SCIENCE

Human Body

Earth's Changing Surface

Clean Streams
Organization of the Human Body

Our bodies are organized as cells, tissues, organs, and organ systems. To move, many parts of our bodies must work together.
Cells - Basic building blocks of living things

Tissues - A group of similar cells that perform the same function. There are 4 kinds:
    1. Muscle
    2. Nerve
    3. Connective
    4. Epithelial

Organs - A structure often composed of different kinds of tissue

Organ System - A group of organs working together to perform a major function, such as the circulatory system and the digestive system.

Organism - A living thing.

Homeostasis - The process by which an organism's internal environment is kept stable in spite of changes to the external environment.
CELLS

plasma cell membrane
endoplasmic reticulum
nucleus
Vacuole
ribosome
golgi
mitochondria
lysosome
cytoplasm

I call it "The Cell."

Robert Hooke
directs the activities of the cell and includes genetic material such as chromosomes and DNA.

stores water and various chemicals

produces proteins

outer layer of the cell that allows certain materials in or out of the cell (Selectively Permeable)

stores, produces, and modifies chemicals

"cleans" the cell by breaking large molecules into smaller molecules

jelly-like substance that fills the cell

transports chemicals between cells and within cells

"powerhouse" of the cell that releases energy
What do cells need to stay healthy?

- Water
- Oxygen
- Nutrients

A way to get rid of waste.
1. Every living thing is made up of tiny units called cells.

2. Some organisms, such as bacteria, are made of only one cell.

3. An organism is any living thing, including plants, animals, and bacteria.

4. There are many types of cells in your body and each type has its own job.

5. Robert Hooke was the first scientist to use the word "cell."

6. Some tissues are made of one type of cell; others are made of several types.
Muscles move our skeletons by pulling on bones that meet at joints.
Fast Facts

• Babies have more bones than adults because they haven’t fused together yet.

• Joints are points on the skeleton where 2 or more bones meet.

• Ligaments are strong connective tissues that hold bones together in movable joints.
Movable Joints

Ball + Socket

Gliding

Pivot

Hinge
Movable Joints

**Ball & Socket Joints**
Allow the greatest range of motion. In your shoulder, the top of the arm bone fits into the deep, bowl-like socket of the scapula (shoulder blade). The joint allows you to swing your arm freely in a circle. Your hips also have ball-and-socket joints.

**Gliding Joints**
A gliding joint allows one bone to slide over another. The gliding joint in your wrist enables you to bend and flex your wrist, as well as make limited side-to-side motions. Your ankles also have gliding joints.

**Pivot Joints**
A pivot joint allows one bone to rotate around another. The pivot joint in the top of your neck gives you limited ability to turn your head from side to side.

**Hinge Joints**
Like the hinge of a door, a hinge joint allows extensive forward or backward motion. Your knee is a hinge joint that allows you to bend and straighten your leg. Your elbow is also a hinge joint.
Immovable Joints

Cannot move:
- Bones in your skull,
- Joints that connect ribs to your sternum (breastbone)
5 Functions of Your Skeleton

- Provides shape and support
- Enables you to move
- Stores certain materials until you can use them
- Protects organs
- Produces cells
- Blood producers
Take Care of Your Bones!

Balanced Diet
Regular Exercise
Calcium (Milk, Meat, Whole Grains, leafy green Phosphorus veggies)

Dear Me,

It's very important to take care of your bones. Be sure to exercise regularly. Be active, but wear the proper protective gear, such as a helmet, knee pads, and elbow pads. Eat a well-balanced diet that includes milk, meat, whole grains, and leafy greens so your bones get the nutrients of calcium and phosphorus. Be kind to your body!

Love, Me.