

Muscular and Skeletal System

5E Lesson

The 5E model is a scientifically proven method to improve student engagement and learning in your classroom

- ✓ Engagement
- ✓ Exploration
- ✓ Explanation
- ✓ Elaborate
- ✓ Evaluate



Complete Teacher Instructions

Muscular and Skeletal System 5E Lesson

Grades 7-12	Muscular and Skeletal System	Ongoing Lesson
Lesson Objective: Students will learn about: - Structure and functions of each system and their combined functions - Types of muscles - Skeletal muscles, in particular - Fibers - Function - Control - Muscular and skeletal disorders - The two skeletons: axial and appendicular - Muscle growth - Joints - Largest bone		
Possible Student Misconceptions: - Muscles are only involved in voluntary movement - Muscles become fat if you stop exercising - Bones are not living tissues - Cracking your knuckles leads to arthritis		
Materials: 1 device (smartphone, Chromebook, laptop, tablet, or computer) per 3 students - A means of projecting a PowerPoint presentation - Internet access - General classroom objects		
Teacher Notes: - All videos can be accessed directly from the PowerPoint. To retrieve the icon while in slideshow mode and it will automatically open for you. If it doesn't, right-click on the image and click Edit Hyperlink or something similar. I've created a video walkthrough if needed. It can be accessed here - https://youtu.be/oCIKIP9SaDQ - I don't believe in long lessons. If you feel your students are losing their focus, stop the PowerPoint and give them a 5-minute break. If you'd like to see how I recommend my video collection here - http://www.teachwithferguy.com/sc are tons of brain-break videos to choose from all grouped by category.		

Muscular and Skeletal System – 5E Lesson

Engagement Phase Your students will watch the video 'Why Do Your Knuckles Pop?' and complete the questions found in the file – Engagement – Why Do Joints Pop Video . Teacher Notes: - The video is about four and a half minutes long - You may need to show the video more than once or pause when an answer is given to one of the questions.	Duration: 10 min Teacher Role: Engage students and introduce the topic
Exploration Phase Exploration – Lab Station Activity - In groups of 2-3, have your students complete Exploration – Lab Station Activity. Once they're done, they will submit their passport to you. Teacher Notes: - The complete instructions for my Lab Station activity can be found in the START HERE – Instructions file.	Duration: 15 min Teacher Role: Monitor and facilitate
Explanation Phase PowerPoint Lessons - The lesson is found in the folder – Explanation – Lesson - This lesson is designed to be completed over two days - There are eight embedded videos and plenty of opportunity to engage, interact and check for your students' understanding throughout the lesson - The lesson covers the following topics: - Purposes - Muscular System - Types of Muscles - Skeletal Muscles - Skeletal Muscle Fibers - Skeletal Muscle Function - Skeletal Muscle Control - Muscle Disorders - Skeletal System - Two Skeletons - Skeletal Structure - Skeletal Disorders Teacher Notes: - All videos can be accessed directly from the PowerPoint. To retrieve them, click on the video icon while in slideshow mode and it will automatically open for you. If they don't open, right-	Duration: 40 min Teacher Role: Monitor and facilitate

click the image and select Edit Hyperlink or something similar. - I've created a video walkthrough if needed. It can be accessed here - https://youtu.be/oCIKIP9SaDQ - I have also enclosed a .PDF version of both the teacher and student versions.	
Elaborate Phase Elaborate – Scavenger Hunt Your students will complete – Elaborate – Scavenger Hunt . This activity will require your students to move beyond what was covered directly in the lesson and allow them to further develop their understanding.	Duration: 1 hour Teacher Role – Facilitate learning and keep students focused
Teacher Notes: - Students will work individually or in small groups - Students will need one device per group	Goal ☐ Students use their newly obtained knowledge to propose solutions and extend their learning to new situations
Evaluate Phase Quiz Have your students complete - Evaluate – Muscular and Skeletal Quiz	Duration: 30 min Teacher Role – Distribute and collect evaluation
Teacher Notes: - It's sometimes best to have the students peer evaluate - Placing students in small groups and having them exchange papers to mark will accomplish two things - Provide immediate feedback on the questions they just completed - Significantly reduce your marking time - Peer evaluation is not needed, only suggested when appropriate	Goal ☐ Students are given the opportunity to demonstrate their understanding and evaluate their own progress

Each phase is clearly described

A Complete Lesson

Purpose

- Muscular System + Skeletal System = Musculoskeletal System

- Skeleton, muscles, cartilage, tendons, ligaments, joints, and other connective tissues
- Work together to
 - Provide support for the body
 - Allow movement
 - Protect internal organs
 - Maintain the body's shape



← Make sure your students are on track

Student copies with blanks
Videos embedded right into
your slideshow

Purpose

- _____
- Skeleton, muscles, cartilage, tendons, ligaments, joints, and other connective tissues
- Work together to
 - Provide support for the body
 - _____
 - _____
 - Maintain the body's shape



Skeletal Muscle Control



Interactive and Engaging Activities

Device-Based Scavenger Hunt Muscular and Skeletal System



Includes

- 5 Unique Locations
- Online form submission
- Answer Key

Works on all smartphones, tablets, Chromebooks, and laptops

- **100% Digital**
- Simulations
- Quizzes
- Videos
- Games
- and more



Muscular and Skeletal System

Lab Station Activity



7 Lab Station Activities to get your kids out of their seats and engaged in their learning

Get away from tired practices and unengaged students



Provide a Scientifically-Proven means of instruction



Incorporate Technology and Increase Collaboration

