7 Dinosaurs

1 Unit summary

This unit explores a variety of activities both indoors and out and demonstrates the science potential of dinosaurs can be realised. It takes advantage of children's natural fascination with these extinct animals and explores five key areas: Classification, Knowledge about dinosaurs, Camouflage, Fossils and Extinction.

Science learning

Children will develop their understanding of grouping dinosaurs according to criteria such as teeth, claws, spikes and wings. They will also develop their ability to find out information about dinosaurs, including their habitat, camouflage and ideas about how they became extinct. They will learn that we know dinosaurs existed because people have found their remains as fossils, bones and fossilised dinosaur poos (coprolites), thus introducing children to early ideas of evidence as well as specific types of scientists, such as palaeontologists.

Science for practitioners

Palaeontology is the study of the history of life; palaeontologists study all kinds of fossils, including dinosaur bones. Dinosaurs lived on Earth from 250 million years ago until about 65 million years ago, when they became extinct. There are different theories about why this happened; the most popular are that either a huge asteroid hit the Earth or there was a volcanic event that blocked out the Sun's light. Dinosaurs can be classified, like animals today, according to what they ate: carnivores, herbivores and omnivores.

Science progression

Understanding about dinosaurs in EYFS provides the foundation for children in Key Stage 1 to identify and group animals, describe and compare the structure of animals and compare things that are living, dead and have never been alive. In Key Stage 2, children learn about fossils and living things that inhabited the Earth millions of years ago.

Switched on Science links

- Key Stage 1, Year 1, Topic 5 – On Safari

Prime areas

Communication and Language

Children listen to stories and information about dinosaurs, ask questions, listen and respond to what other children know.

Children post their own questions on a 'Wonder Wall', with the expectation that the class will find out the answers.

During this topic, children will develop their ability to use past forms when speaking.

Personal, Social and Emotional Development

Provide children with regular opportunities to share knowledge and facts about dinosaurs, either from research in the classroom or at home. This will further develop their confidence to speak in a group and share their ideas.

Physical Development

Children role-play being a palaeontologist and excavate bones, developing fine motor co-ordination using a brush to clean fossils and tweezers to pick up bones. In PE they can move like a dinosaur, e.g. a Tyrannosaurus Rex, to show good control and co-ordination in large and small movements.

Specific areas

Literacy

Create a story sack with dinosaur books, plastic dinosaurs and puppets so that children can read, retell the story and role-play. Most children love learning complex dinosaur names and can use phonic knowledge to decode words. Create a 'Dinosaur Alphabet' that children add to as they discover another dinosaur.

Mathematics

Children could count dinosaurs, their spikes or search indoors and outdoors for set numbers of camouflaged dinosaurs, e.g. find four Brontosaurus, eight Allosaurus. Place dinosaurs in a transparent container and ask children to estimate the number of dinosaurs and then count them to check their estimate.

Create life-size dinosaur footprints for children to measure. For example, Tyrannosaurus feet were approximately 90 cm long and 65 cm wide and Iguanodon's feet were approximately 70 cm long and 50 cm wide.

Understanding the World

Show children pictures and video clips of dinosaurs in their environment and compare these to where the children live. Discuss similarities and differences, e.g. '*Dinosaurs lived in places with trees, we have trees in our school.*' '*Dinosaurs lived where there were swamps, we don't have swamps where we live.*'

Expressive Arts and Design

Support children's exploration of imaginary dinosaur worlds and encourage inventiveness through the creation of dinosaur masks, which they can use as part of role-play in the dinosaur swamp role-play area. Play dinosaur sounds to support children in using their imagination when role-playing.

2 Getting ready

Resources

Animal bones, Badges, Dinosaur footprints (e.g. made of salt dough or card), Dinosaur identification poster ('Dinosaurs'), Dinosaur shapes, Palaeontologist kit (e.g. small tool box with camera, paint brush, note book, ruler), Plastic dinosaurs, Salt dough bones.

Websites and books

Dinosaur Poems – John Foster and Korky Paul

Dinosaur Roar! – Henrietta Stickland and Paul Stickland

Dinosaur Stomp! – Paul Stickland

Dinosaurs and all that Rubbish – Michael Foreman

Harry and the Bucketful of Dinosaurs – Ian Whybrow and Adrian Reynolds

That's Not My Dinosaur – Fiona Watt and Rachel Wells

The Dinosaur's Diary – Julia Donaldson

Brontosaurus, Will You Wait For Me? (song) – David Bellamy

Natural History Museum website

Dinosaur Museum: dino facts website

BBC: dinosaur information website

Key Vocabulary

Armour, Bones, Coprolite, Dinosaurs, Dinosaur poo, Earth, Eggs, Excavate, Extinct, Footprints, Fossils, Magnifying glasses, Maps, Museum, Paintbrushes, Palaeontologist, Papier mâché fossils, Skeleton, Spikes, Swamp, Tail, Trees.

Home science links

Parents can encourage children to search the Internet safely to find out more about dinosaurs. Children could create pictures of dinosaurs and make models with parents. Children could bring in books on dinosaurs to school to share with others, as well as any models, toy dinosaurs and dinosaur eggs.

3 Explorations

You could further enrich children's explorations by adding background music or sound, e.g. dinosaur roars in, or close to, areas where children are working, to add authenticity to their activities.

Introductory activity

Show children an Internet clip, e.g. BBC's *Walking With Dinosaurs*. Most children will be spellbound watching these animations. Encourage children to talk about the clip and help to develop their understanding that the dinosaurs they see are not real, but a representation of what we think that they looked like.

Focussed exploration

Activity 1 – Identification and Classification

Children could use the dinosaur identification poster to compare and name models, photographs and pictures of dinosaurs with those on the poster, using key features such as horns, long tails and size. Read *Harry and the Bucketful of Dinosaurs* to the children; in the story Harry visits the library to research dinosaur names and loves to learn and say all the names.

Give children model dinosaurs to sort into different groups using, e.g. hoops or containers. Support children in moving from choosing their own criteria for classification to using their developing subject knowledge about dinosaurs, such as carnivores and herbivores, predator and prey, slow/fast-moving.

Activity 2 – Dinosaur Camouflage

Help children to understand that animals use camouflage to hide from predators or to sneak up on their prey. Hide models or pictures of dinosaurs outdoors, making them harder to find by hiding them against a similar coloured background. Children will love going on a 'dinosaur hunt' to search for them.

Children could make their own dinosaurs using a range of materials, such as recyclable boxes, modelling rock or papier mâché. Encourage children to use their research and pictures of dinosaurs to create scientifically correct dinosaurs, and then hide them in the school grounds. Their dinosaur could be a 'new dinosaur' named after themselves or its features e.g. Noahsaurus, or Stripeysterotops.

As children create their new dinosaur, challenge them to use knowledge about skin texture, scales, patterns, colour, etc. in order to camouflage their dinosaur against a background such as fabric, paper or plants.

Activity 3 – Dinosaur Fossils

In this activity, help children to understand that fossils help to tell us what animals and plants looked like millions of years ago. Provide children with cleaned animal bones from a butcher or make bones made from salt dough (preferably with the children). Create a role-play scenario where children are explorers/ palaeontologists, who plan and go on an expedition to find dinosaur bones. Enhance this role-play by providing props such as a backpack/haversack so that children can role-play being a palaeontologist. They can use a kit (e.g. small toolbox with camera, paint brush, notebook, ruler) to uncover dinosaur bones, eggs, poo as well as plant fossils. Encourage rich language by providing children with badges that say '*I am a palaeontologist*' and model words such as fossils, bones, excavate and evidence.

Free-flow exploration

Activity 1 – Dinosaur Swamp

Use children's knowledge of dinosaurs to create a swamp in the EYFS Tuff Spot or Tray. Encourage children's thinking through statements such as '*I wonder ... ?' What a swamp looks like? What could we use to make it look and feel like a swamp? Which plants and materials could we use so that the dinosaurs could hide?* Give children choices, for example green jelly or shaving foam to use with soil or sand to make a swamp. Or children could mix fungicide-free wallpaper paste with potting compost for a brilliant swampy effect. Challenge children to agree among themselves which would make the best swamp and why, using vocabulary such as like, idea, disagree, prefer, change, instead. Support children in sharing ideas and listening to each other.

Taking it further

Dinosaur eggs will help children to understand that young dinosaurs hatched from an egg. You can purchase dinosaur eggs from gift, book or toy shops. When the egg is placed in water, the egg breaks and a young 'dinosaur' hatches. By leaving the dinosaur in the water, it will continue to grow in size over a number of days. Once hatched, the children could identify the type of dinosaur and create a habitat or museum for it and place the egg and dinosaur with information.

4 Characteristics of effective learning

Playing and exploring

- Children can role-play being a palaeontologist and represent their experience. Children are willing to have a go and, through trial and error, find dinosaur bones and eggs.
- Children can engage in an open-ended activity where they role-play being dinosaurs, showing interest in using their knowledge.

Active learning

- Children can pay attention to the detail of dinosaurs and persist with research, perhaps at home.

Creating and thinking critically

- Children can think of their own ideas of how to make a swamp, try them out and review which approach worked best.
- Children can make links between understanding of camouflage and applying their understanding to their experience of engaging in a dinosaur hunt.

Early learning goals

ELG 1 Listening & Attention: All activities; **ELG 2 Understanding**: All activities; **ELG 3 Speaking**: All activities. **ELG 4 Moving & Handling**: Free-flow exploration 1, Physical Development section; **ELG 5 Health & Self-care**: N/A; **ELG 6 Self-confidence & Self-awareness**: All activities; **ELG 7 Managing Feelings & Behaviour**: Free-flow exploration 1; **ELG 8 Making Relationships**: Free-flow exploration 1; **ELG 9 Reading**: Focussed exploration 2; **ELG 10 Writing**: Focussed exploration 2; **ELG 11 Numbers**: Mathematics section; **ELG 12 Shape, Space & Measure**: Focussed exploration 1; **ELG 13 People & Communities**: N/A; **ELG 14 The World:** Introductory activity, Free-flow exploration 1; **ELG 15 Technology**: Introductory activity and Focussed exploration 2; **ELG 16 Exploring & Using Media & Materials**: Expressive Arts and Design section, Free-flow exploration 1; **ELG 17 Being Imaginative**: Free-flow exploration 1.