

# Human Anatomy - Muscles in the Head

## Lesson Overview

Most students are familiar with the concept of muscles in the arms, legs, and torso of the body that help us move and perform tasks. Many students might not realize that there are muscles in the human head too! In this activity, students will dissect the muscles in the human head. They will explore their structure, as well as identify their functions and their pairs.

## Objectives

- Dissect and explore a model of the muscles in the human head
- Identify muscle pairs in the human head
- Predict and identify the ways that brain sends signals to the muscles

## Standards (NGSS and Common Core)

For state specific standards visit [edu.zspace.com](http://edu.zspace.com)

### Next Generation Science Standards

- Life Science - From Molecules to Organisms: Structures and Processes
  - MS-LS1-3 Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.

### Common Core Connections

- Language Arts
  - WHST.6-8.1 Write arguments focused on discipline content.

## Differentiation (Δ)

- Group students heterogeneously to allow students with a strong command of the English language to assist in reading or interpreting questions
- Provide paper copies of diagrams to students to use as a reference
- Provide a handout with a list of vocabulary terms and definitions that will appear in the activity
- Allow students to provide answers that are handwritten, typed, or verbal
- Enrichment: Students could work on the discussion questions and lead the class discussion
- Enrichment: Students could research similar topics and create presentations

**Grade level: 6th - 8th**

**Lesson Time: 45 Minutes**

### Key Terms:

Muscle pairs  
Nerves  
Skull

### Resources:

Answer Key  
Human Anatomy -  
Muscles in the Head  
worksheet

## Introduction

Students must be familiar with muscles and muscle pairs before beginning this activity. Students can complete the "Human Anatomy - Muscles" Studio activity as preparation for this activity.

The teacher will engage the students in a discussion of muscles by asking them to name places on their bodies where they think muscles are located. The teacher will guide the students in discussing the small muscles in the body that allow for minute movements, for example the neck, fingers, and cheeks. The teacher will tell the students that they will explore and dissect a model of a human head to better understand the muscles that are hidden under the skin.

## Activity

### Human Anatomy - Muscles in the Head

This section will be completed in Studio along with the Human Anatomy - Muscles in the Head worksheet.

#### Scene 1

Notice all the muscles in your head.

- Use the Dissect stylus mode to remove the different muscles.
- Where do you see groups of muscles working together? What role do they play?

#### Scene 2

- The brain controls the movement of the muscles in your body. How does the brain send signals to the muscles?
- Use the Cutting Plane tool to see where the nerves connect to the muscles.

## Closing

The teacher will bring the students together to discuss their findings and questions. They will review the Questions for Discussion together as a group.

## Questions for Discussion

1. Which muscles in the head surprised you the most?

*Answers will vary. Sample Answer: I was surprised at that there are so many muscles in the neck!*

2. The purpose of muscles is typically to move bones. For example, you use your bicep and tricep muscles to move your lower arm up and down at the elbow. Many of the muscles in the head, however, do not move bone, since the skull is mostly one large bone. What do you think is the purpose of those muscles that do not move bone?

*Answers will vary. Sample Answer: The muscles in the head have the purpose of moving skin (smiling, lip pursing, raising eyebrows, etc.), moving the eyes in their sockets, and moving the jaw to speak or chew.*

### **Δ Investigate Further**

Follow-up Activity: Human Anatomy - Eye Socket - Studio

Follow-up Activity: Human Anatomy - Brain - Studio

### **Answer Key**

Activity Questions Provided in Studio

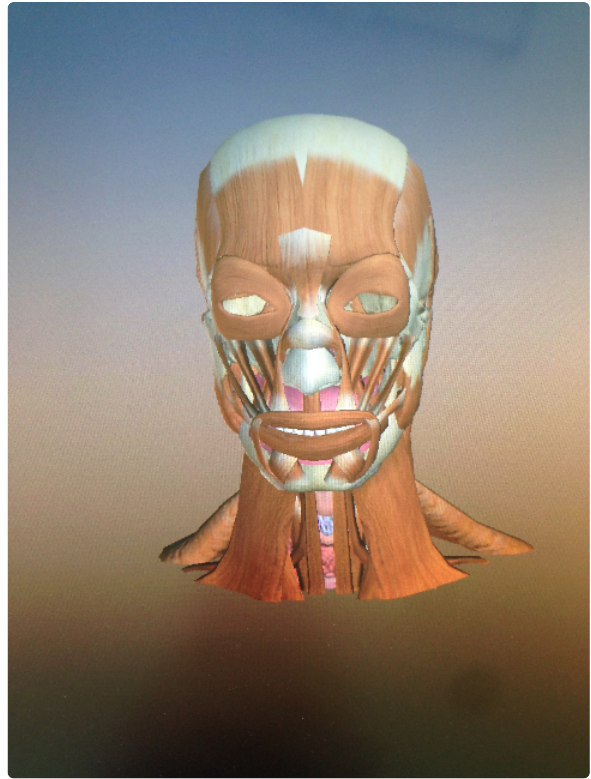
1. Where do you see groups of muscles working together? What role do they play?

*Answers will vary. Sample Answer: I can see groups of muscles in the nose and cheek areas, in the neck, and around the mouth and chin. These muscles help make facial expressions seem symmetrical, they allow the person to move the head, and they allow the person to speak and eat in a symmetrical way.*

2. The brain controls the movement of the muscles in your body. How does the brain send signals to the muscles?

*Answers will vary. Sample Answer: The brain sends signals to the muscles by sending electrical impulses through nerves inside the muscles. These impulses contract various muscles. Some muscles are also involuntary, meaning that they are controlled by the part of the brain that is not involved in conscious thought. These muscles move without human control, including breathing, some functions of digestion, and the heart beating.*

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