Handy Hands

Estimated Time: 30-40 minutes

SUMMARY
People have hands. These amazing structures with five digits allow us to open jars, scratch our noses, and create amazing art. There aren't many other mammals who are able to do all these things. But unlike other mammals, we aren't able to walk on all four of our limbs for a long period of time, we aren't very good at digging with our hands, and we can't use portions of our hands to help us fly or glide. In this activity, you will explore variation in the many types of hands mammals have!

WHAT YOU'LL LEARN

- The uniqueness of human hands compared to other mammals.
- Other forms of hands found in the mammalian class.

Materials Used	**Resources Used**
● Journal ● Pencil	● Clinical Anatomy – Human Hand https://www.youtube.com/watch?v=3aIHxXqKzcU

WHAT TO DO

1) Let's explore the variation of hands in the Mammalian class! First, look at Figure 1, the image of the human hand. In your journal record what you notice. How many fingers do humans have? How are the fingers distributed on the hand? What do the palms look like? Note what people use their hands for.

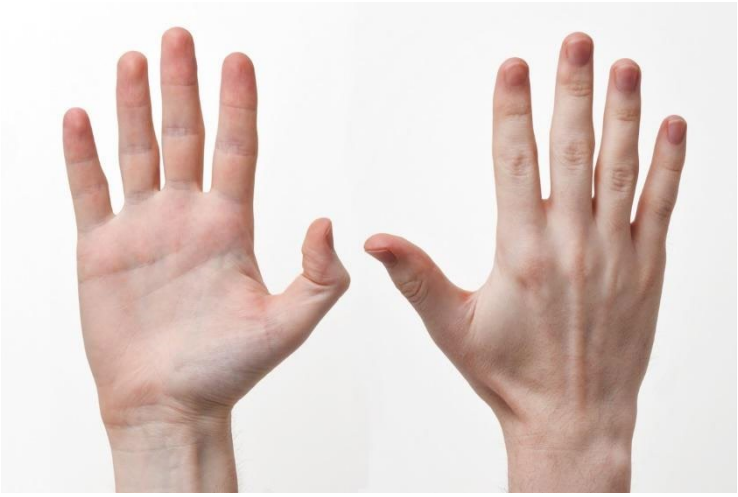

Figure 1. Image of human hands.

2) Now, let's look at another mammal's hands. Figure 2 is the front paw of a cat. In your journal record what you notice about the cat's paw. How many fingers do cats have? Is this similar to the hands of humans? How are cat fingers distributed on the hand? What

do the palms look like? How is the cat's hand different from the human hand? What do cats use their hands for?

Figure 2. Image of cat front paw.

3) Now that we've looked at two different mammals that each have five fingers, let's look at one with less! Figure 3 includes the front hands of a cow! How many fingers do you see? How are those fingers distributed on the hand? How do cows use their hands? How does this differ from humans and cats?

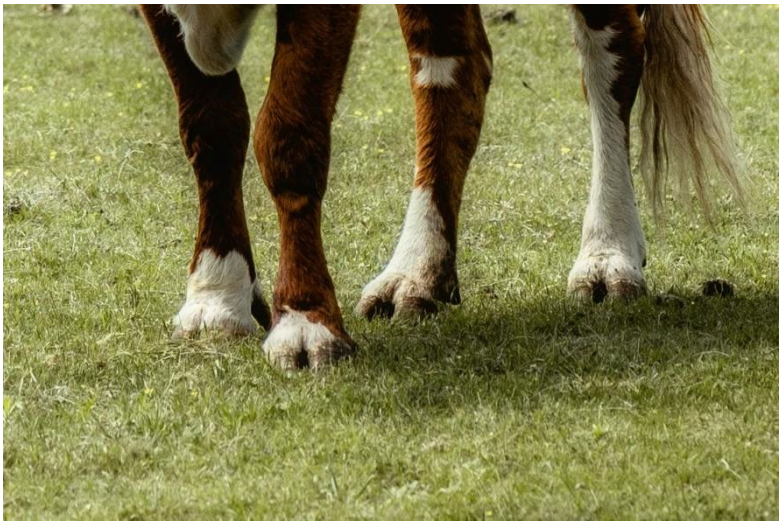

Figure 3. Image of cow hands and back feet.

4) Let's look at another amazing mammal hand: the hands of a mole. Look at Figure 4 and notice the mole's hands. How many fingers do moles have? How do they differ from the hands of humans, cats, and cows? How are the fingers distributed on the hand? What

do moles do with their hands and how does this differ from what humans, cats, and cows do with their hands?

Figure 4. Image of mole hands.

5) What you have been doing is comparative anatomy! Scientists who study living and extinct animals use comparative anatomy to understand how animals behave. We can do this because the form of the structure, how the hand is shaped, follows the function, or how the animal uses that structure.

TIPS

- We only looked at the hands of four mammals here. Explore the hands of other animals like dolphins, manatees, horses, and bats. These animals have unique modifications in their hands to accommodate variation in movements and how these animals use their environments.
- Now that you have looked at mammals, it can be fun to look at how mammal hands compare to the wings of birds, or the hands of frogs and other amphibians.

IMAGES USED

- Human hand by Evan-Amos - Own work, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=18948673
- Cat paw image by Michelle Calderon on Unsplash
- Cow legs image by Jake Fagan on Unsplash
- Moles image by Kenneth Catania, Vanderbilt University