

Dino Foot-Race

Just like modern animals, some dinosaurs were faster than others. How do paleontologists know how fast these dinosaurs were? We can look at a series of footprints and use a mathematical calculation to figure out the speed the dinosaur was moving when it made the footprint. Another way paleontologists can measure the speed at which a dinosaur could move, is called the **Hind Limb Index**. This is calculated by taking measurements of the hind limb bones of the dinosaur.

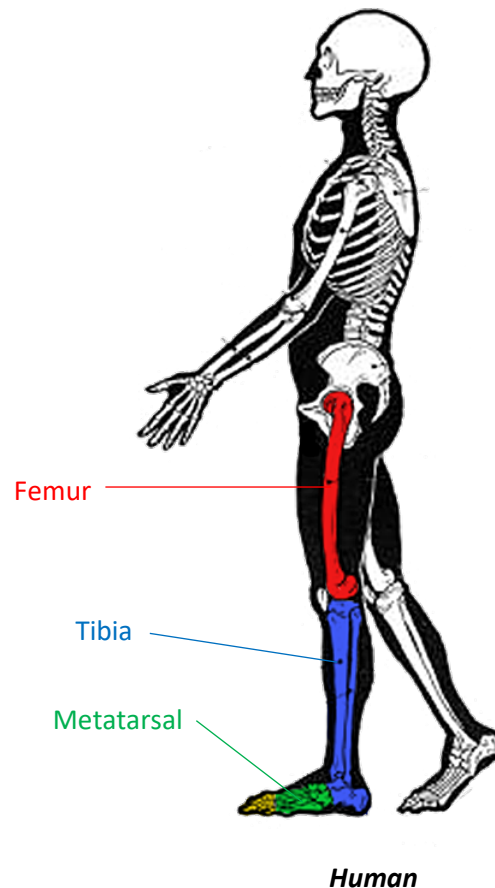
To calculate the Hind Limb Index, you measure the length of the tibia (shinbone) add it to the length of the metatarsal and then divide that number by the length of the femur (thigh bone). The Hind Limb Index is usually in between 1 and 2. The higher the number, the faster the animal can run. (Hint: The tibia is the larger of the two bones in the lower leg)

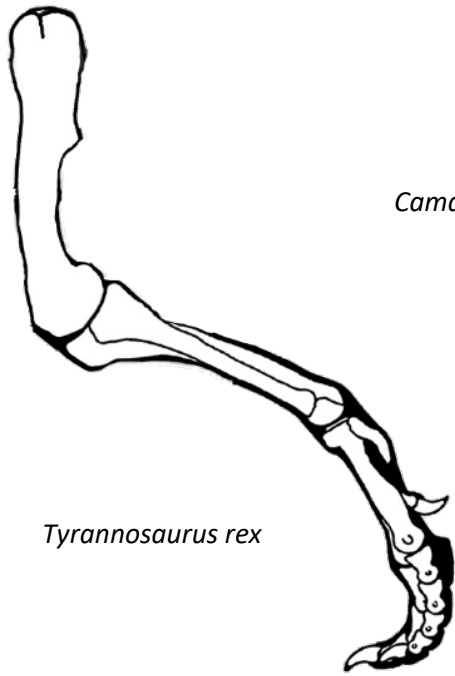
Example: Human

$$\frac{\text{Tibia} + \text{Metatarsal}}{\text{Femur}} = \text{Hind Limb index}$$

$$\frac{2.2\text{cm} + 0.7\text{cm}}{2.2\text{cm}} =$$
$$\frac{2.9\text{cm}}{2.2\text{cm}} =$$

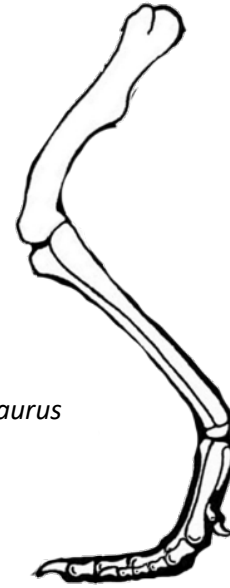
Human Hind Limb index: 1.31cm





Tyrannosaurus rex

Camarasaurus



Allosaurus



Apatosaurus

Hind Limb Index = _____

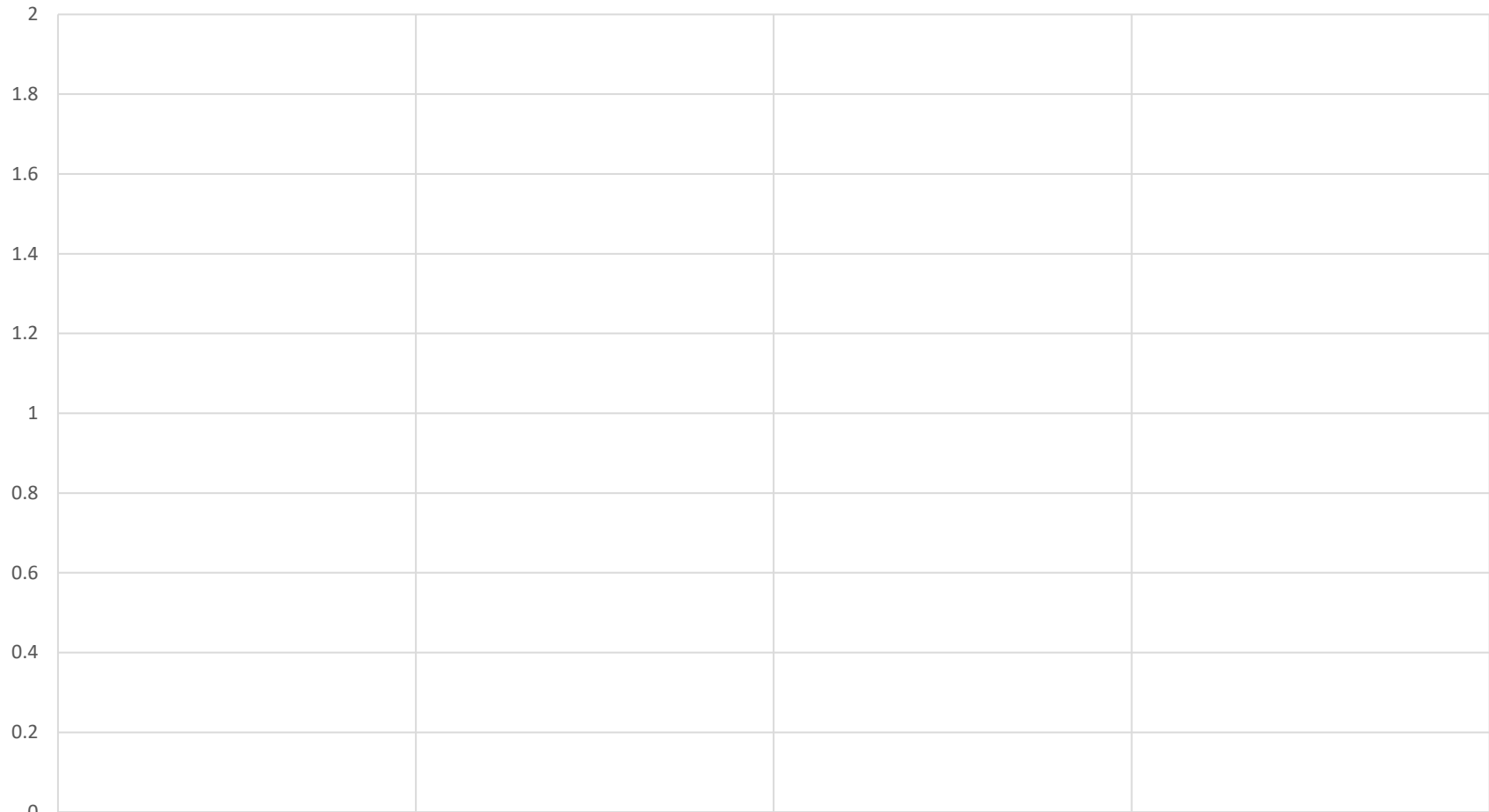
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