

Description of Model:

An upper arm connected to lower by pipe cleaner made of pvc. A section is cut out of the pvc upper arm with sponge lining. Baking soda is applied and then vinegar is pumped into the sponge through the playdough. The arm shows how the bones support and provide structure as a lever and the baking soda vinegar reaction shows the creation of red blood cells.

Materials List

- PVC Pipe: 2 in and ½ in diameter
- Drill and screw bits
- Baking soda
- vinegar
- pipe cleaners
- dish soap
- sponge
- playdough

Functions:

- Provide lightweight but strong protection; the bones and PVC pipe have different molecular make-ups, but provide similar structure and appearance.
- Easy movability; the bones of the arm act as a lever and provide a framework for the muscles, which move the body.
- Provide basic structure for body
- “Produce red blood cells”- we are using a chemical reaction (baking soda + vinegar) to simulate the production of red blood cells in the bone marrow.

Biological Principles

- Bones support the muscles and bodily structures and allow for movement
- The joint of the arm acts as a lever which can raise and lower at will
- Red blood cells are produced in the bone marrow, which are then distributed through the body. We are simulating this with a chemical reaction.

Construction

The construction for this project will not be a difficult one. Most of the skeleton will be PVC. The skeleton will consist of one arms, which will have a 2 inch PVC as the upper arm and a ½ inch as the forearm, on each side. We will wrap the structure in paper mache and may or may not spray paint a little of it to represent muscle tissue or veins, yet the rubber bands are the main idea for tendons. We are using baking soda and vinegar to represent the creation of red blood cells by bone marrow.

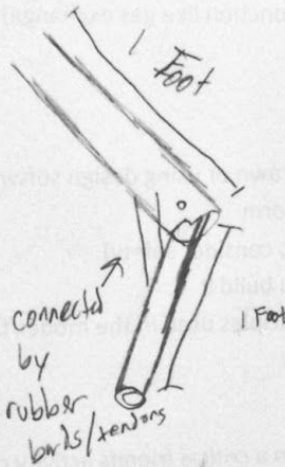
Skeletal System

Spine



single piece
of 2 foot
long, 2 in diameter
PVC

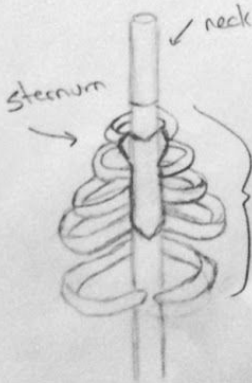
Arm



Front view

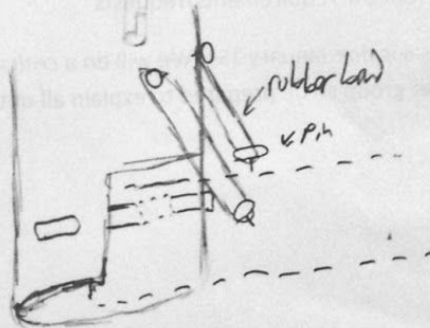


Ribs

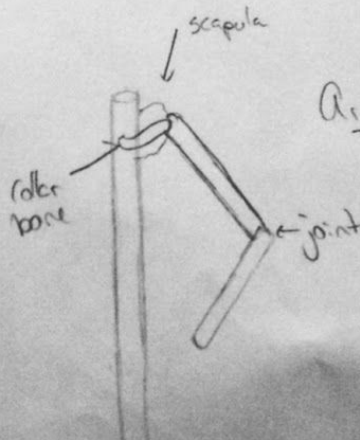


Only first
five ribs
(just to demonstrate)

Shows
muscle
uses bone
to move



Pin holds together
shows movement



Arm (cont)