

Animal Shapes, Sizes and Weights

How small can an animal be? Why don't big animals collapse? Students will discover the answers to these questions and many others as they use a variety of math activities to explore animal shapes, sizes and weights.

Animals are generally shaped for survival. The two most important factors that determine an animal's shape are the food it eats and the place it lives. Tall bulky horses have a body shape similar to "barrels on legs". This shape is perfect for digesting the large amounts of grass that they must eat, but horses would have a hard time chasing small quick prairie dogs. On the other hand, a sleek red-tailed hawk is ideally suited to catch small rodents like the prairie dog.

Size is a subject of interest to most students. They often compare their size to the world around them. They are bigger than their sister or smaller than dad. Students also tend to think of animals as large or small in comparison to themselves. They may consider rabbits as small and horses as large. In fact rabbits would be quite large if they were compared to an ant! Animal sizes vary even among similar animals. For example, we may think that a 12-foot dolphin is small compared to its cousin, a 100-foot long blue whale. Size is relative and can be directly related to our perception of what is "big" and what is "small".

The weight of an animal in general is directly related to its size. Bigger animals weigh more. Their bones must be bigger to hold up the greater weight and their muscles are larger in order to move their weight around. Gravity also limits the weight of animals. Animals that live in water can be heavier than animals that live on land because the water helps to hold up their weight. Many animals that fly are lighter than they appear because they have hollow bones.

Animal size, weight and shape also affect life expectancy. Smaller animals tend to lead short busy lives and have more offspring while larger animals live longer and have fewer young. Students will read, observe and learn more about animal shapes, sizes and weights through solving a variety of math problems. They will be able to discover for themselves some amazing new insights about the animal community.