answers to. They might want to write these in thought bubbles and display them in the classroom. Later, as they work through the tasks they can write the answers next to them.		
Big Picture		Dinosaurs lived millions of years ago – long before people lived on Earth. No one has ever seen a dinosaur so how do we know anything about them? Fossil evidence and dinosaur bones provide our only clues. Like detectives, we will try to discover what dinosaurs looked like, what they ate and what might have happened to them in the end.		
History 1	2.05 Be able to gather information from simple sources 2.06 Be able to use their knowledge and understanding to answer simple questions about the past and about changes 2.07 Understand that the past can be considered in terms of different time periods		On a long roll of paper draw the following timeline: 1. Mark the 24 hours in a day at equal intervals along the length of paper, starting at 0:01 then every hour at 1:00, 2:00, 3:00... up to 22:00, 23:00, finally ending on 24:00. 2. Colour in the area from 0:01 to 17:00 and label this the 'dinosaur era'. 3. Colour in the time from 1½ minutes to midnight and label this the 'human era'. Explain to the children that the timeline represents all the time from when the dinosaurs appeared until now, viewed in a single day. Dinosaurs appeared at midnight and lived until 5 o'clock in the afternoon. Humans appeared at just 1½ minutes before midnight. Display the time line on the classroom wall and illustrate the background with a colour key, as well as pictures of dinosaurs and people, the sun at midday and the moon at night. As an extension to	paper rulers

			this activity, perhaps as a home-learning task, you could ask the children to research what happened after 17:00 until just before humans arrived. The children could then add this information to the time line. In books children to recreate the timeline and explain what it shows. Use rulers to create specific increments on the timeline.	
2	2.05 Be able to gather information from simple sources 2.06 Be able to use their knowledge and understanding to answer simple questions about the past and about changes 2.07 Understand that the past can be considered in terms of different time periods 2.08 Understand that the past has been recorded in a variety of different ways		Set the scene for your class to time travel back to the age of the dinosaurs by showing them a video clip from a movie featuring dinosaurs. Divide the class into three groups. Invite each group to time travel to one of the three periods: the Triassic, the Jurassic or the Cretaceous period and report back to the class on what they find. You could also refer them to the time line created for the previous task Children to use laptops and ipads to research the difference between the three time periods. Create a double page spread detailing the differences in the three time periods using their research	Laptops ipads
3	2.01 Know about the main events, dates and characteristics of the past societies they have studied 2.02 Know about the lives of people in those periods 2.03 Know about the main similarities and differences between the past societies they have studied 2.05 Be able to gather information from simple sources		Ask the children, in small groups, to find out about the English palaeontologist, Richard Owen, who first coined the term 'dinosaur' and, as a home-learning exercise, study other notable palaeontologists from the host or home country. From biographical information, encourage the children to find out about the following: - Where and when they were born - Family background and education - Successful finds - Other interesting information about them Look at the features of a biography. Model how to use the information found to write paragraphs for a biography. Children to write the biography of Richard Owen using their research.	laptops ipads
Geography 1	2.05 Be able to use geographical terms 2.08		We know that dinosaurs couldn't swim – yet we've found fossils of dinosaurs on all the continents (i.e. North America, South America,	printed maps

	Be able to use maps at a variety of scales to locate the position and geographical features of particular localities 2.09 Be able to use secondary sources to obtain geographical information 2.11 Be able to communicate their geographical knowledge and understanding to ask and answer questions about geographical and environmental features 2.12 Understand how places fit into a wider geographical context		Africa, Europe, Asia, Antarctica and Australia.) How is this possible? How did they cross from North America to Europe? Give the children, in pairs, an outline map of the world and help them to cut out and label the continents. They should mark the location of the host and home countries on the continents. Now write these names on the board: Pangaea Laurasia Gondwana Look at a map of the world and what continents could have fitted together. Children to stick cut out continents into their books to show the idea of Pangea. Children to explain the process of continental drift and how the continents have moved apart over time.	
Science 1	2.01a Be able to carry out simple investigations 2.01b Be able to prepare a simple investigation which is fair, with one changing factor 2.01c Be able to predict the outcome of investigations 2.01d Be able to use simple scientific equipment 2.01e Be able to test ideas using evidence from observation and measurement 2.01f Be able to link evidence to broader scientific knowledge and understanding 2.01g Be		Start by asking the children to find different ways of sorting a collection of animals into groups. Use pictures or animal models, including a variety of mammals, birds, insects, reptiles, amphibians, fish, etc. How many different groups can the children make? Can they explain their choice of groups? Now give the children a list of dinosaurs and challenge them to think of different ways of sorting them into groups, e.g. carnivore/herbivore, four legs/two legs, predator/prey, fast/slow, armoured/not armoured, long neck/ short neck, etc. How many ways can they be sorted? First, you should use a classification key to group, identify and name animals from the local environment, then you can try sorting dinosaurs in a similar way. Show the children how to create a classification key to sort dinosaurs, e.g. using Ankylosaurus, Compsognathus, Tyrannosaurus and Brachiosaurus, your key might look like this:	

	able to use evidence to draw conclusions			
2	2.02 Be able to gather information from simple texts 2.03 Understand the importance of collecting scientific evidence 2.06 Know about processes and conditions that have an effect on living things 2.07 Know about the principles of nutrition, growth, movement and reproduction 2.08 Know about the living things that are supported by different environments 2.09 Know about ways in which animals and plants are suited to different environments		Ask the question, what did dinosaurs eat? How do we know? Make sure the children understand the terms 'predator' and 'prey'. Depending on whether a dinosaur was a meat-eater or plant-eater, a dinosaur's diet might include: plants, insects, birds, small mammals, fish, other reptiles, and smaller dinosaurs and their eggs. The children should know that animals are 'consumers' - they need the right types and amount of nutrition in order to survive because, unlike plants (that are 'producers'), animals cannot make their own food. They get nutrition from what they eat. The children could draw food chains for different dinosaurs and compare them. A simple food chain could look like this: Plants -> Insects -> Compsognathus -> Allosaurus Older children might discover that some dinosaurs were omnivores. They could draw food 'webs' to reflect these more complicated feeding habits, e.g. a dinosaur might eat both plants and insects but the simple straight-line food chain doesn't allow for this. The children should know that all food chains or webs start with plants and that plants are called the 'producers' because they produce food. Other organisms in the chain are called 'consumers' because they consume the others.	
3	2.13 Know about the function and care of teeth in humans and other animals 2.15 Know about the functions of skeletons and muscles in humans and some other animals 2.20 Be able to classify animals according to their features		Show the children pictures of dinosaur teeth and jaws and ask them to imagine what kind of dinosaurs these belonged to. Does the shape of the teeth or jaw give you a clue as to what the dinosaur would have eaten? Was it a carnivore (meat-eater) or herbivore (plant-eater). Search for 'dinosaur jaw' in Google Images to find lots of examples. The children should discover that flat teeth were good for stripping leaves from branches and for grinding tough plant stems, while long, pointed teeth and large jaws were good for ripping and tearing the flesh of other animals. Compare with the different shapes and types of human teeth – incisors, canines and molars – and how we use them. Use a range of objects which are designed to be like dinosaur teeth to crush and grind leaves and see which is easiest. Children to make links between large flat teeth crushing leaves, and small sharp teeth which would cut meat. Photos for evidence.	Rocks tweezers leaves

4	2.02 Be able to gather information from simple texts 2.06 Know about processes and conditions that have an effect on living things 2.07 Know about the principles of nutrition, growth, movement and reproduction 2.08 Know about the living things that are supported by different environments 2.09 Know about ways in which animals and plants are suited to different environments		Besides the dinosaurs, did any other animals live in the dinosaur era? What plant life and other animal life could be supported by the environment at this time? Ask the children to research some of the following plants and animals from the dinosaur (Mesozoic) era and earlier: Conifers, cycads, horsetails, ferns, ginkgoes, oaks, maples, walnuts, flowering plants (magnolia) and shrubs Reptiles (turtles, crocodiles, snakes, lizards) frogs, insects (dragonflies, mosquitoes, beetles), pterosaurs (Pteranodon, Dimorphodon), birds (Archeopteryx), sea creatures (ammonites, trilobites), plesiosaurs (Elasmosaurus), early mammals (Didelphodon). In small groups or in pairs they could find out about the life cycle of one plant or one animal. The children should be able to describe and explain the life cycle of their chosen plant or animal as a series of annotated diagrams. Children to draw an annotated diagram of the lifecycle of their plant into their books.	
Art 1	2.01 Know how a number of artists - including some from their home country and the host country - use forms, materials and processes to suit their purpose 2.06 Be able to talk about works of art, giving reasons for their opinions		Look at the work of the artists who have depicted dinosaurs in the reference books you have been using while studying this unit. Other notable artists who have painted dinosaurs are: John Sibbick, Stephen Czerkas, Mark Hallett, Douglas Henderson and Gregory Paul. Ask the children, in small groups, to discuss and compare the different art styles: How has the artist used colour, line, pattern, texture and tone? Identify the medium used, e.g. paint and acrylics, computer generated imagery (CGI), or sculpture? Do the dinosaurs look lifelike or more like a cartoon? Are they aggressive or harmless-looking? Are they still or moving? Think about the artist's intention in the work, e.g. what did he/she want to achieve? How do the children feel about the artwork? Children to write their answers on large sugar paper and discuss as a class.	Paper
Art 2/3	2.04 Be able to choose materials and techniques which are appropriate for their task 2.05 Be able to explain their own		Children to use their learning from last week to plan a dinosaur inspired piece of art. It should include a background and foreground with atleast one dinosaur included. Model the use of water colours and mixing to the children and they can then complete their chosen design using water colours.	Paints

	work in terms of what they have done and why			
Reflection				
Exit Point	Set up a dinosaur exhibition to showcase everything the children have learned during the course of the unit. If you haven't already done so, take the children to visit a local museum that has a fossil or dinosaur display for ideas and inspiration. The children could make their own fossil footprints and dinosaur teeth, claws and feet from plaster or air-drying clay. Mount the children's written work and illustrations from the subject tasks against eye-catching backgrounds with reptile-skin patterning or ammonite-repeated designs. Exhibit any dinosaur toys, models and books they have collected. The children could typeset labels for the exhibits and design information plaques using IT resources. Display your timeline and posters of the three periods in the Mesozoic era with corresponding backgrounds illustrating climate and plant-life, with a parade of the children's dinosaur sculptures in front.			