

4th Grade Activity: Q-tip Snake Skeleton

Vertebrates are animals that have a spinal cord and bones. These internal structures help them survive.

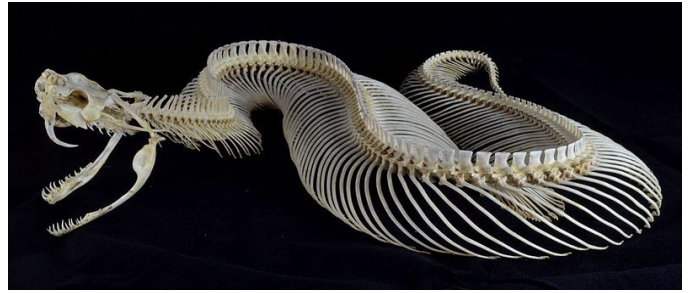
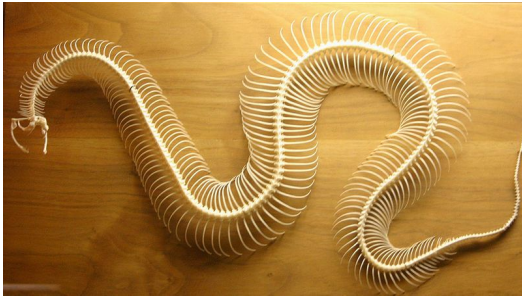
(NGSS Disciplinary Core Ideas 4-LS1.A: Structure and Function)

Pre-Activity Questions

- What is beneath our skin and muscles? Is it the same for all animals?
- Which animals have skeletons, and which do not?
 - Do snakes have skeletons?
- What is the purpose of a skeleton?

Activity

- Animals that have skeletons are part of a group called vertebrates. The group is named after vertebrae, which are bones in the spine. Some of the purposes of a skeleton include support, movement, and protection of important organs.
- Snakes may look like they don't have a skeleton, but they are vertebrates as well! They have a spine, just like us. However, their skeletons may look a bit different because they do not have any limbs. In fact, snakes have several unique traits to their skeleton!
 - Feel your lower jaw (or mandible, to use science terminology) from where it connects to your skull all the way down and across your chin. Unlike yours, a snake's jaw has an extra bone, the quadrate bone, which allows them to open their mouth extra wide. Their lower mandible is also split into two parts, to allow them to open their mouths sideways! Our lower mandible is one complete piece. Check out this [VIDEO](#) about pythons.
 - Feel the bone above your heart. This is a sternum, designed to connect your ribs together and protect your heart. Snakes do not have a sternum, which allows their body to expand as a large meal passes through their digestive system.
 - Snakes have many, many ribs! Some snakes may have as many as 400 rib bones, which is more bones than a human has in their entire body!



Assemble the skeleton!

Materials

- Q-tips
- Scissors
- Piece of paper
- Pencil or markers
- Elmer's glue

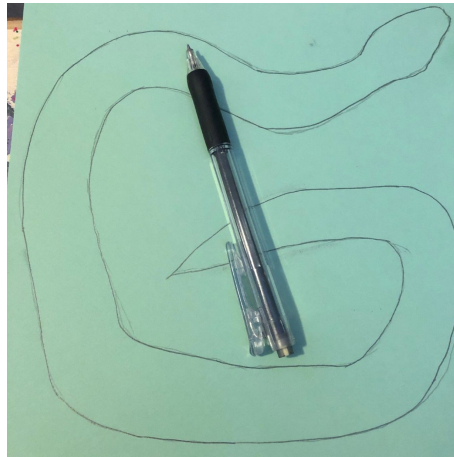
Steps

1. With adult help, use the **scissors** to cut the cotton ends off the **q-tips**, and then cut some of the q-tips in half.
 - a. Tip: if you are having trouble cutting the q-tip, use the scissors to score the q-tip and then use your hands to bend it along the score you created. Bend it a couple of times to break off.
 - b. Optional: do it with nature! Use thin twigs instead of q-tips. Break them to the appropriate size pieces as needed.
2. On your **piece of paper**, use a **pencil or marker** to make the outline of a snake. Make sure that this outline is as long as the paper and at least an inch wide.

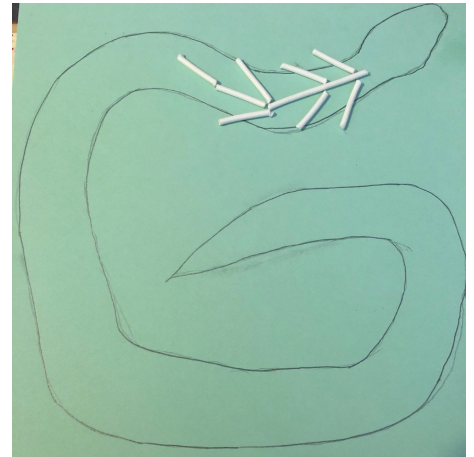
3. Arrange the q-tip pieces along the body of the snake. Make sure to have a spine and ribs!
4. Use **Elmer's glue** to apply a thin layer of glue to each q-tip, and gently press the q-tip back onto the paper.
5. Let your skeleton dry for at least a couple of hours.



Using scissors, cut cotton ends off the q-tips, then cut in half.



Draw the outline of a snake. Make sure it is at least 1 inch wide.



Arrange and glue the q-tip pieces onto the snake outline to make the spine and ribs.

Post-Activity Questions and Activities

- Can you think of any other animals with unique skeletons?
 - How do those skeletons help the animal survive? Is there a special purpose for the skeleton?
- Pick an animal from the following categories: mammal, reptile, amphibian, bird, fish. Research what their skeleton looks like and compare and contrast some of the features.
 - This [link](#) will help you compare an amphibian, bird, and mammal to a human (also a mammal).
- How do invertebrates, or animals without spines, look on the inside? What gives their body support, and how do they move if they don't have bones?
- You can do this craft again by googling animal skeletons and printing out your favorite, then gluing the q-tips or twigs over the bones!