

# Musculoskeletal System Lesson Plan

## Resources Provided

- "Introducing the Musculoskeletal System" video can be viewed using the following link: <https://youtu.be/GbMivRJKI-M>
- Musculoskeletal System PowerPoint Presentation
- Musculoskeletal System Lesson Plan with hand template
- Bone Logic Puzzle

## Keywords & Definitions

	Keyword	Definition
1.	<b>Bones</b>	Make up the skeleton and provide support and protection to the body.
2.	<b>Muscles</b>	Tissues that contract to make the body move.
3.	<b>Tendons</b>	Connect muscle to bone.
4.	<b>Contraction</b>	Shortening of a muscle.
5.	<b>Lengthening</b>	Relaxing of a muscle.
6.	<b>Medical Device</b>	Any material, apparatus, software or other article that is used to: Diagnose, prevent, monitor or treat a disease or injury; Investigate, replace or modify a part or process of the body.
7.	<b>Biomaterials</b>	Material that can be engineered to help the body to heal itself.

8.	<b>Biomedical Engineering</b>	The combination of engineering and medicine to help improve people's health.
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## Extra Info / Files

	Web Address	Brief Description
1.	<a href="http://www.youtube.com/watch?v=94Q-fvCAJzQ">www.youtube.com/watch?v=94Q-fvCAJzQ</a>	"Muscle Basics: What Athletes Need to Know About the Muscular System"
2.	<a href="http://www.youtube.com/watch?v=0vLiPT_Otw">www.youtube.com/watch?v=0vLiPT_Otw</a>	"Bone Basics: How They Heal and How to Keep them Healthy"
3.	<a href="http://www.youtube.com/watch?v=hdes6W7600w">www.youtube.com/watch?v=hdes6W7600w</a>	"The Basic Science of Tendons and Tendinitis"
4.	<a href="http://theinteractivehand.worldsecuresystems.com/">theinteractivehand.worldsecuresystems.com/</a>	Website exploring the hand including tendons and bones.

## Materials Needed

- Hand template printed out
- Scissors
- String
- Straws (large)
- Tape
- Materials to fix the tendon. Ideas are toothpicks, paperclips, thread, yarn, ice lolly sticks, elastic bands or pipe cleaners.

## Instructions

- For Activity 1 (Making a Finger or Hand):
  - Cut out the hand following the dashed lines on the hand template.
  - Cut up a straw into three pieces to fit onto the bones of the finger. **Note:** Make sure the straws are small enough in order to leave enough space between them when they are taped to the paper finger!
  - Tape the end of a piece of string to the red bone at the tip of the finger.
  - Put the string through the three pieces of cut up straw.
  - Tape the three pieces of cut up straw to the blue, green and yellow bones of the paper finger. **Note:** Make sure to leave a big space between the straws and not to tape the string!
  - Bend the paper between the straws for the finger to move easier.
  - If you wish, repeat for the other fingers.
- For Activity 2 (Fix a Tendon):
  - Once the finger or hand is finished, the use scissors to cut the string between two straws. **Note:** The cut to the string acts like a tendon being damaged!
  - Using the materials available around the house, fix the tendon.
  - Possible materials include toothpicks, paperclips, thread, yarn, ice lolly sticks, elastic bands or pipe cleaners. **Note:** The materials should allow the finger to move in the way that you want.

