What are Fossils?

Chapter 8 Lesson 2
Part 2

ByDesign Science, Level 4
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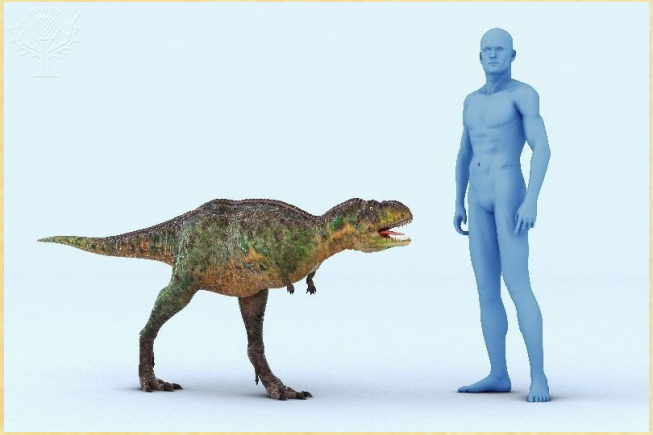
Dinosaurs

- Dinosaurs are extinct, so everything we understand about them comes from interpreting their fossils.
- From dinosaur bones we can see that they were reptiles, but their legs were underneath their bodies rather than out to the sides as in modern lizards.

Fossilized dinosaur skull found in the Jura Mountains, Switzerland

Dinosaurs

- Some dinosaurs were huge creatures.
- But other dinosaurs were small, the size of a turkey or a dog.



Model of a Aucasauruseye dinosaur showing the size in comparison to a human.

Model of a Spinosaur dinosaur showing the size in comparison to a human.

Dinosaurs

Fragment of a lower jaw that once belonged to the carnivorous dinosaur Megalosaurus.

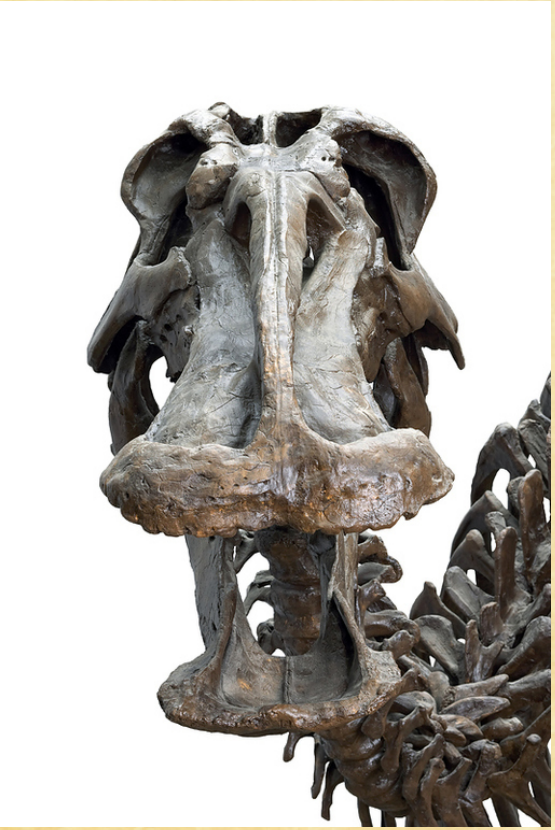
- What do you think dinosaurs ate?
- Several clues, such as fossilized stomach contents, fossil dung, and fossil teeth, tell us.
- Looking at a dinosaur's teeth tells you a lot about how it lived, the type of food it ate, how it got food, and whether it chewed it, or swallowed it whole.
- Some dinosaurs were **carnivores**, or meat-eaters.
- Others were **herbivores**, or plant-eaters.

Dinosaurs

- Teeth are harder than bone and are more likely to fossilize than bones.
- Many fossil dinosaur teeth have been found.
- Some species are known only from their fossil teeth.

Peg teeth of a Diplodocus, a large herbivorous dinosaur.

Dinosaurs



Head of Edmontosaurus, a type of duck-billed dinosaur.

- The number of teeth that dinosaurs had varied widely.
- Some had no teeth. Others had many.
- Tyrannosaurus rex, or T. rex, had 50 to 60 thick cone-shaped teeth, some more than 20 cm (8 in.) long.
- Duck-bill dinosaurs had the most teeth, up to 960.

Dinosaurs

T-rex

- Dinosaur teeth also varied in shape.
- Some dinosaurs had peg-like teeth, some had spoon-shaped teeth, some had sharp-pointed teeth, and some had strong, bone-crushing teeth.
- Others had chisel-like teeth for nipping plants or flattening teeth for grinding plants.
- Dinosaurs with no teeth had cutting beaks and swallowed food without chewing.

Dinosaurs

- How did dinosaurs that lacked grinding teeth grind up tough plants?
- Some fossil dinosaurs have smooth rocks in the stomach area.
- Paleontologists believe that some dinosaurs swallowed rocks and these rocks are used to grind up food in dinosaurs' gizzards like some birds do today.

Dinosaur stomach stones

Dinosaurs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Dinosaurs

- Scientists often have strong disagreements about how to interpret fossils.
- These disagreements may be because scientists have different worldviews and interpret the same evidence differently.

Dinosaur fossil research.

Dinosaurs

- But fossils themselves do not always provide enough evidence to draw a conclusion.
- For example, what was dinosaur skin like?
- There were fossils of dinosaur skin imprints, so we can know about dinosaur skin texture, but skin imprints do not tell us about skin color or patterns.
- These details must be filled in with your imagination

Dinosaurs

- Some scientists think that dinosaurs had feathers, like birds.
- There are rare dinosaur fossils with structures that could be feathers, but they are not easy to see.
- Other scientists say these structures are not true feathers.
- There are other similarities between some dinosaur skeletons and birds. As a result, some scientists say birds come from dinosaurs.

Anchiornis feathered dinosaur, artwork

Dinosaurs

- Studying the clues that fossils give us about ancient life is fun and challenging.
- Fossils are like old photos.
- Each one reveals something about what life was like in the past.
- Christians appreciate that life in the past was amazing, fascinating, and complex.
- Fossils certainly show this.

Image Citation

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