

Amaze Your Brain *at Home!*

ANSWER KEY

BEST FOR
Grades
K-3

MEASURE YOUR DINOSAUR

INSTRUCTIONS

1. Download or print out this activity guide
2. Pick a nice day to go outside
3. With an adult, measure the foot lengths of the dinosaurs from the guide
4. Mark the lengths on the concrete with chalk

Warning: Activity should be done with an adult on the sidewalk away from possible oncoming traffic.

MATERIALS

- Measuring tape
- Chalk
- A nice day

Watch this experiment on our YouTube channel: https://youtu.be/tPTf_miFFvI

FORMULAS

Hip Height = Footprint Length x 4

Dinosaur Length = Footprint Length x 10

WHAT'S HAPPENING?

Paleontology is the study of past life on Earth through fossils. A fossil is the remains of something that was once alive, such as plants and animals. Over time, most solid fossils like bones become rock-like when parts of bone are replaced by something else. Imagine filling a sponge with glue.

Another type of fossil that paleontologists may study are trace fossils. A trace fossil is an impression pressed in mud where, over time, will turn into a rock. Footprints are an example of a trace fossil. By studying trace fossils, paleontologists can figure out patterns of an animal's activities when they were still alive.

When a dinosaur leaves behind footprints, paleontologists have been able to figure out how big these creatures are given the size of their feet. They have also been able to figure out how fast these creatures may be walking, running, or trotting if there are a series of prints of the same feet in a row or tracks.

ADDITIONAL INVESTIGATIONS

1. Compare and contrast the sizes of these dinosaurs
2. Using the silhouettes, try drawing the skeletons that will fit inside the body

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DINOSAUR FACTS

NANUQSAURUS HOGLUNDI (na-nook-SAW-rus)

Average Foot Size: 40 cm (16 in)

Fun Fact: The name literally means polar bear reptile as it comes from the remote and cold lands of Northern Alaska.



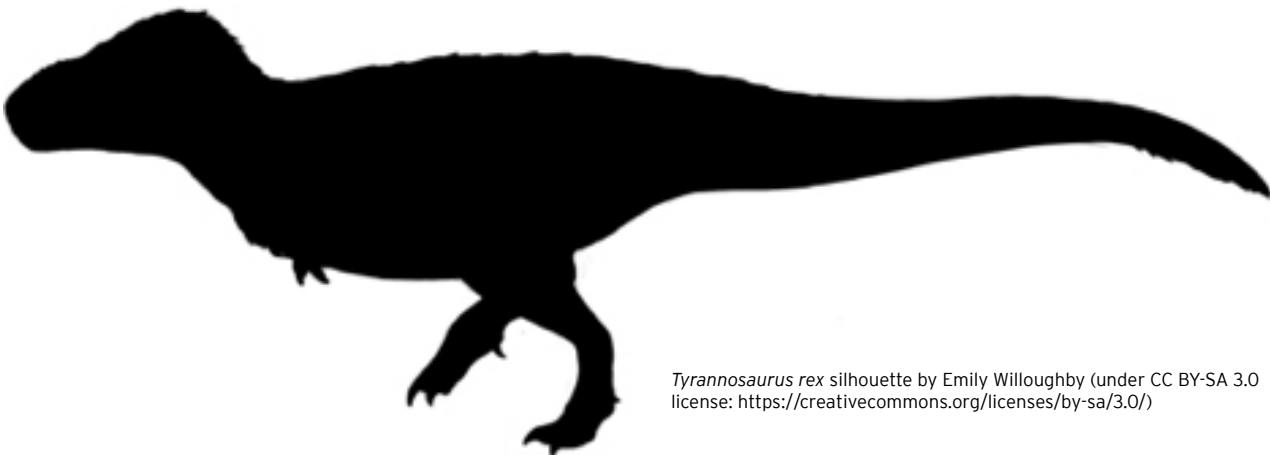
Nanuqsaurus hoglundi silhouette by Jaime Headden (CC BY 3.0: <https://creativecommons.org/licenses/by/3.0/> CC BY 3.0)

1. **About how tall is *Nanuqsaurus hoglundi*?** (Use the formula for Hip Height) 160 cm or 64 in
2. **About how long is *Nanuqsaurus hoglundi*?** (Use the formula for Body Length) 400 cm or 160 in

TYRANNOSAURUS REX (tie-RAN-oh-SAW-rus)

Average Foot Size: 80 cm (31 in)

Fun Fact: Unlike most other carnivorous dinosaurs, *Tyrannosaurus rex* bigger teeth look more like bananas!



Tyrannosaurus rex silhouette by Emily Willoughby (under CC BY-SA 3.0 license: <https://creativecommons.org/licenses/by-sa/3.0/>)

1. **About how tall is *Tyrannosaurus rex*?** (Use the formula for Hip Height) 320 cm or 124 in
2. **About how long is *Tyrannosaurus rex*?** (Use the formula for Body Length) 800 cm or 310 in

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DEINONYCHUS ANTIRRHOPUS (dye-NONN-ee-kus)

Average Foot Size: 15 cm (6 in)

Fun Fact: The movie *Jurassic Park* based their "Velociraptor" on this North American dinosaur instead of the actual smaller *Velociraptor* from Asia.



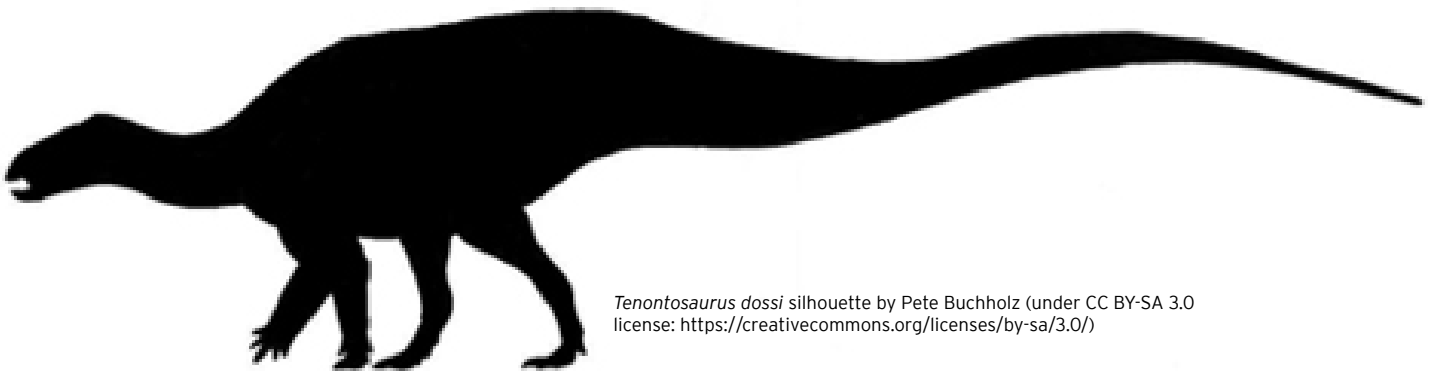
Deinonychus antirrhopus silhouette by Emily Willoughby (under CC BY-SA 3.0 license: <https://creativecommons.org/licenses/by-sa/3.0/>)

1. **About how tall is *Deinonychus antirrhopus*?** (Use the formula for Hip Height) 60 cm or 24 in
2. **About how long is *Deinonychus antirrhopus*?** (Use the formula for Body Length) 150 cm or 60 in

TENONTOSAURUS DOSSI (ti-NON-toh-SAW-rus)

Average Foot Size: 23 cm (9 in)

Fun Fact: One famous *Tenontosaurus* skeleton was found surrounded by many remains of *Deinonychus*, suggesting that raptors may have hunted in packs.



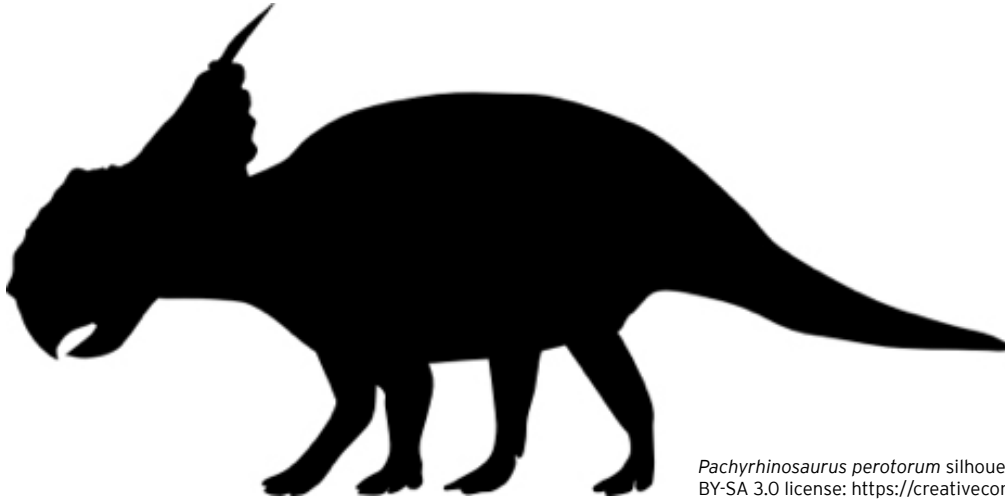
Tenontosaurus dossi silhouette by Pete Buchholz (under CC BY-SA 3.0 license: <https://creativecommons.org/licenses/by-sa/3.0/>)

1. **About how tall is *Tenontosaurus dossi*?** (Use the formula for Hip Height) 92 cm or 36 in
2. **About how long is *Tenontosaurus dossi*?** (Use the formula for Body Length) 230 cm or 90 in

PACHYRHINOSAURUS PEROTORUM (pak-ee-RI-no-SAW-rus)

Average Foot Size: 30 cm (12 in)

Fun Fact: The last of the horned dinosaurs as characterized by a small circular frill and no brow horns unlike the *Triceratops*.



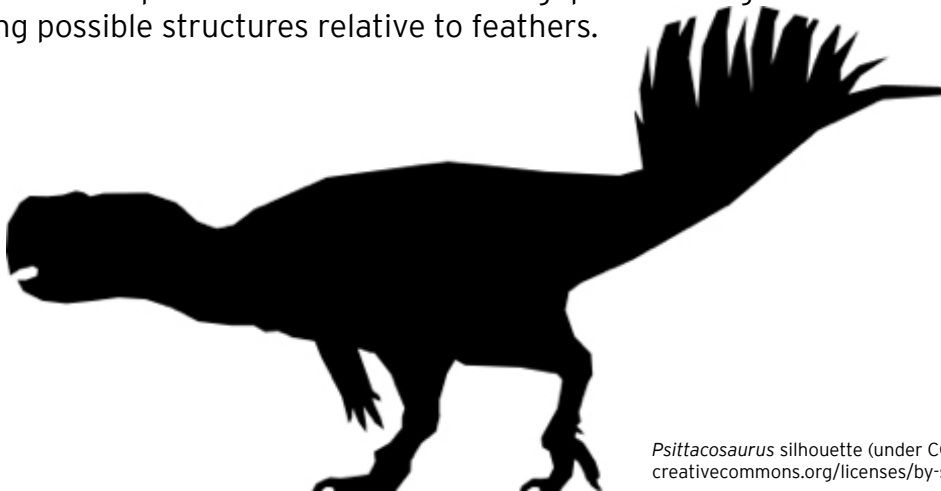
Pachyrhinosaurus perotorum silhouette by Andrew A. Farke (under CC BY-SA 3.0 license: <https://creativecommons.org/licenses/by-sa/3.0/>)

1. **About how tall is *Pachyrhinosaurus perotorum*?** (Use the formula for Hip Height) 120 cm or 48 in
2. **About how long is *Pachyrhinosaurus perotorum*?** (Use the formula for Body Length) 300 cm or 120 in

PSITTACOSAURUS (SIT-uh-ko-SAW-rus)

Average Foot Size: 13 cm (5 in)

Fun Fact: Some species have evidence of long quills sticking out from the top of the tail, indicating possible structures relative to feathers.



Psittacosaurus silhouette (under CC BY-SA 3.0 license: <https://creativecommons.org/licenses/by-sa/3.0/>)

1. **About how tall is *Psittacosaurus*?** (Use the formula for Hip Height) 52 cm or 20 in
2. **About how long is *Psittacosaurus*?** (Use the formula for Body Length) 130 cm or 50 in