



Hand It to the Animals

Identifying X-rays from the zoo

Name(s) _____ Date _____

Instructor/Class _____

Please answer the following questions.

1. How many images are in the stack?
2. What do all the “hands” have in common?
 - Feathers
 - Bones
 - “Fingers”
3. In what specific ways do these hands vary? (Check all that apply.)
 - Number of “fingers”
 - Thickness of bones
 - Shape of hand
 - Shape and length of “fingers”
4. Of the 11 images, which shows a bird’s hand that is used for flying? (Hint: Bird bones are difficult to capture on X-rays. They are very light—in fact, they’re hollow.)
 - Number 2
 - Number 5
 - Number 7
 - Number 9
5. Go to the fifth image. Which function do you think this hand serves?
 - Flying
 - Grasping
 - Swimming
 - Bearing weight
6. How has the form of the sea lion’s hand evolved to perform its function? (Hint: There may be more than one right answer.)
 - The hand’s claws help the animal swing from tree to tree.
 - It’s broad and flat, which makes it a more effective paddle.
 - The fingers are slender and flexible, which makes the flipper more maneuverable.
 - The wrist bones are thick, which helps the animal move on land.
7. Of all the animal “hands” you’ve looked at, which one does this column remind you of?

○ Number 2

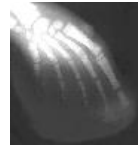
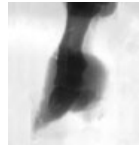
○ Number 8

8. All these animals rely on their “hands” to perform various functions. Look at the morphology (form and structure) of each hand, and write the name of its correct owner underneath.





9. Look at the animal hands below, and match them to their most likely lifestyle. (Hint: There’s one extra hand.)



- a) The Torpid Wurmivore is a jungle dweller that spends most of its time hanging upside-down from vines. When these animals get hungry (which is rare since they don’t do much), they climb down to shred rotten tree trunks in search of earthworms.
- b) Long-haired Schmoozalots are particularly furry and very social animals who spend most of their waking hours on personal grooming. Because their hair is three feet long, they sit in groups braiding one another’s hair.
- c) The Azure-eyed Leggafoamopolus is mostly found in shallow estuaries where it spends its days napping as it floats around in abandoned styrofoam coolers. At night this animal moves out to the open seas where it pursues and gobbles large numbers of fast-moving squid.
- d) The Silk-tailed Endurawuss is on everyone’s menu, so they live in herds where each animal hopes that their neighbor will be lunch instead of them. They spend most of their lives running across the rolling

grasslands, often for hours at a time, fleeing from predators and pausing only to graze briefly.

10. Superficially, the wings of a screech owl and a Boeing 777 jet are similar. After all, they're both used for flight. But owls maneuver silently through tightly spaced tree trunks while jets cover many thousands of miles. What structural aspects do you see in these two wings that might explain their different functions? Check all that apply.

- The owl's coloration helps it remain undetected.
- The shape of the owl's wing is short and broad.
- Both owl and jet wings are wide where they attach to the body.
- A jet wing is narrow and elongated.