

Inquiry Question

What makes your back flexible?

Name: _____ **Date:** _____



What gives you the ability to bend, twist, run, or skip?

Does having a lot of bones or just a few bones in your body make you more flexible?

Try this experiment and find out! Make sure you have an adult help you.

General Instructions

The end goal of this project is to be able to understand why your back is flexible. The experiment uses different types of materials. Thus, it is important to understand what materials represent which parts of the back.

Materials you'll need:

- Drinking straw
- Pipe cleaner
- Scissors

Hints and Ideas:

1. Thread the pipe cleaner through the straw. Then gently try to bend the pipe cleaner where it is covered in the straw. Does the pipe cleaner bend much?
2. Take the pipe cleaner out of the straw and cut the straw into pieces that are about one inch long. Thread the pieces of the straw onto the pipe cleaner so that they are touching each other.
3. Now gently bend the pipe cleaner again. How easily does it bend?

What Happened:

The pipe cleaner and straw are representing how joints allow our bodies to move. When the straw was in just one long piece, it was representing one long bone, such as our thigh bone or upper arm bone. These bones can't bend because there is no joint there to allow that to happen. Instead, these solid bones give our bodies stability. But when the straw was cut in pieces and then placed on the pipe cleaner, it was very easy to bend because of the "joints" created by the cuts in the straw. A joint is where two or more bones meet.

The small pieces of straw stacked on top of each other are very similar to how our bodies' backbone is structured. Your spine is made up of small bones stacked on top of each other with the spinal cord threaded through them. Like the pipe cleaner, you can bend your back forward and backward, side to side, and even rotate in a circle. The stacked bones are not very stable though, so your back has strong muscles to help keep your spine straight.

Your body has a lot of other joints too - bend your arms and legs, wiggle your fingers and toes, sit down, reach up high, and look from side to side. It is possible for you to move your body in all of these ways because of joints in your fingers, ankles, knees, hips, elbows, neck, and everywhere else that bones connect inside of your body!

Project submission:

Draw a cartoon panel which depicts your procedures while conducting this lab. Your cartoon should be a minimum of four frames. You can draw the cartoon or use an online cartoon creator to create your comic. Once you have completed your work, print or save your work and submit it to the project drop box.