



# Science Experiment: Bones and Tendons Project: Health

## Supplies:

- Craft Foam
- Paper Straws
- Tape (or glue)
- Pony Beads
- Twine or Yarn
- Scissors
- Chopsticks (optional)
- Pen

**Time:** 30-40 Minutes

**Preparation:** Discuss with students that they have bones and tendons in their hand that help them move their hands. Ask students to feel their hands and try to determine how many bones are in each finger and in the palm area of their hands. *For our experiment we will be creating the phalange bones in the fingers and the metacarpal bones in the hand. There are 3 phalanges in each finger and 2 in the thumb. There is also one metacarpal bone in the palm that connects to each finger.*

## What to Do:

1. Trace your hand on craft foam and cut it out.
2. Cut paper straws into pieces for the bones in your fingers and in your hand. Use the cut out of your hand to help determine the size of each bone. In order to help your hand model work the best, be sure to leave a large space between each “bone.”
3. Attach the bones to the foam hand using tape or glue.
4. Cut 5 pieces of twine or yarn. They should be at least 12in long each (make them longer than you think as you can always trim them later).
5. Tie a bead to the end of each piece of twine.
6. Run your twine or yarn through each of the finger bones and down to the metacarpals. Tie a bead on the other end of the string once it is through the bones.
7. Optional: tape a chopstick to the palm to act as a handle.

## Reflect:

1. With this model, how did you move the hand?
2. What body part are the strings imitating? (*tendons*)
3. Does the model simulate how a hand moves exactly? Why or why not?

**Apply:**

The tendons cause the fingers to move when stress is placed on them. How does your body place stress on your tendons? *The muscles in your forearm actually cause your fingers and thumb to move. The tendons are long flexor tendons that extend from these muscles.* If you were to cut one of your tendons down by the metacarpals, how would it affect the rest of that finger? *It would be difficult for the rest of that finger to operate correctly because the tendon is one long strand that connects the entire finger.* What else helps your hand to operate? Could you make a model of other parts of your skeletal system?