

Robot Hand Activity Lesson Plan

Suggested Age / Grade Level	Curriculum Covered	Duration
Grade 3 - 8 (8 - 13 years old)	The Musculoskeletal System: <ul style="list-style-type: none">- Bones- Muscles- Tendons	1 hr

Overview

Students will explore human anatomy, in particular the anatomy of our hands. Students will learn about bones, muscles and tendons. Students will also be able to apply what they have learned by making their own robot hand.

Learning goals

- Understand the role of bones in the human body and learn about the bones of the hand
- Understand the role of muscles in the human body and learn about the 3 different types of muscle
- Understand the role of tendons, tendon sheaths and joints in the human body

Materials

- Construction paper
- A pen or pencil
- Scissors
- Tape
- String or yarn - it's best to have 5 different colours, but if you don't that's ok!
- Drinking straws, either paper or plastic.
It's more eco-friendly to use paper straws, but if you have plastic straws lying around at home, that's ok to use too!
- 1 jumbo straw

Key terms

Bones: provide support to our bodies and help form our shape. Bones also protect our bodies' organs.

Phalanges: the finger and thumb bones in our hands

Metacarpals: the bones in the palms of our hands. The phalanges connect to the metacarpals.

Carpals: the bones in our wrists

Digit: another word for fingers, thumbs and toes

Muscles: they do everything from pumping blood throughout your body, to helping you lift your heavy backpack.

Smooth muscle: muscles that you cannot control

Cardiac muscle: also called myocardium. These muscles are the muscles that make up your heart. Like smooth muscle, these muscles are also involuntary.

Skeletal muscle: muscles that help us do many things such as running, walking and shooting a basketball.

Joint: the place where 2 bones meet

Tendons: cords made of tough tissue and they work as special connector pieces. Tendons attach muscles to bones.

Tendon sheaths: thin layers of tissue through which tendons slide through

References

<https://www.fizzicseducation.com.au/150-science-experiments/human-body-science/handy-movement/>

<https://kidshealth.org/en/parents/bones-muscles-joints.html>

<https://kidshealth.org/en/kids/muscles.html>