

DINOSAUR DISCOVERY

KINDERGARTEN-SECOND

Science TEKS

Kindergarten: K.2A, K.3C, K.10A, K.9B

First Grade: 1.2A, 1.2D, 1.2E, 1.9C, 1.10A, 1.10C, 1.10D

Second Grade: 2.2A, 2.3C, 2.9a, 2.9C, 2.10A

Vocabulary

adaptations, carnivore, consumer, dinosaur, ecology, extinction, food chain, herbivore, omnivore, organism, paleontologist, producer, skull, triceratops, tyrannosaurus rex

Pre-Show Activity

Pre-Show Lesson: Dinosaurs

Post this question on the board: "What is a dinosaur?"

Materials:

Per class: tyrannosaurus and triceratops skull pictures (Appendix A-2)

Per group: variety of prehistoric animal pictures (Appendix A-1)

Per student: dinosaur skull picture, food chain pictures (Appendix A-3)

Procedure:

1. Ask students what they know about dinosaurs. For older students, make a list on a chart. Go over the following facts about dinosaurs:

- To be considered a dinosaur, an organism's legs must have been underneath it.
- No dinosaurs ever lived in water.
- Dinosaurs lived millions of years ago.

Have students act out being a dinosaur following the rules above. Ask them to repeat the facts about dinosaurs to a partner. Have them turn to another partner and repeat them.

Teacher Information:

- Dinosaurs ruled the Earth for over 160 million years, from the Triassic period around 230 million years ago through the Jurassic period and until the end of the Cretaceous period around 65 million years ago.
- The time period from 250 million years ago until around 65 million years ago is known as the Mesozoic Era. It is often referred to as the Age of the Dinosaurs because most dinosaurs developed and became extinct during this time.
- It is believed that dinosaurs lived on Earth until around 65 million years ago when a mass extinction occurred.
- Scientists believe that the event leading to the extinction may have been a massive asteroid impact or huge volcanic activity. Events such as these could have blocked out sunlight and significantly changed the Earth's ecology.
- A person who studies dinosaurs is known as a paleontologist.
- Rather than being carnivores (meat eaters), the largest dinosaurs, such as the Brachiosaurus and Apatosaurus, were actually herbivores (plant eaters).
- To help fight meat eaters such as the Allosaurus or Spinosaurus, many plant eaters had natural weapons at their disposal. Examples of this include the spikes on the tail of the Stegosaurus and the three horns attached to the front of the Triceratops's head shield.

2. In small groups, students will sort pictures of prehistoric animals as a dinosaur or not a dinosaur. You may also want to include some modern day animal pictures. Debrief as a class by discussing where students put the pictures and why. Remember, scientists believe that birds are considered direct descendents of dinosaurs; present day reptiles are relatives of dinosaurs but not considered descendents because their legs are on the sides, not under them like dinosaurs.

3. Students sit in a circle up front. Show students a picture of the triceratops skull. Ask, "What can we tell about how this dinosaur lived by looking at its skull?" or, for younger students, just ask them to tell you something that they observe about the skull. When they name an observation, explain how these adaptations are useful to the dinosaur (see Appendix A-2).

- Flat teeth: It ate plants (herbivore). You may want to model how flat teeth work by using two flat stones and a piece of lettuce or a green leaf. Have students feel their teeth with their tongue. Which ones are flat? Which ones do you use for mashing your food?
- Eyes on the side: It was prey to other animals. Remember, eyes on the side, needs to hide.
- Horns: It was used as protection from predators.
- Turtle like beak: It was used to clip through tough plants.
- Bony frill: Protected its neck.
- Large nasal cavity: It could smell its predators.

Ask: “The triceratops has all these body parts or adaptations to protect it from predators. Who do you think its main predator was?” Answer: *Tyrannosaurus rex*

Show students a picture of *Tyrannosaurus rex*'s skull. Ask, “What can we tell about *Tyrannosaurus rex* by looking at its skull? What adaptations did it have?” (See Appendix A-2)

- Sharp teeth: Used to tear meat.
- Eyes forward: This gave them depth perception, which means that they could see the world in 3-D.

4. Students will use the food chain pictures and create a dinosaur food chain. These pictures can be copied on tag board and strung together to hang from the ceiling. Older students may want to label them on the back: producer, consumer-herbivore, consumer-carnivore (Appendix A-3).

Post-Show Enrichment Activities

Activity One: Dinosaur Reflections

Materials: Dinosaur skeleton pictures found in Appendix A-4

Procedure:

Each student will get a picture of a dinosaur skeleton. They will write down three facts that they learned from the presentation about their dinosaur and one question that they have about dinosaurs. (Appendix A-4) Make sure that no two students in a group have the same dinosaur. Once they finish, have students exchange dinosaur pictures and facts with another group. See if they can put the right information with its matching dinosaur.

Activity Two: Dinosaur Hunt

Materials: *Digging up Dinosaurs* by Alike, dinosaur bone pieces, plastic shoe box

Procedure:

1. Read *Digging up Dinosaurs* by Alike.
2. Give each group a plastic shoe box with dinosaur bone pieces in it. You can get some very inexpensive plastic dinosaur bones skeleton kits on line, or you can use the pieces in Appendix A-5.
3. Tell students that they are going to be paleontologists. Students will dig up the skeleton bones and try to piece the dinosaur bones together to make a whole skeleton.
4. They will then try to tell the teacher what they know about the dinosaur including if it is a carnivore or herbivore and how they know.

You may also find a virtual puzzle on line. There is one on the BBC website called *Skeleton Jigsaw*.

Activity Three: Dinosaur Museum

Materials: modeling clay, modeling dough, feathers, buttons, pipe cleaners, sparkles, cardboard pieces, construction paper, tissue paper, etc.

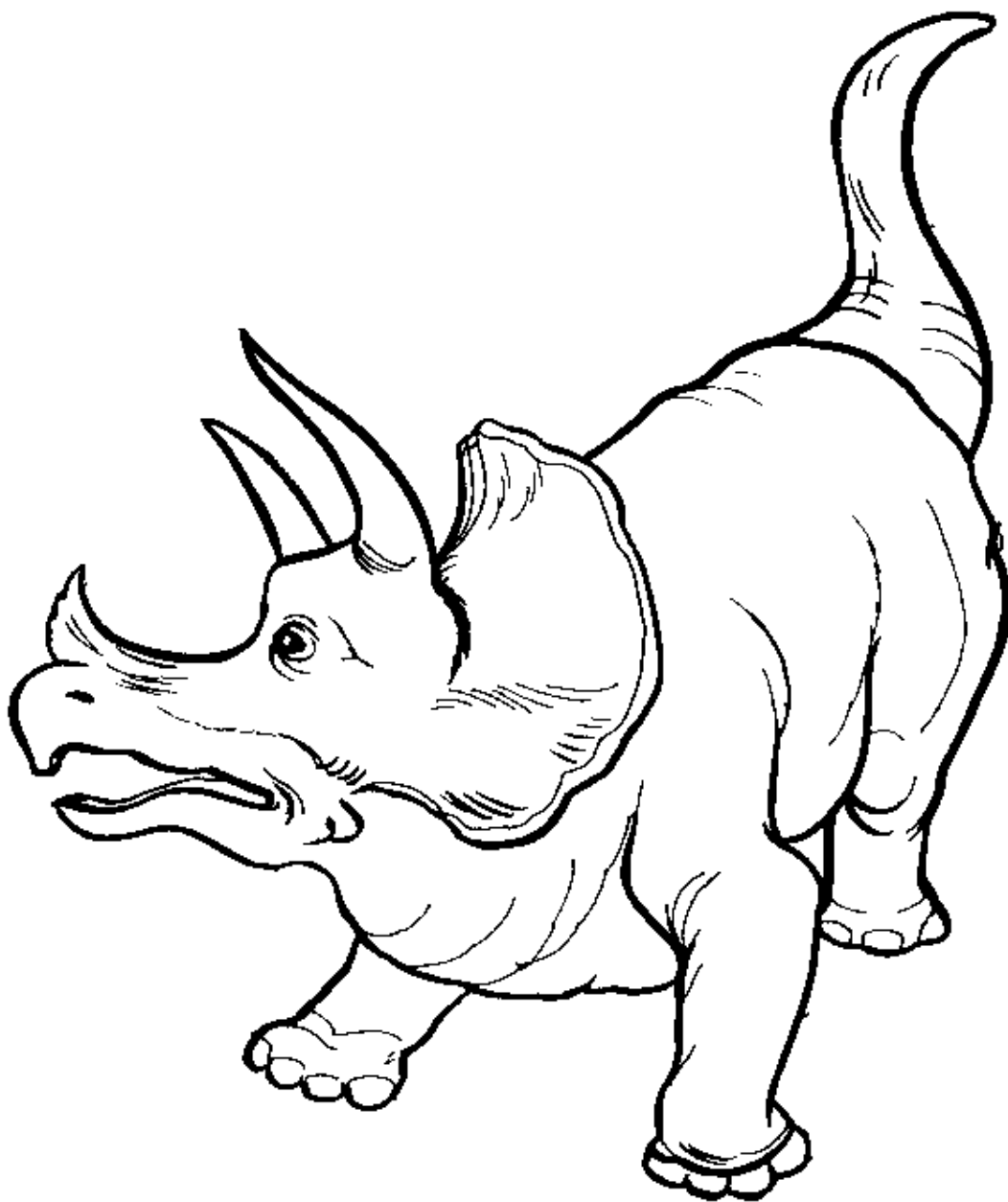
Procedure:

1. Students will invent their own dinosaurs using the material with which they are presented. Tell students that their dinosaur needs to be either a carnivore or an herbivore.
2. You may have older students list at least three adaptations that they gave their dinosaur and how those adaptations help them to survive. This could be done on an index card.

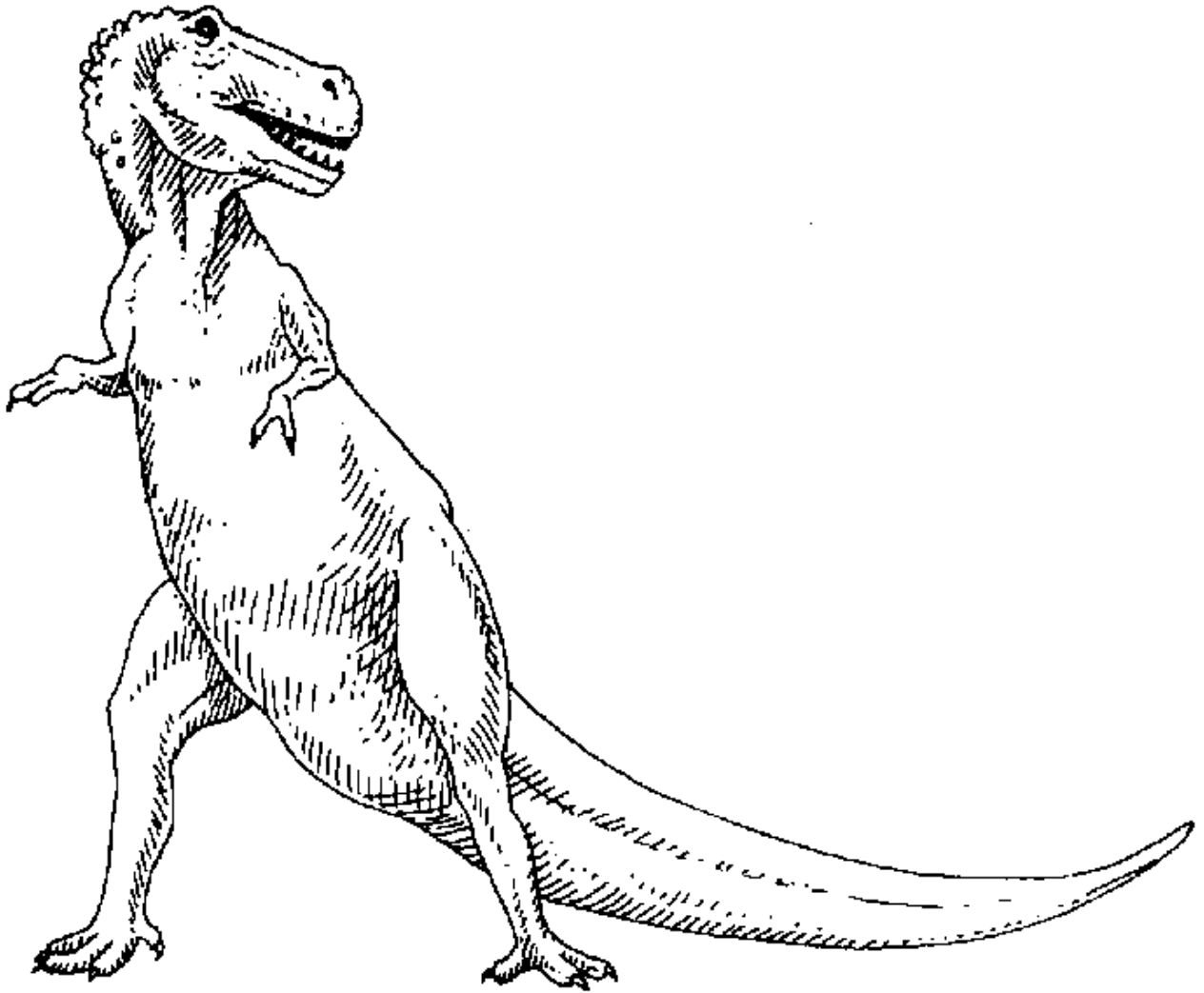
Display the dinosaurs in a class Dinosaur Museum.

Appendix

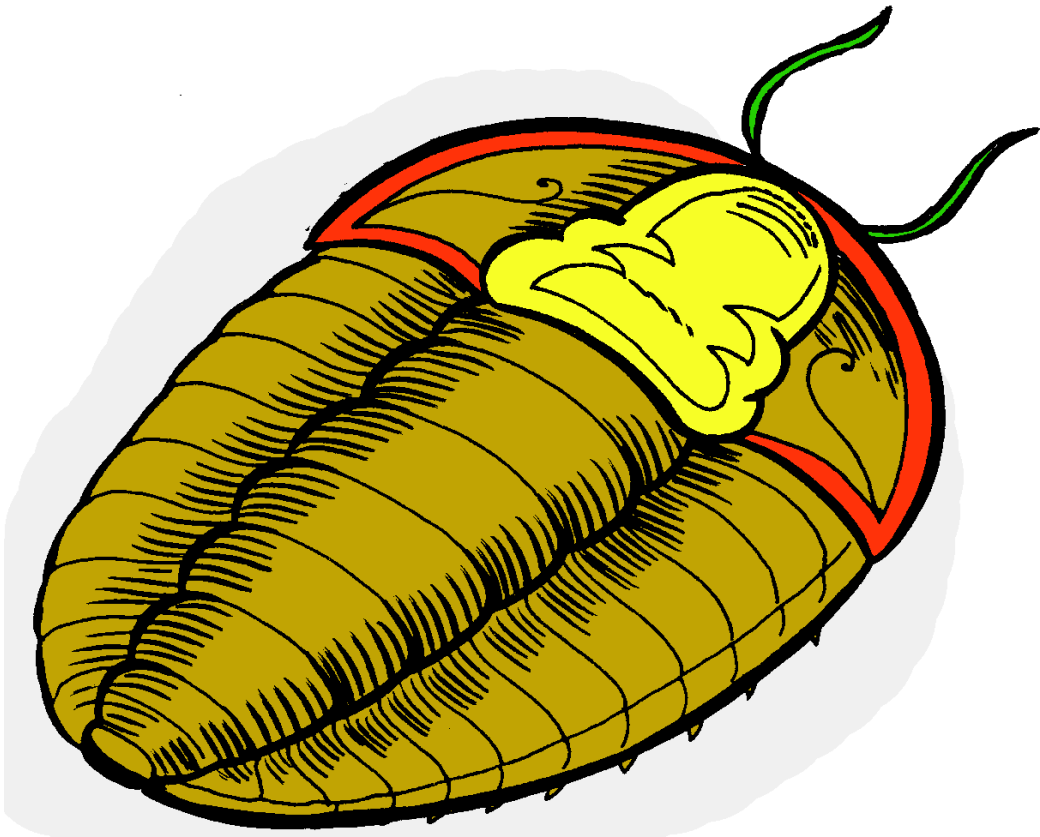
A-1



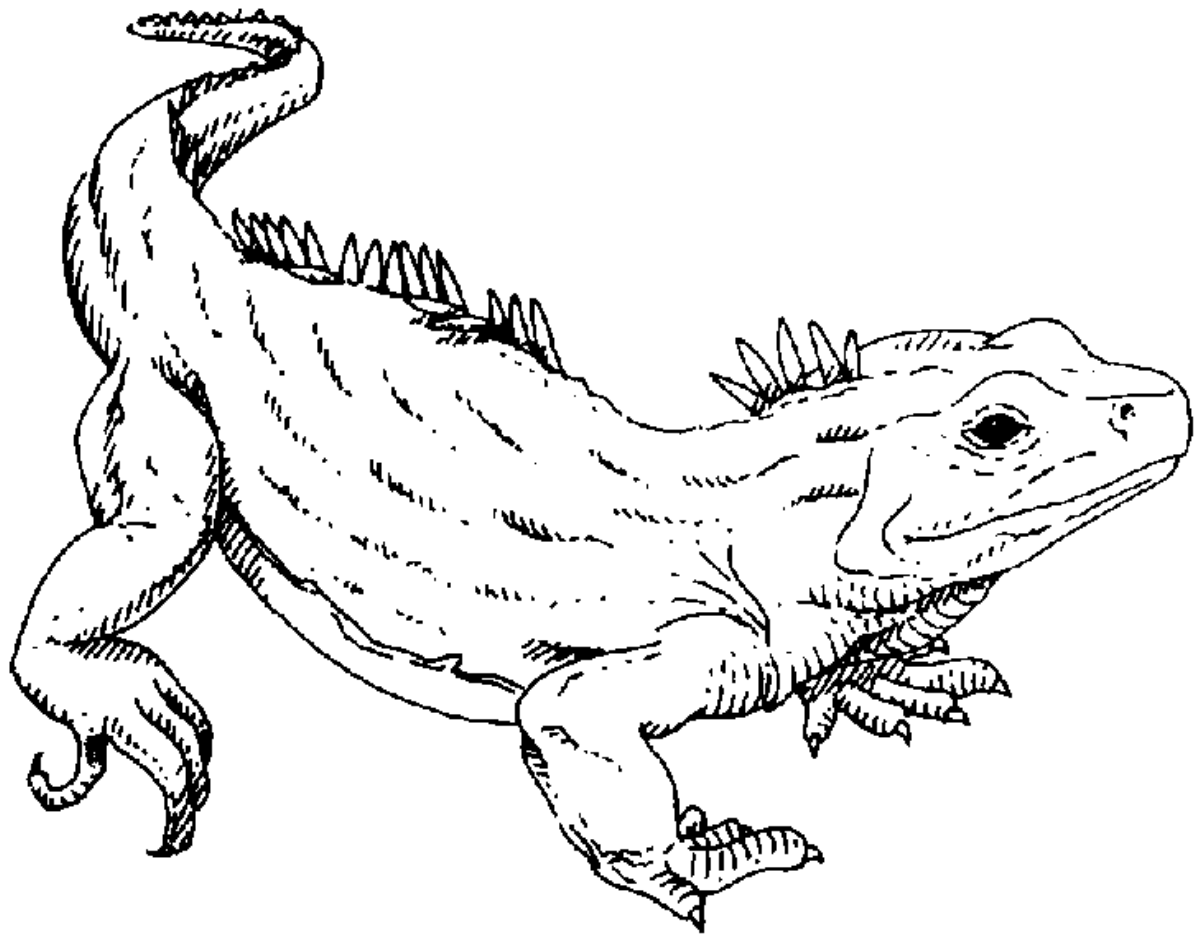
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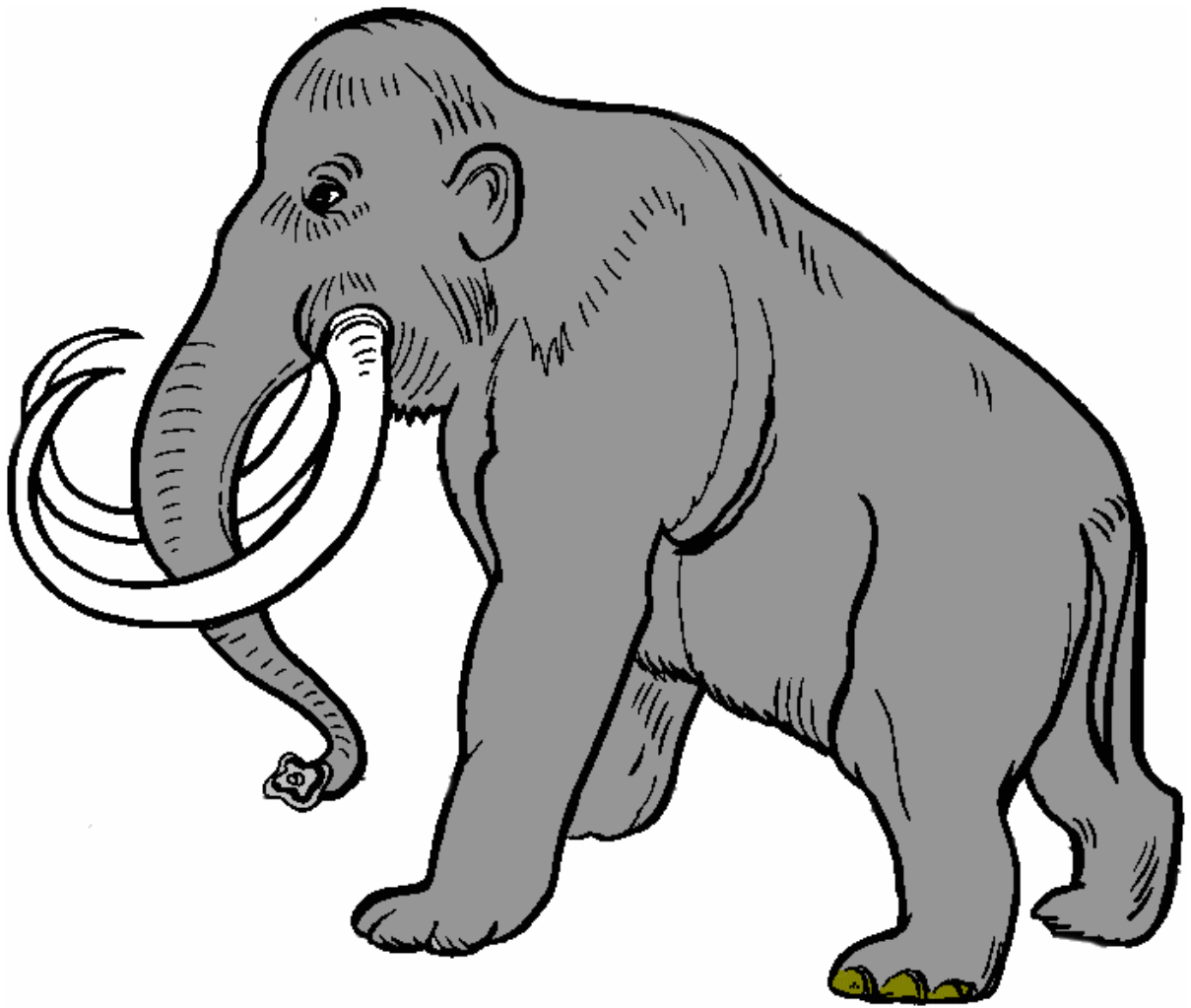
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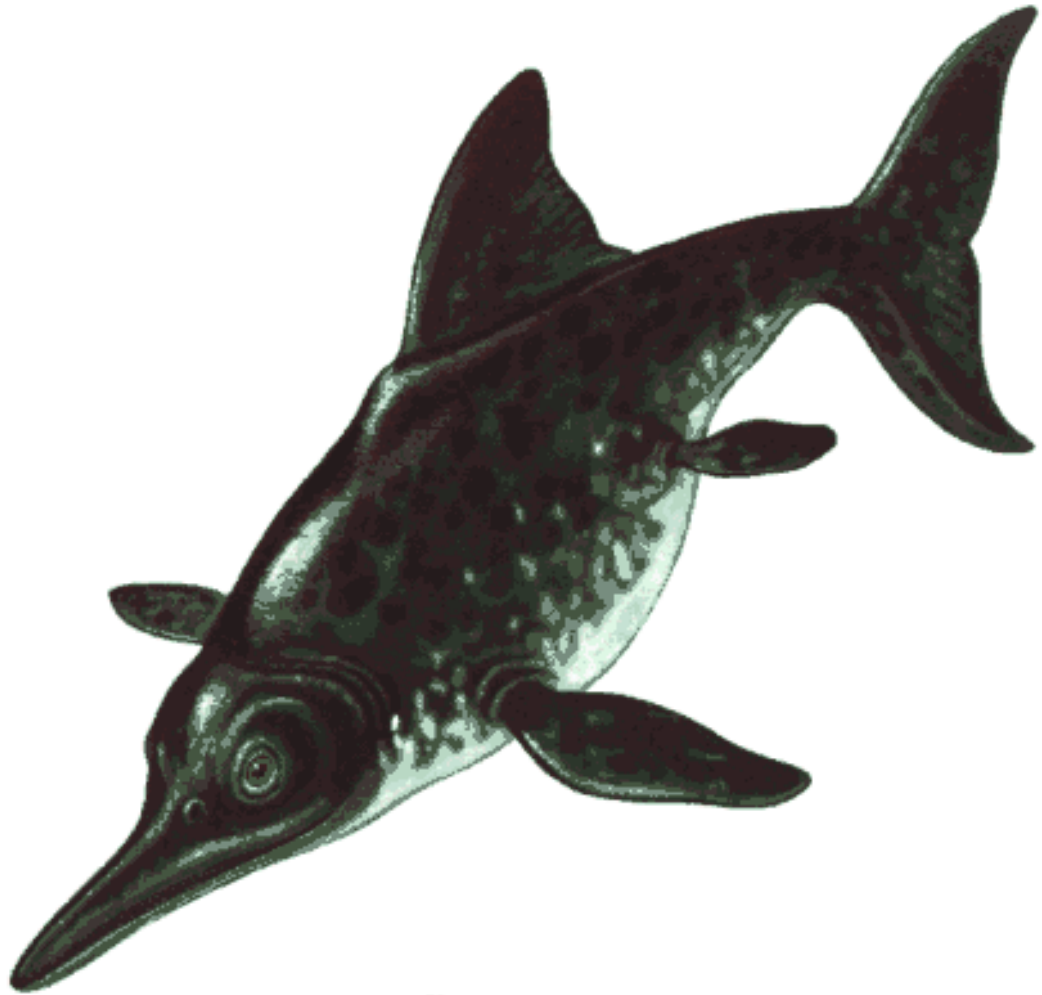
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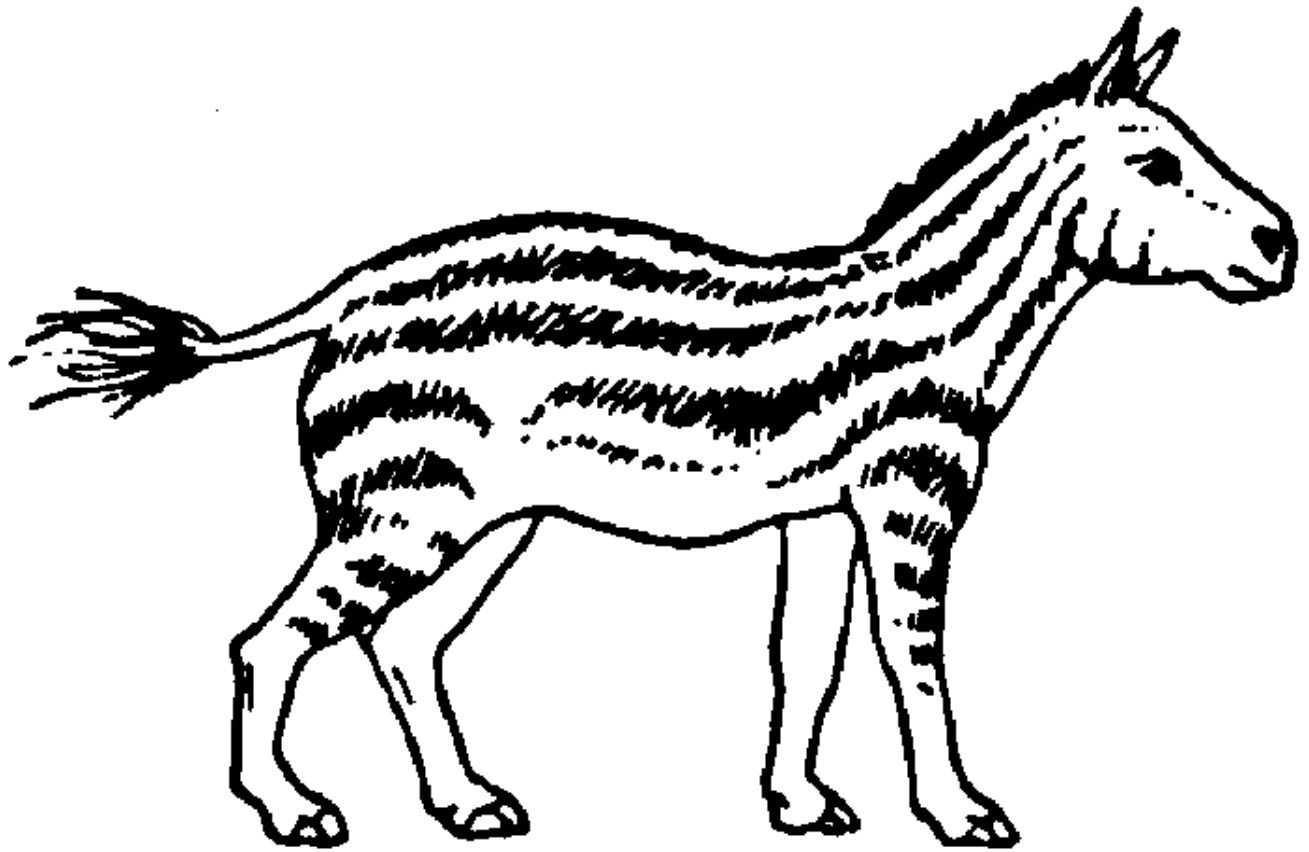
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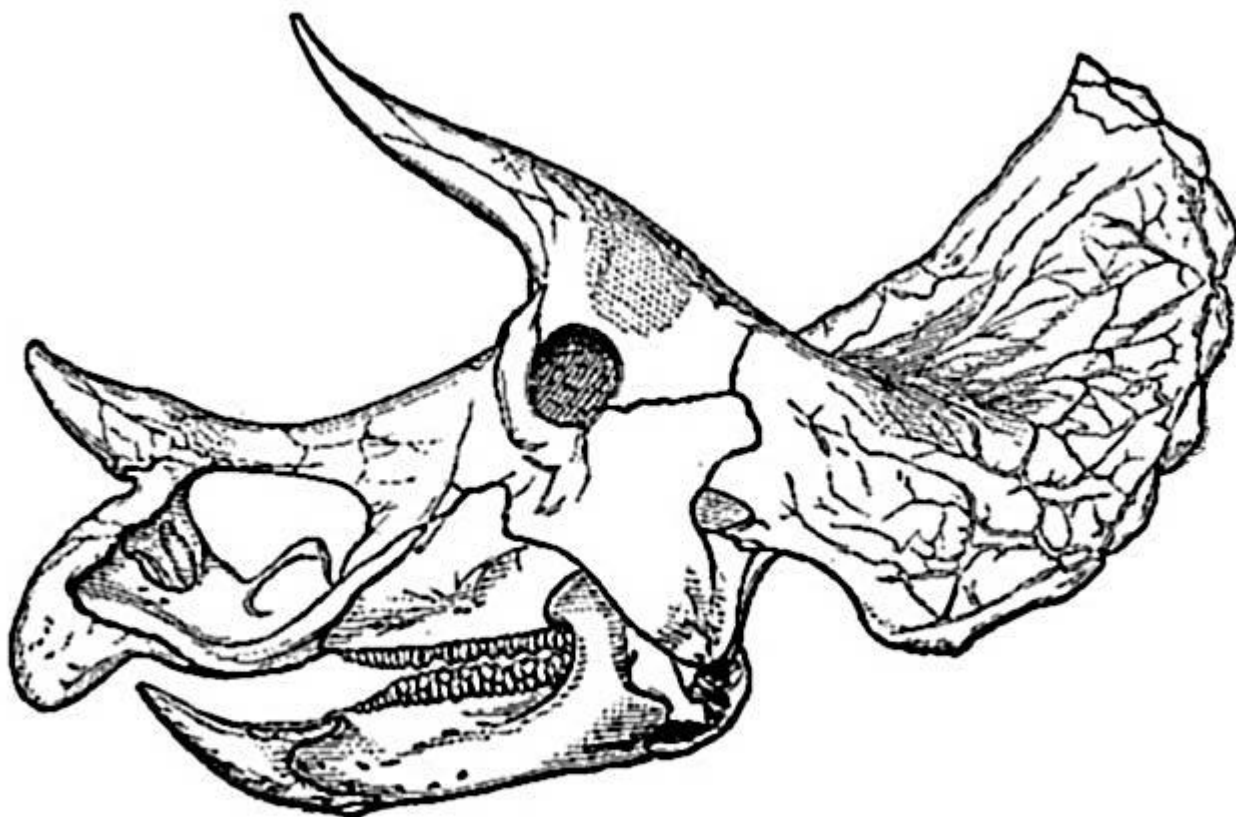


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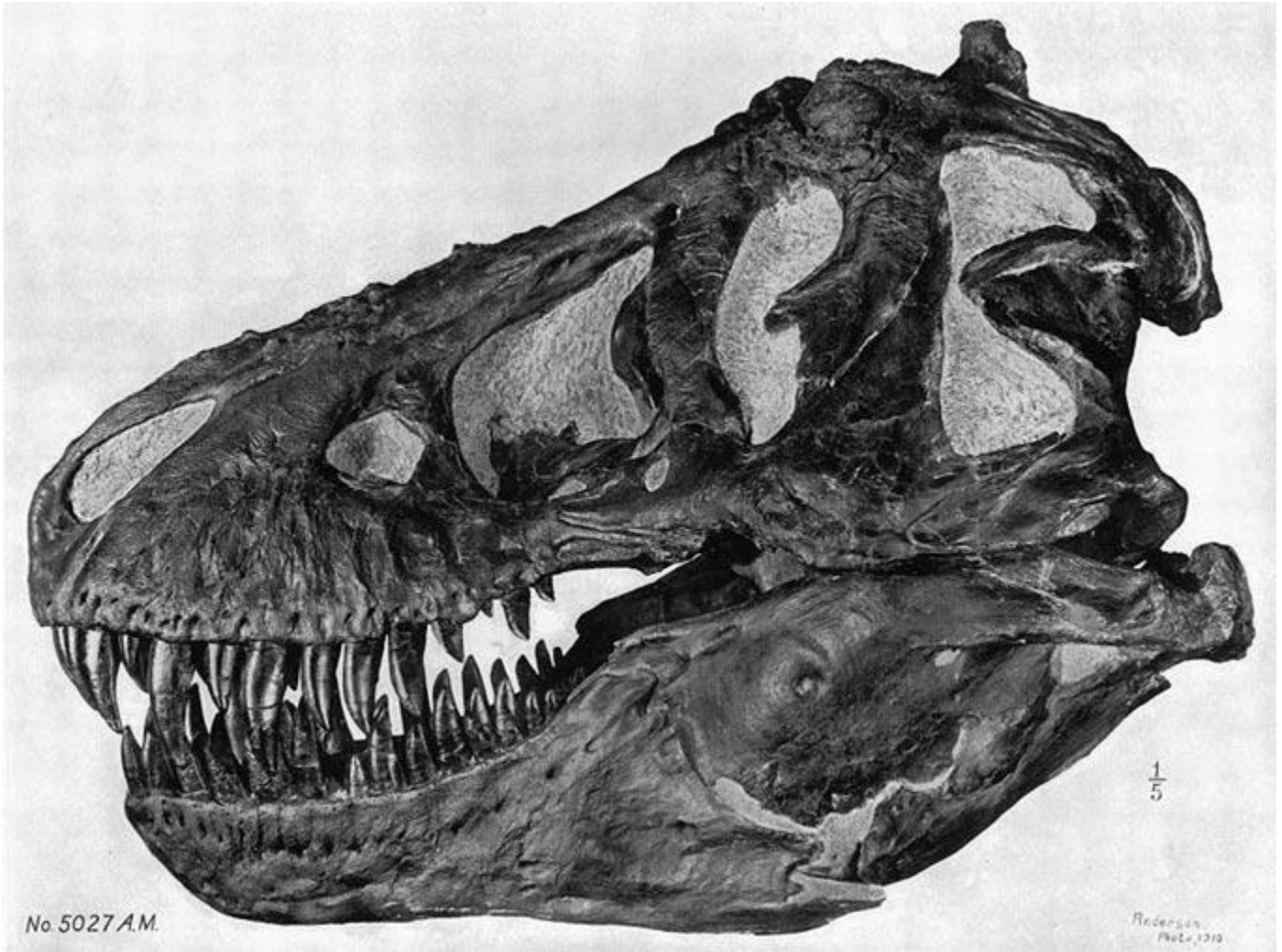


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A-2



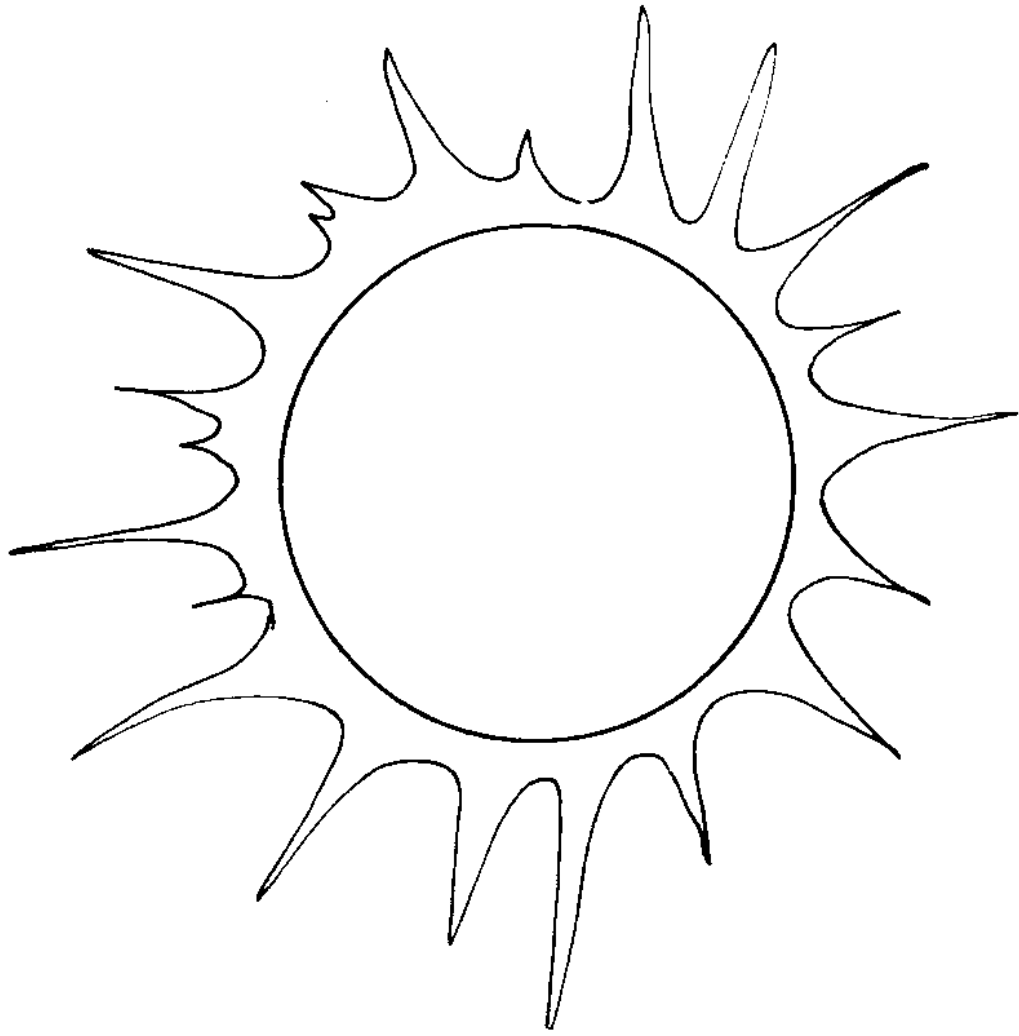
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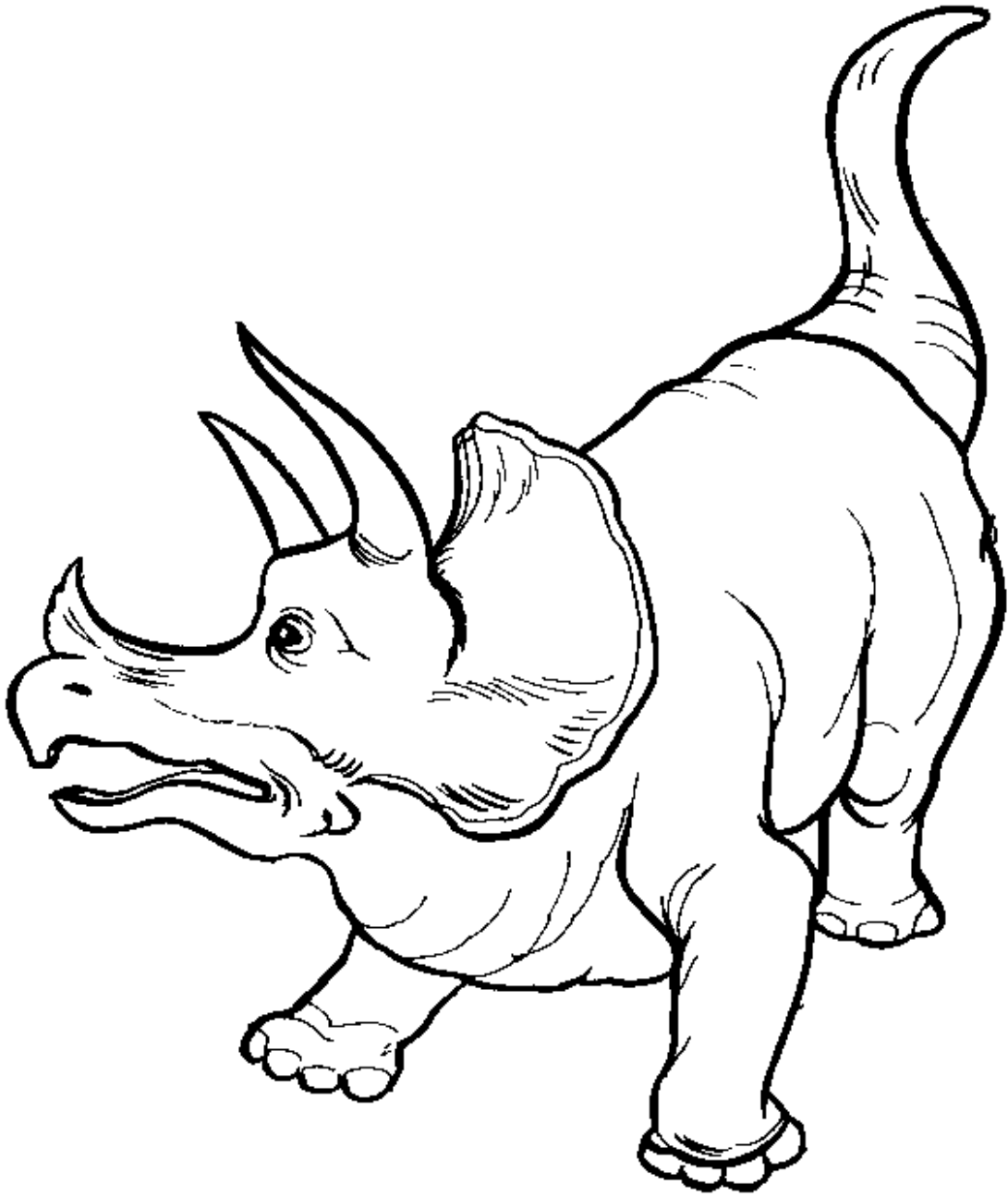
Graphic Source: jurassicdinosaurs.co.uk



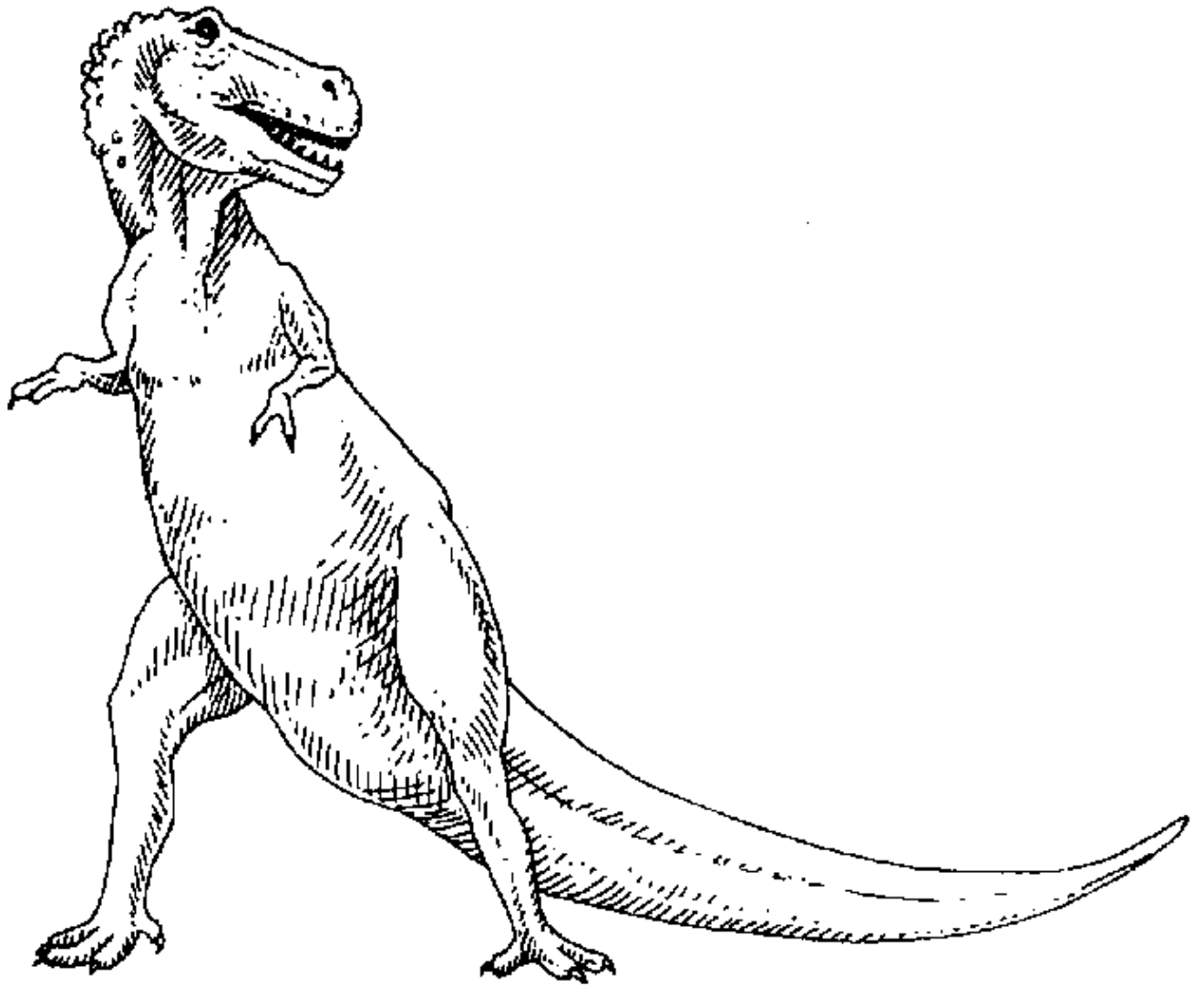
Graphic Source: Easy Vectors



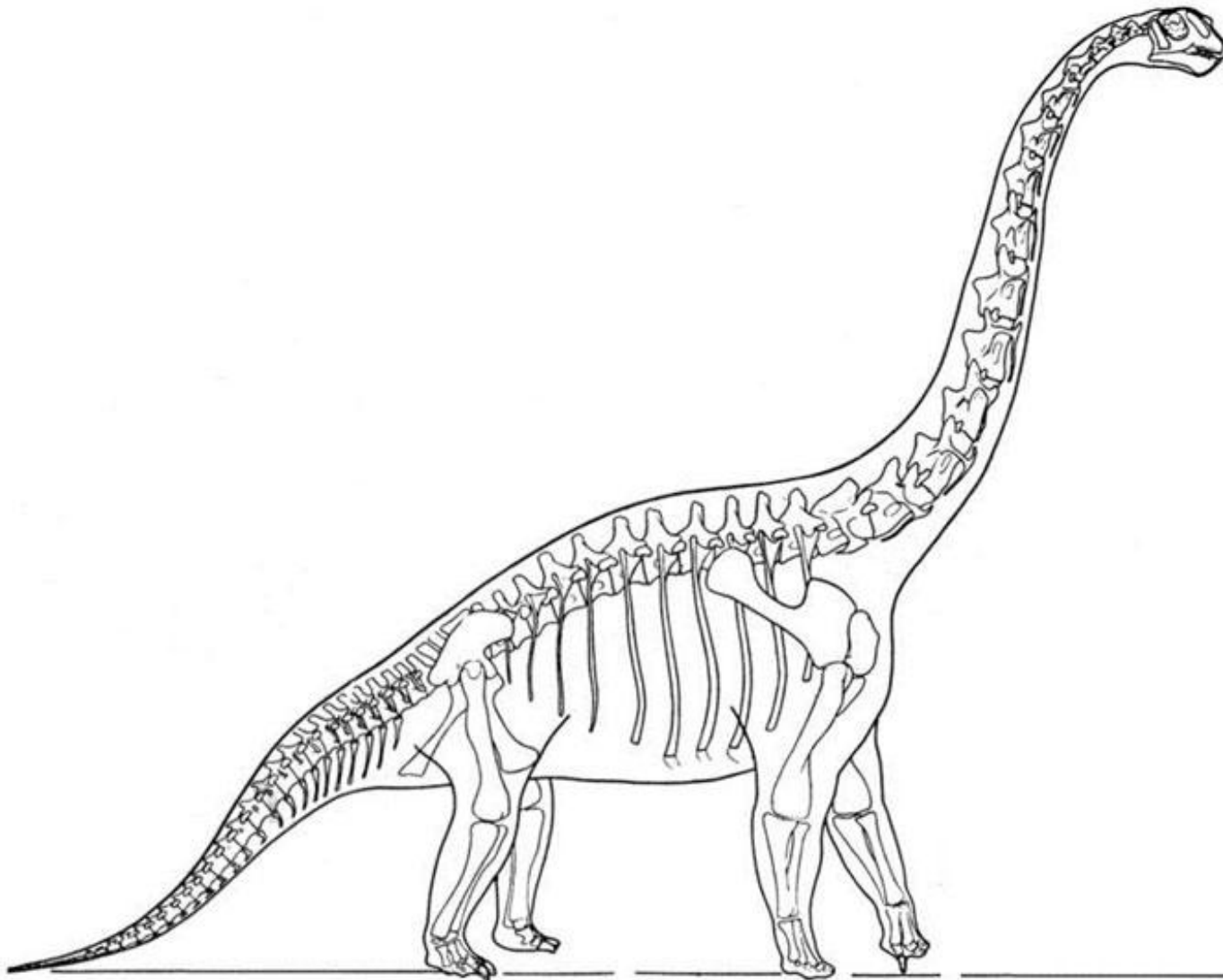
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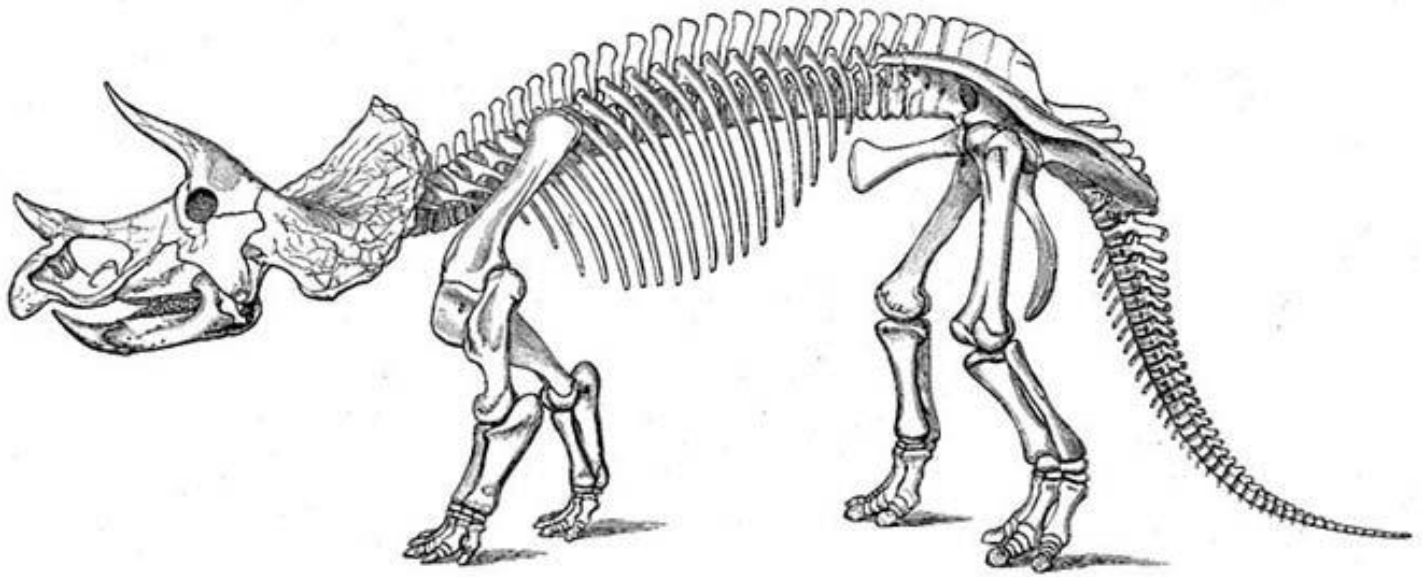


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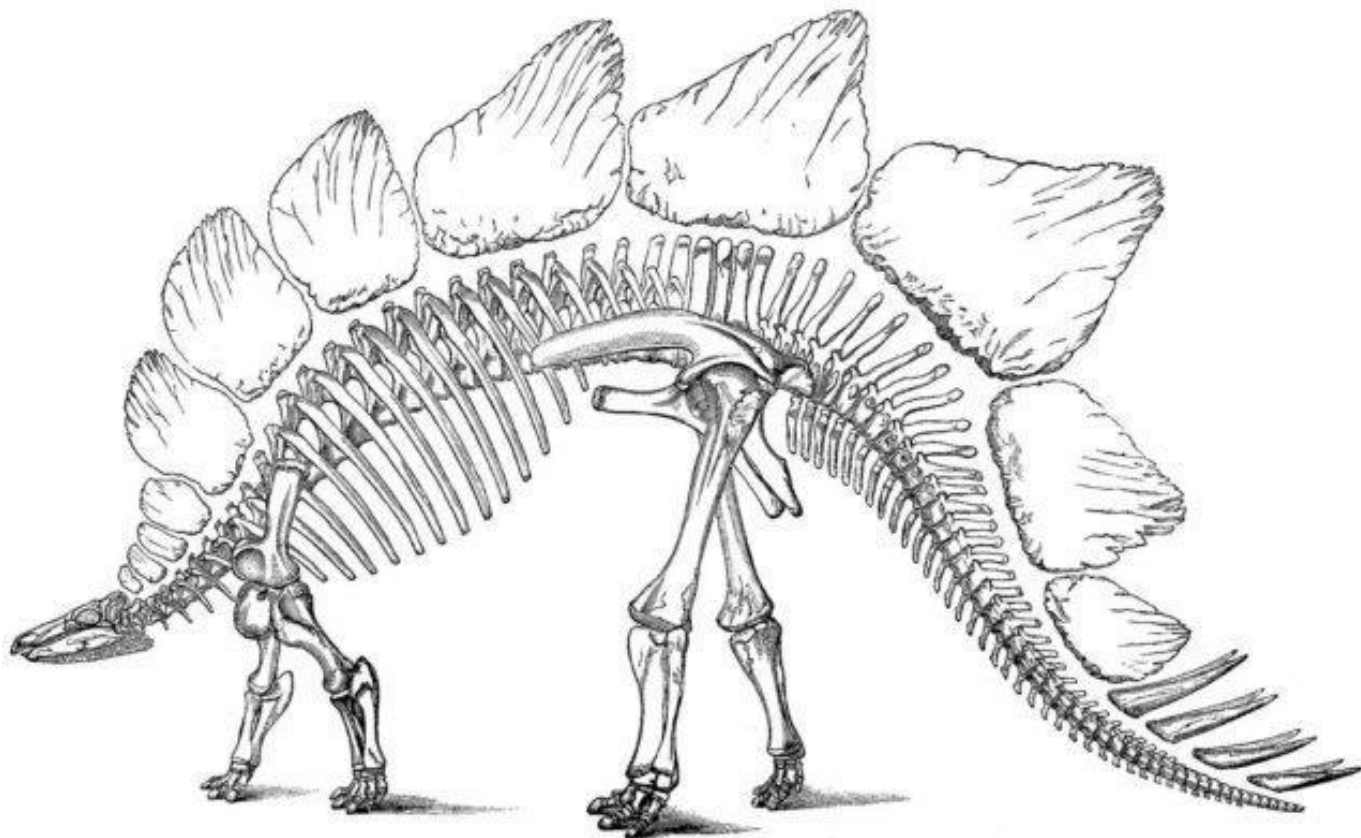
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Brachiosaurus Skeleton



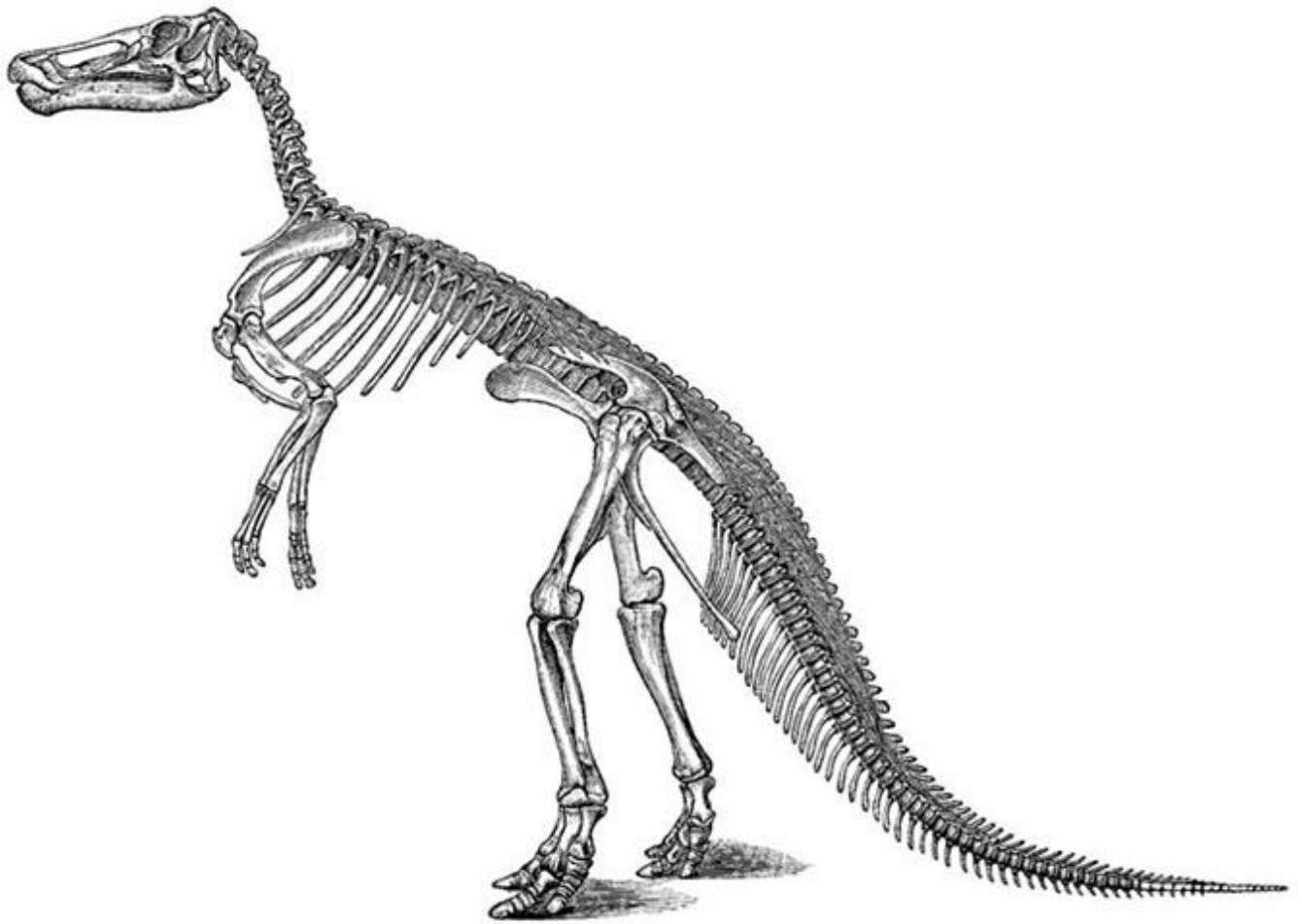
Graphics Source: Science Kids

Triceratops



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Stegosaurus



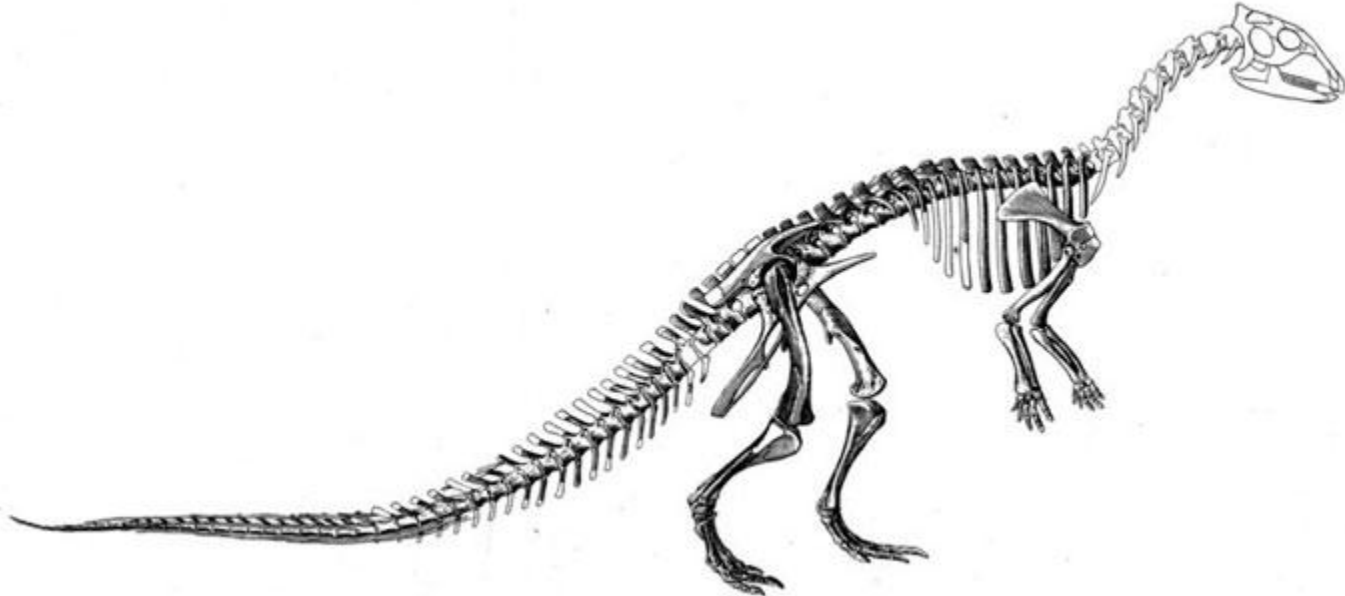
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Edmontosaurus



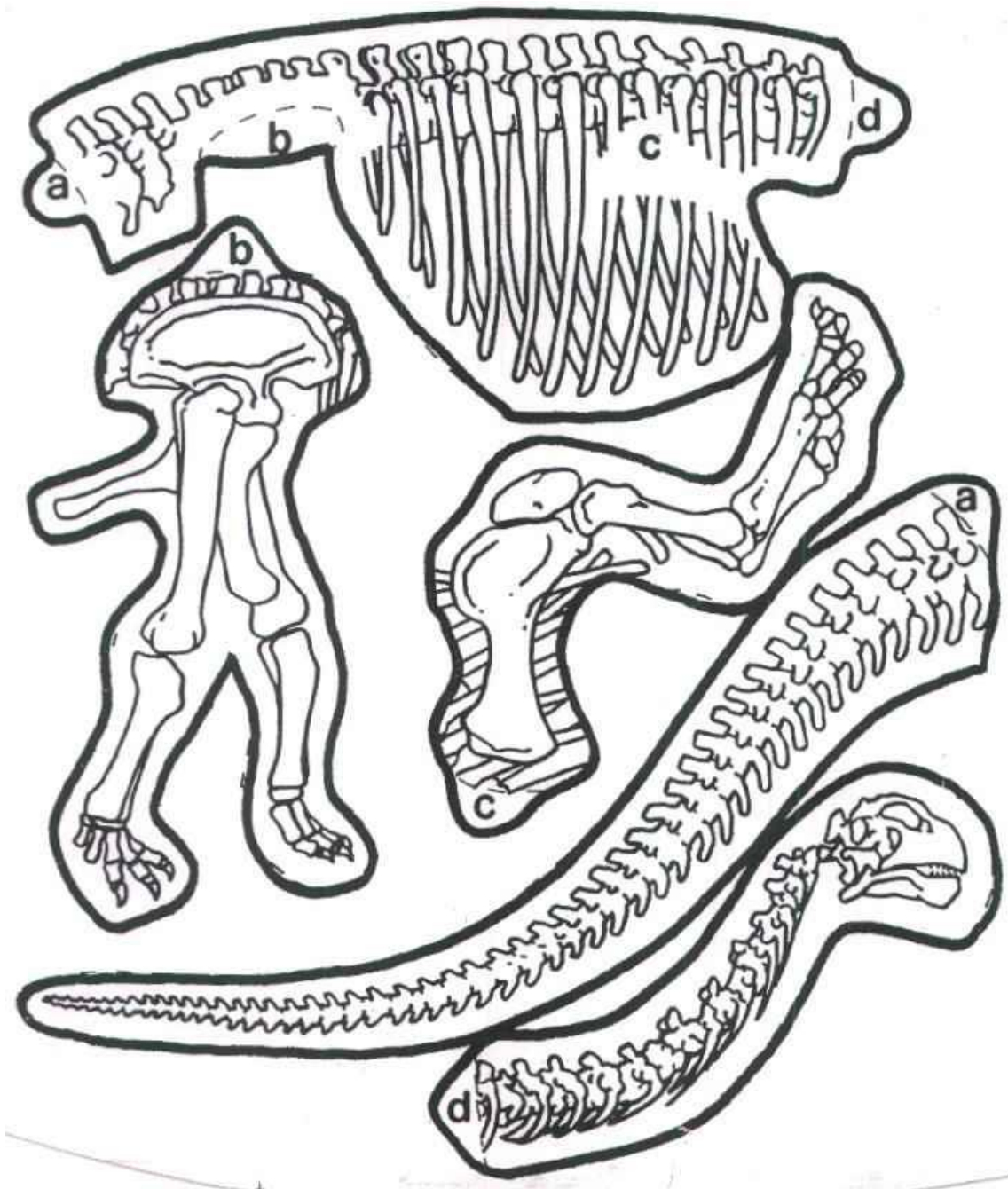
Graphic Source: Britannica

Tyrannosaurus Rex



Graphics Source: Science Kids

Thescelosaurus



Graphic Source: Prekinders.com