ROAMING WITH DINOSAURS

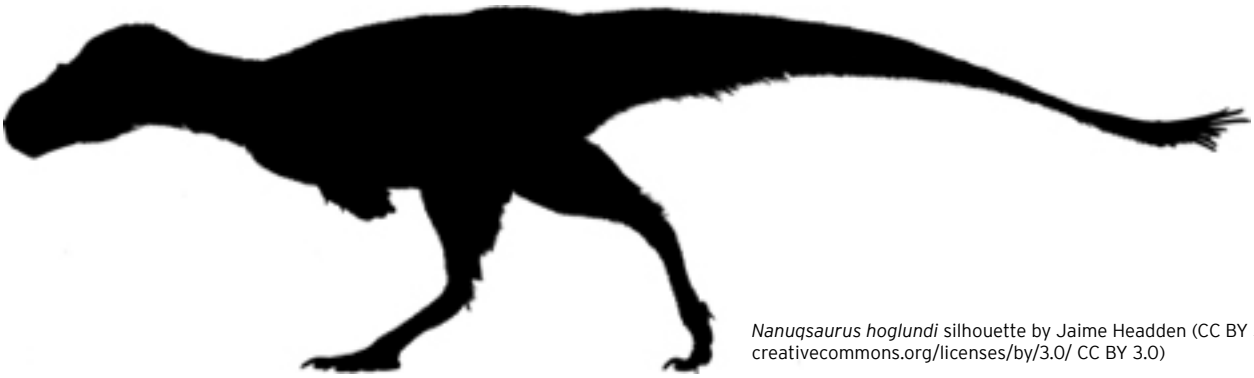
Were they walking, jogging, or running?

Paleontology is the study of past life on Earth through fossils. Today, you will get the chance to study some dinosaur footprints, just like a paleontologist! The guide below gives you some information about the dinosaurs.

NANUQSAURUS HOGLUNDI (na-nook-SAW-rus)

Average Foot Size: 40 cm

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

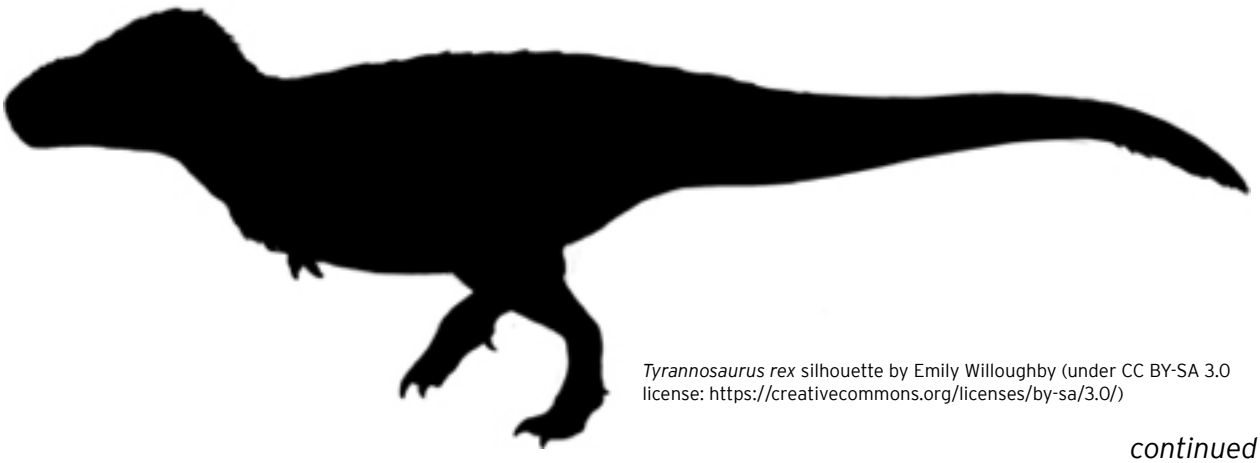


Nanuqsaurus hoglundi silhouette by Jaime Headden (CC BY 3.0: https://creativecommons.org/licenses/by/3.0/ CC BY 3.0)

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

Average Foot Size: 80 cm

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/)

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DEINONYCHUS ANTIRRHOPUS (dye-NONN-ee-kus)

Average Foot Size: 15 cm

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/)

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

Average Foot Size: 23 cm

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/)

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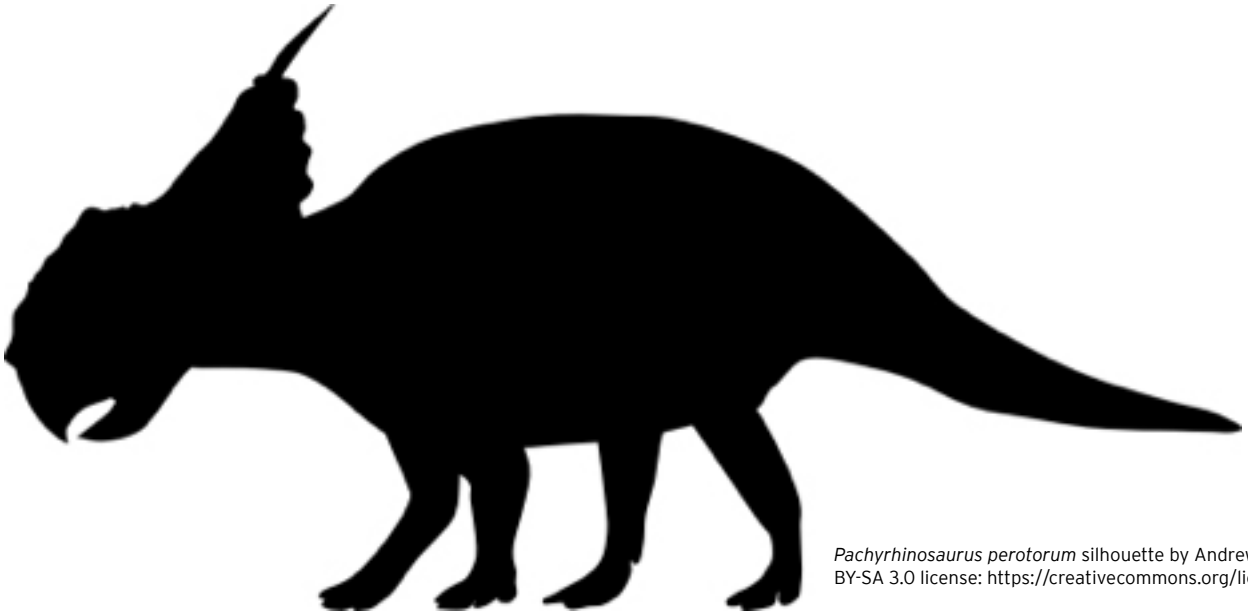
PACHYRHINOSAURUS PEROTORUM (pak-ee-RI-no-SAW-rus)

Average Foot Size: 30 cm

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/)

Now that we know about the dinosaurs, let's talk about fossils. Fossils are the remains of something that was once alive, like dinosaurs! What do you think a dinosaur can leave behind for a paleontologist to study? Bones, of course, but that isn't all! Sometimes, a dinosaur can leave behind trace fossils. Trace fossils may include skin impressions, foot prints, or more! Today we are looking at dinosaur footprints to see if we can determine if the dinosaur in question was walking, jogging, or running!

To do this, a paleontologist will measure the length of the dinosaur footprint. Notice, the units are in centimeters, this is the Metric system, or International System of Units that all scientists use to communicate data. Paleontologists then use some helpful equations (in the table below) for determining the height of a dinosaur at the hips, and body length of a dinosaur.

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Amaze Your Brain *at Home!*

EXPERIMENTS

BEST FOR Grades 4-6

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If multiple footprints are available, a paleontologist can measure stride length—length between two footprints. Comparing the stride length and hip height, a ratio can be developed. This ratio tells you if a dinosaur was walking (less than 1.0), jogging (between 1.1-1.9), or running (2.0 or greater).

Dino Name	Foot Print Length FP	Hip Height FP x 4	Body Length FP x 10	Stride Length	Ratio Stride/Hip Height	Walking < 1.0, Jogging 1.0-1.9, or Running ≥2
Nanuqsaurus hoglundi	40 cm			128 cm		
Tyrannosaurus rex	80 cm			768 cm		
Deinonychus antirrhopus	15 cm			84 cm		
Tenontosaurus dossi	23 cm			184 cm		
Pachyrhinosaurus perotorum	30 cm			60 cm		