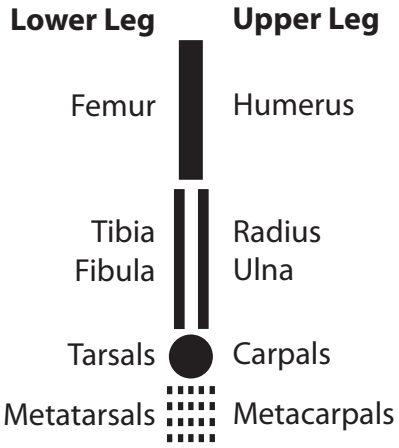
HOW FAST DO I RUN?

Use the information below to work out which of these four animalsis the fastest runner. You will need a measuring tape and a calculator.

How can you work out the speed of an animal just by looking at their skeleton?

Animals that are **fast runners** usually have very muscular upper legs. They also have very **long limbs** because this makes their **stride** longer. The longer the stride, the fewer strides are needed to cross a given area so the animal is faster. Often fast runners will have **elongated lower leg bones** to make their stride even longer.

We can work out which animal is fastest by looking at the ratio of the upper leg bones to the lower leg bones. In the front limbs, the upper leg bone is called the **humerus**, and the lower leg bones are the **radius, ulna, carpals** (wrist bones) and **metacarpals** (finger bones). In the hind limbs the upper leg bone is called the **femur** and the lower leg bones are the **tibia, fibula, tarsals** (ankle bones) and **meta-tarsals** (toe bones).



To work out the ratio we need:

Length of Humerus / Length Radius + Ulna + Carpels + Metacarpels

OR

Length of Femur/ Length of Tibia + Fibula + Tarsals + Metatarsals

The fastest animal will have the lowest value of the ratio, i.e., it will have the longest lower limb bones relative to its upper limb bones.