

Dinosaurs and the Mesozoic Era

Lesson Plan

Grade Level: 6-8

Curriculum Focus: Life Science

Lesson Duration: Two class periods

Student Objectives

- Learn which dinosaurs lived during each period of the Mesozoic era.
- Discover how dinosaurs from each Mesozoic period adapted to their environment.

Materials

- Discovery School video on *unitedstreaming: When Dinosaurs Ruled: Australia*
Search for this video by using the video title (or a portion of it) as the keyword.

Selected clips that support this lesson plan:

- Proof of Dinosaurs Down Under
 - Jurassic Australia: Rhoetosaurus Found
 - Langdon Homestead: Home of the Muttaborrasaurus
- Pens, pencils, and markers
- Crayons and paints
- Index cards
- Large sheets of paper
- Tape or glue
- Books and magazines about dinosaurs
- Computers with Internet access (optional but very helpful)

Procedures

1. Explain to students that humans as we know them today have been on Earth for about 80,000 years, a relatively short time considering that dinosaurs roamed the Earth millions of years earlier. Dinosaurs lived during the Mesozoic era, which lasted from about 250 million to 63 million years ago. Dinosaurs first emerged and thrived in that era, sometimes called the Age of Dinosaurs. Explain to students that not all dinosaurs lived at the same time. Like all animals, they adapted as their environment changed or they became extinct.

2. Review the three periods of the Mesozoic era with the class. Draw a timeline on the board or on a large piece of paper:
 - The **Triassic** began around 248 million years ago and lasted about 35 million years. Earth's climate ranged from hot to mild, and there were many inland deserts. The Triassic ended with a mass extinction of many plants and animals.
 - The **Jurassic** began around 213 million years ago and lasted for about 69 million years. The climate on Earth was warm and damp with many active volcanoes. The Jurassic had a wide variety of dinosaur species.
 - The **Cretaceous** began around 144 million years ago and lasted for about 79 million years. The period experienced a warm and mild climate; Earth's first flowers and trees appeared. Dinosaurs with horns and armor dominated the landscape. This period ended with a mass extinction, which some scientists believe wiped out the dinosaurs and many other species.
3. Explain that students will work in groups to research dinosaurs and create a mural.
4. Divide the class into three groups and assign each group a Mesozoic period. Have each student choose a dinosaur from the following list. Make print resources available to students, who can also visit the Web site <http://www.enchantedlearning.com/subjects/dinosaurs>.
 - **Triassic:** Plateosaurus, Lesothosaurus, Saltopus, Massospondylus, Anchisaurus, Coelophysis, Dilophosaurus, Eoraptor, Herrerasaurus, Mussaurus, Riojasaurus
 - **Jurassic:** Heterodontosaurus, Lesothosaurus, Syntarus, Vulcanodon, Megalosaurus, Dilophosaurus, Xiaosaurus, Brachiosaurus, Ceratosaurus, Dryosaurus, Janenschia, Kentrosaurus, Yangchuanosaurus, Camarasaurus, Camptosaurus, Compsognathus, Allosaurus, Aptosaurus, Diplodocus, Ornitholestes, Stegosaurus, Supersaurus
 - **Cretaceous:** Iguanadon, Psittacosurus, Hylaeosaurus, Utahraptor, Armargasaurus, Carcharodontosaurus, Ouranosaurus, Spinosaurus, Leaellynasaura, Minmi, Muttaborrasaurus, Acanthopholis, Baryonyx, Hypdilophodon, Deinychus antirrhopus, Microvenator, Sauropelta, Gigantosaurus, Gallimimus, Oviraptor, Proceratops, Saurolophus, Tyrannosaurus rex, Velociraptor, Thescelosaurus, Anatotitan, Albertosaurus, Ankylosaurus, Corythosaurus, Edmontosaurus, Euoplocephalus, Lambeosaurus, Maiasaura, Monoclonius, Montanoceraptor, Ornithomimus, Pachycephalosaurus, Parasaurolophus, Styracosaurus, Triceratops
5. Distribute the Dinosaur Profile (see last page) as a classroom activity. Have students use it as a guide as they research.
6. As a homework assignment, have students find a picture of the dinosaur in a book or on a Web site and draw it to this scale: 1/4 inch = 1 foot. (Share this hint: Divide the length of the dinosaur by 4; a 20-foot dinosaur, then, is 5 inches.)
7. During the next class period, have the groups plan their murals. Tell students to consider their dinosaurs' habitats —swamp, desert, grassland, or forest. Have each group create a mural on a large sheet of paper. Have students draw and label plants and other environmental features.

8. After the murals have been completed, have students cut out their dinosaurs and place them in the appropriate location on the mural, such as near plants or animals the dinosaurs ate. Based on their research, students should write brief dinosaur descriptions on an index card, which they will tape next to their pictures.
9. Hang the murals around the classroom. Ask the class how the Mesozoic periods were alike and how they were different. How did dinosaurs change as their environment changed?

Assessment

Use the following three-point rubric to evaluate students' work during this lesson.

- **3 points:** Students completed the dinosaur profile, transferred research to index cards, and created a scale drawing of a dinosaur; worked cooperatively to draw habitats and place dinosaurs correctly; participated actively in the final discussion.
- **2 points:** Students completed most of dinosaur profile, transferred most key points to index cards, and created a drawing of a dinosaur not quite to scale; worked cooperatively to draw plants and place dinosaurs in nearly the correct spot; participated somewhat in the final discussion.
- **1 point:** Students completed part of the dinosaur profile, transferred some key points to index cards, but did not complete a drawing of a dinosaur, which was not drawn to scale; worked somewhat cooperatively to draw habitats, which were not complete and in which dinosaurs were not placed correctly; did not participate in the final discussion.

Vocabulary

adapt

Definition: To adjust to particular conditions

Context: Animal species that survive have successfully adapted to a changing environment.

extinction

Definition: The total disappearance of a species so that it no longer exists

Context: The giant panda and other animals are so few in number that scientists fear the animals face extinction.

habitat

Definition: The place an animal or plant naturally lives

Context: An animal's natural habitat is the area in which it can find enough food and water to survive.

predator

Definition: An animal that hunts other animals for food

Context: A hawk's strong talons, sharp beak, and keen eyesight make it a fierce predator.

Academic Standards

National Academy of Sciences

The National Academy of Sciences provides guidelines for teaching science in grades K–12 to promote scientific literacy. To view the standards, visit this Web site:

<http://books.nap.edu/html/nses/html/overview.html#content>.

This lesson plan addresses the following science standards:

- Life Science: Diversity and adaptations of organisms
- Earth Science: Earth's history

Mid-continent Research for Education and Learning (McREL)

McREL's Content Knowledge: A Compendium of Standards and Benchmarks for K-12 Education addresses 14 content areas. To view the standards and benchmarks, visit link:

<http://www.mcrel.org/compendium/browse.asp>

This lesson plan addresses the following national standards:

- Science – Life Sciences: Understands biological evolution and the diversity of life, Understands relationships among organisms and their physical environment; Earth and Space Sciences: Understands Earth's composition and structure
- Language Arts – Reading: Uses reading skills and strategies to understand and interpret a variety of informational texts

Support Materials

Develop custom worksheets, educational puzzles, online quizzes, and more with the free teaching tools offered on the Discoveryschool.com Web site. Create and print support materials, or save them to a Custom Classroom account for future use. To learn more, visit

- <http://school.discovery.com/teachingtools/teachingtools.html>



Dinosaur Profile

Be sure to provide all of the following information in your dinosaur!

Name of dinosaur

- Does the dinosaur's scientific name have a translation? If so, what is it?
- Dinosaur's scientific name (and translation, if available)

Appearance

- Dinosaur length and height
- Describe its physical features. (How large is its mouth? What are the teeth like? Does it walk on two legs or four? How does its physical structure help it survive? For example, dinosaurs with long necks can reach leaves at the tops of trees.)

Habitat

- Where did the dinosaur live?
- In what type of environment did it live? (swamp, desert, grassland, or forest)

Diet

- Did the dinosaur eat meat, plants, or both?

Behavior

- Did the dinosaur live alone or in herds?
- Did it sit on a nest of eggs or leave them to hatch alone?

Fun facts

- Share any interesting facts you discover about this dinosaur.