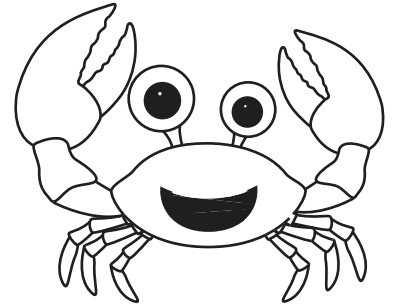






Animals with skeletons similar to ours are called VERTEBRATES. Animals without skeletons are called INVERTEBRATES.

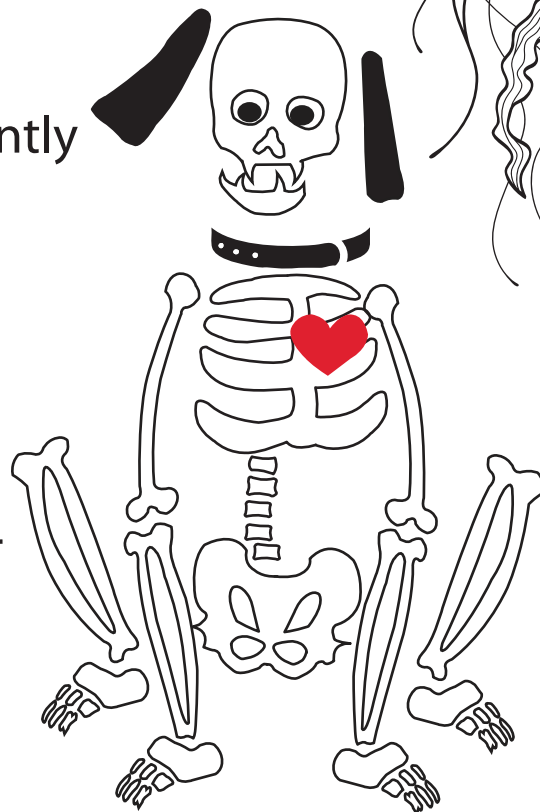
An insect (like a bee or butterfly) has its skeleton on the OUTSIDE of its body. This kind of skeleton is called an EXOSKELETON. A crab or lobster also has an exo-skeleton, but an octopus has no skeleton at all! Animals like worms, slugs and snails don't have any protection either, but a hermit crab will take the abandoned shells of other animals to protect the soft parts of their bodies.



Most animals that do have skeletons under their skin, have almost the exact same bones as we humans do. They may have a very differently shape, or have different kinds of teeth, but once you learn all of YOUR bones, you will know the bones of other animals too.



For instance, all vertebrates have arm bones like we do. The upper arm is called the HUMERUS, and the 2 bones in the lower arm are called the RADIUS and ULNA.



Objectives – By the end of this lesson, the children should be able to:

- Know that some animals have skeletons and some don't. Crabs and insects have an EXOSKELETON
- Differentiate "arm" from "forearm"
- Know that all animals with a skeleton have arm bones that are similar to ours
- Identify HUMERUS, RADIUS & ULNA bones

Materials

- Pages with arm bones HUMERUS, RADIUS & ULNA
- Scissors
- All natural white face paint
- Triangular makeup sponges or larger sized paint brush
- Cotton swabs like Q-tips

Lesson Prep

- Cut out RADIUS & ULNA, and HUMERUS
- Cue up "If Animals Danced"
- Cue up "Head, Shoulders, Knees and Toes"
- Cut Q-tips to various lengths for different bones

Greeting Routine (for more than 2 children) Free play until everyone arrives.

Mat Time

DANCE PARTY ANIMALS WITH SKELETONS. "Zoey, name an animal with a skeleton. Monkey! Yes! Everyone dance like MONKEYS!" Take turns picking an animal. "What about a butterfly? Does a butterfly have a skeleton?" Take a moment to explain that some animals have a skeleton on the outside. "So, if you see a bug, it has IT's skeleton on the OUTSIDE of its body. This kind of skeleton is called an EXOSKELETON. A crab or lobster also has an exoskeleton, but an octopus has no skeleton at all!" Suggest that animals like worms, slugs and snails don't have any protection either, but that some will take the shells of other animals to protect themselves, such as a hermit crab.

Reading Time

Read book 1, *Meet the Bones Family* and the "Arms Poem" from book 3 *The Bones Family Goes to Mexico*.

Activity in Motion

HEAD, SHOULDERS, KNEES AND TOES. Ask children where their heads are. Have fun with them helping you to find the body parts in the song. Make sure you are wrong sometimes so that children get the chance to help you. Have them follow you as you sing the song. After singing it traditionally a few times through with the action, replace original words with "ARM, FOREARM, HAND HAND HAND". Switch hands and point with the opposite hand. The "eye and ears and mouth..." parts stay the same.

Lesson

“Can everyone point to your UPPER ARM?” (Make sure they are all pointing to their upper arm) “Now point to your FOREARM or LOWER ARM. Great! So, the bone in your UPPER ARM is called the HUMERUS, and the bones in your FOREARM are called the RADIUS and ULNA. All animals with skeletons under their skin are called VERTEBRATES. All animals with skeletons like ours are called VERTEBRATES because they all have a back bone and ribs that come off that back bone. Is a snake a VERTEBRATE? Yes! Is an alligator a VERTEBRATE? Yes! (Show page with the alligator skeleton on it.) What things about this alligator skeleton are the same as in a human skeleton? Does it have a skull? Does it have legs? Does it have arms? Yes! Also, almost all vertebrates have a radius and ulna in their forearms. Can you see that? What does the alligator skeleton have that we humans DO NOT have?”

Chant ECHO GAME

Practice having the kids be your echo. Start with "hello," "how are you," etc. until you feel that they have a good grasp of how to play the game. Then say, "I'm going to say the name of a bone, and you all are going to be my echo! If I say it LOUD you say it LOUD. If I say it SOFT, you say it SOFT. Okay?" Point to the UPPER ARM and chant, "HUMERUS, HUMERUS!" Have them repeat it back to you. Experiment with a silly tone, a growly tone, etc. Say it in as many different ways as you can, then do the same thing with "RADIUS and ULNA, RADIUS and ULNA".

My Body Project

Have each child identify and paste the HUMERUS, RADIUS and ULNA bones onto their traced body.

Activity in Motion

Read the "Arms Poem" acting out the motions, then help the children to perform the actions with you.

Arms Poem

Arms aren't just things that hang to your sides.
(hold arms out from body and wiggle arms)

You can hold them close or open them wide.
(wrap your arms around your body then open them as wide as you can)

Arms are for lifting and pulling, you see.
Without them we sure couldn't climb a tree!
(pretend to pull a rope like in a tug of war game)

Arms can carry all manner of things,
(make a "muscle" with your biceps)

Or help us go high when we swing on a swing!
(sway arms high from side to side)

But the very best things that arms can do
Is to hug and to hold a friend that is new!
(hug the friend next to you)

Activity

Paint with make-up sponges or a thick paint brush on kids' arms the HUMERUS, RADIUS & ULNA. Make sure to differentiate the RADIUS and ULNA in the forearm.

Lesson Review

"Everyone show me your arm! Now show me your forearm! Good! Does anyone remember the names of the bone in the upper arm? HUUUUU.... " (most of the time they can come up with the rest of the word with a little prompt) "HUMERUS! Correct. How about the forearm? RADIUS & ULNA! Great. Can you name some animals that have a skeleton like ours? Okay, how about animals that DON'T have skeletons at all? What about animals with an EXOSKELETON? Does everyone remember what an EXOSKELETON is?"

Notes

Link to: "If Animals Danced" by Bounce Patrol:
<https://www.youtube.com/watch?v=30ePPeUbwSs>

Link to: "Head, Shoulders, Knees and Toes" by Super Simple Songs:
<https://www.youtube.com/watch?v=ZanHgPprl-0>

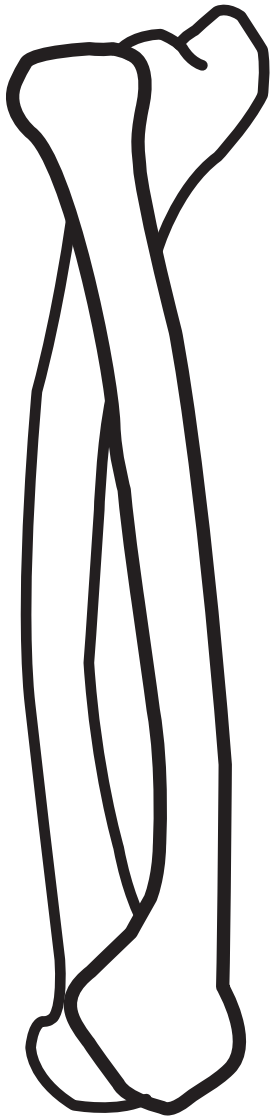
Right
Humerus



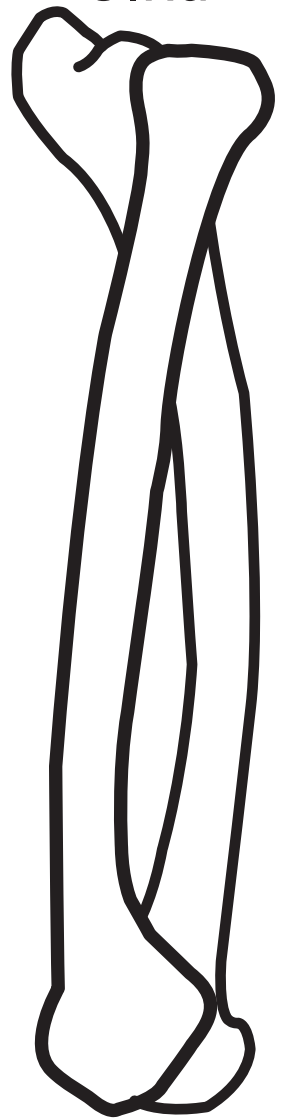
Left
Humerus



Right
Radius
&
Ulna



Left
Radius
&
Ulna



ANIMAL ARM BONES

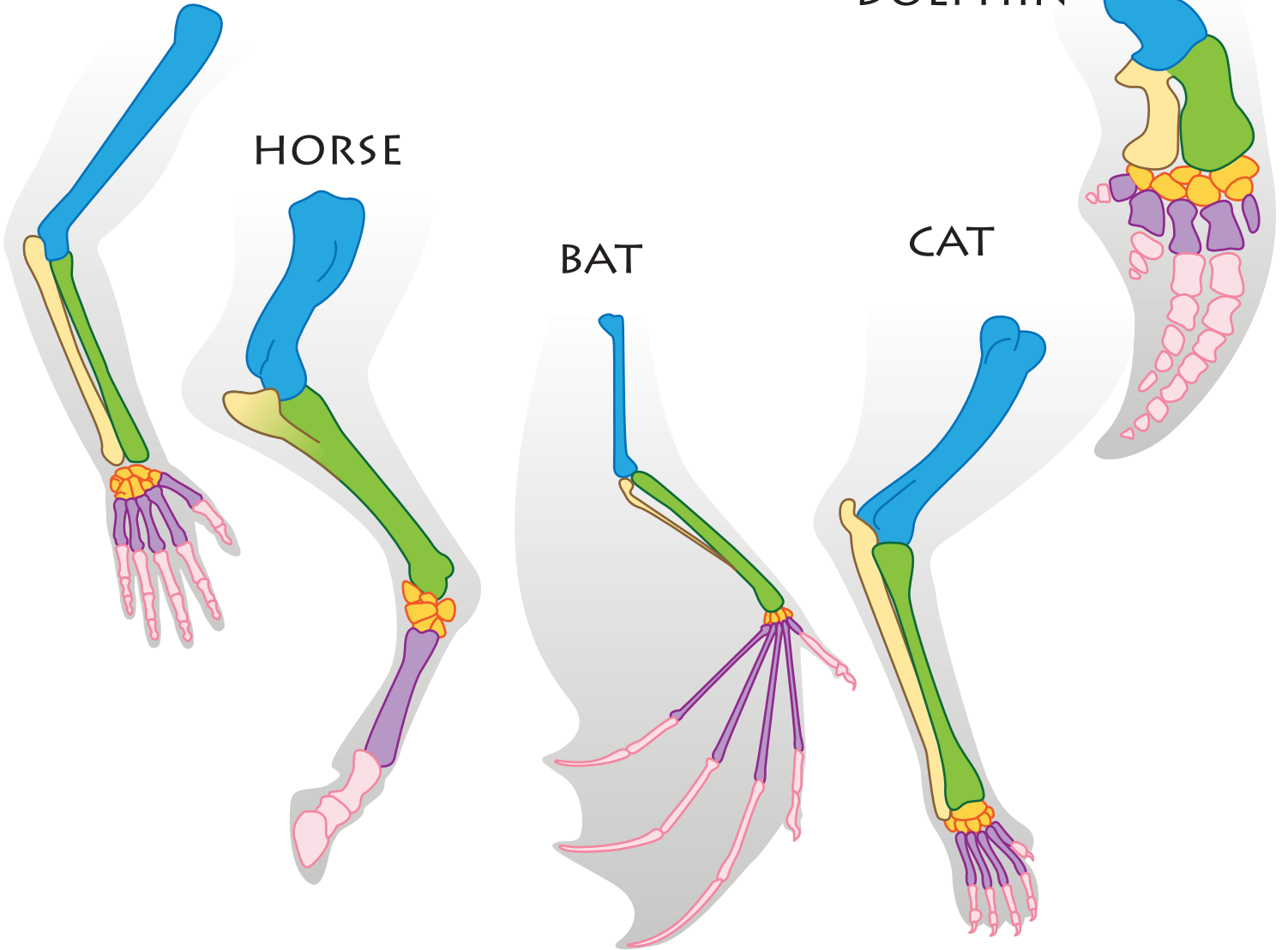
HUMAN

DOLPHIN

HORSE

BAT

CAT

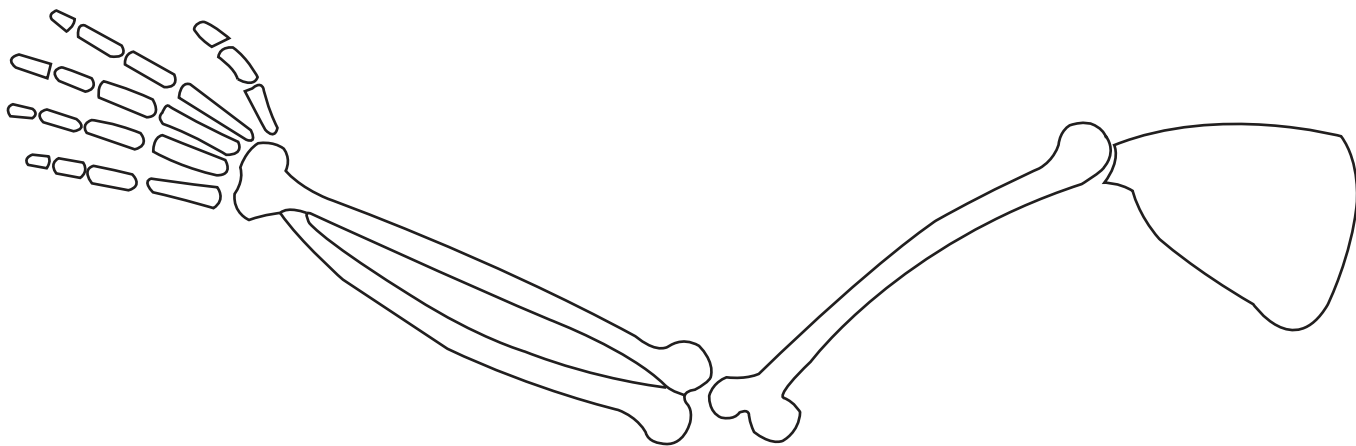
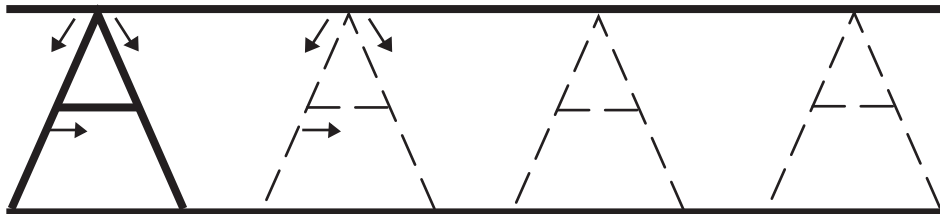
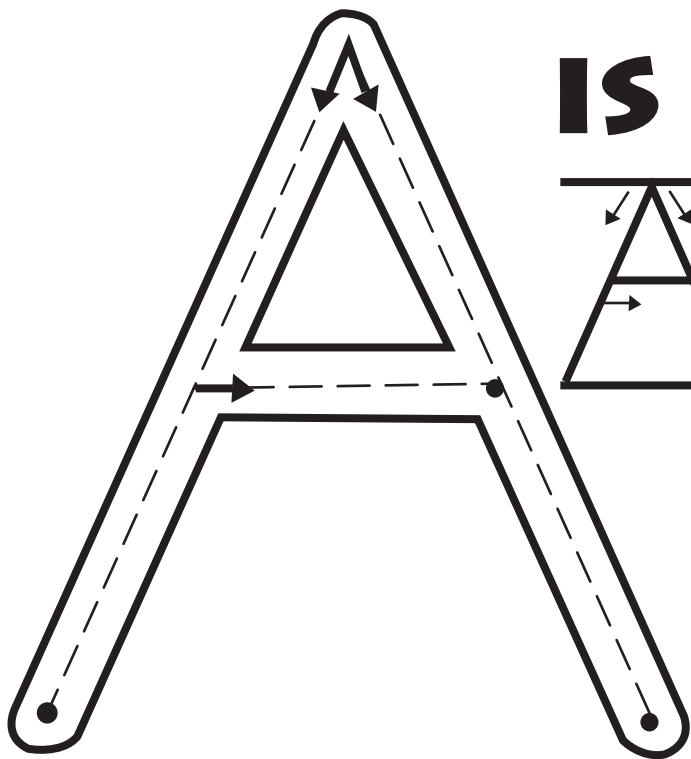


CIRCLE THE BLUE HUMERUS

WHAT ARE SOME SIMILARITIES BETWEEN THE HUMAN ARM AND THE OTHER ANIMAL ARMS?



IS FOR ARM



COLOR THE ARM BONES

COLOR THE HUMERUS BLUE

COLOR THE RADIUS YELLOW

COLOR THE ULNA RED





