



MAKING A MODEL OF THE MUSCULOSKELETAL SYSTEM

Build a simple, movable model to show how bones, muscles, and joints work together to help the body move.

GRADE LEVEL: Upper Elementary – Middle School

TIME: 60–90 minutes

SUBJECT: Life Science



QUESTION

How do bones and muscles work together to produce movement?



HYPOTHESIS

If we build a model with “bones” and “muscles”, then we will be able to show how muscles pull on bones at joints to create movement.



MATERIALS

- Cardboard or sturdy foam board (base)
- Wooden craft sticks or drinking straws (bones)
- Brass fasteners (paper fasteners) (joints)
- String or yarn (muscles)
- Straw pieces or small tubing (optional, for guides)
- Tape or glue
- Scissors
- Markers or colored pencils
- Labels (optional)



PROCEDURE

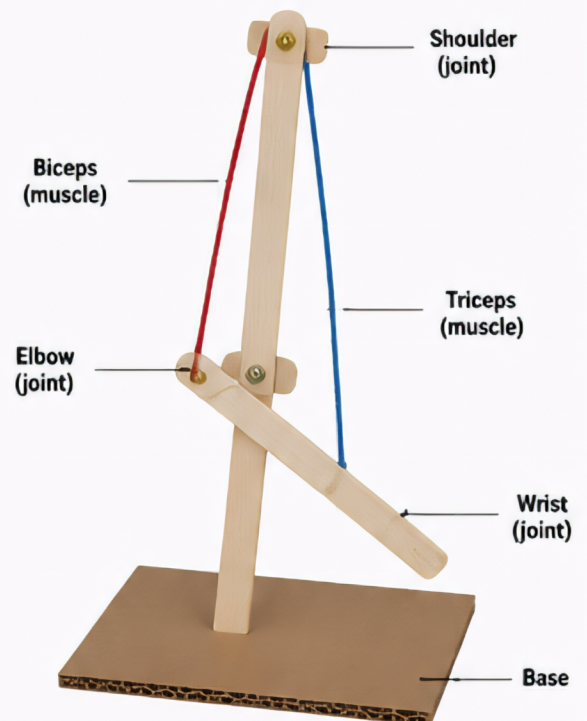
1. **Plan your model.** Choose a simple body part to model, such as an arm (shoulder, elbow, wrist) or a leg (hip, knee, ankle).
2. **Build the bones.** Use craft sticks or straws to make the bones. Connect them at the joints using brass fasteners so they can move.
3. **Add the muscles.** Use string or yarn to represent muscles. Attach the string to the bones on each side of the joint. When the string is pulled, the joint should move.
4. **Test the movement.** Gently pull the “muscle” strings and observe how the model moves.
5. **Label your model.** Label the bones, joints, and muscles.
6. **Take a photo or draw your model in action.**



CONCLUSION

Explain how your model shows how the musculoskeletal system works.

EXAMPLE: MODEL OF AN ARM



OBSERVATIONS

What happened when you pulled each muscle string?

Which muscle had to relax while the other contracted?



THINK FURTHER

How would your model change if you added more joints or more muscles? Try improving your model and test it again!