Grades K–2
Go, Go, Go Around New York
Muscle Lab

In this activity, we will create a paper arm to show how our own arm really works!

What Will You Learn?

- Learn how your brain sends signals to your muscles
- Learn about how our muscle fibers work

Materials:

- Muscle worksheet
- Scissors
- Hole puncher
- Metal fastener
- String
- Tape
- Crayons, colored pencils, markers, etc.

Instructions:

1. Cut out the arm from the muscle worksheet.
2. Decorate your arm however you’d like. Get creative!
3. Using a hole puncher, punch holes at the circles and at the center of the X’s on the arm cutouts.
4. Place arm piece Z on top of piece Q. Make sure the X holes align.
5. Push the metal fastener into the holes at the X’s to secure the pieces.
6. Thread one piece of string from the back through each hole at the top of piece Q and tape them down onto piece Z, on either side of the metal fastener.
7. With your completed arm, pull the strings until all the slack is gone and then measure the length from the end of the hold to the start of the tape.

**Reflection Questions:**
- What is needed for your muscles to function properly?
- What are the two proteins inside our muscle fibers?
- Flex your own muscles to notice which parts contract and which relax.

**Explanation:**
- The string is acting as the nerves moving the muscles and we are the brain sending the signals to get the arm muscles to move.
- The two types of proteins found inside the body are actin and myosin.
- When we want to move our arm, the brain sends a message to the arm telling the muscle to shorten. It's like when you pull the two ends of a rubber band closer together. Muscles in our arms usually work in pairs. When one muscle contracts, the other muscle relaxes. For example, when we bend our arm, the biceps muscle contracts and the triceps muscle relaxes.
Further Reading Recommendations:

Human Muscles by Jodi Wheeler-Toppen

I Am Strong: A Positive Power Story by Suzy Capozzi

Your Muscular System Works! by Flora Brett

Borrow these books and more: borrow.nypl.org
MUSCLES AREN'T PUSHY: Muscle Lab
Arm Cutouts