

Red Blood Cells

Your red blood cells are found in your circulatory system. This includes your veins, arteries and capillaries. The blood is moved around the body by the beating of the heart.

Your body makes about 150 million new blood cells a day, just to replace the ones that die. The cells do not divide; more are made in your bones. When you bleed, even one drop of blood has millions of cells. Most blood cells live about 120 days. You have about 5 liters of blood inside you.

Your red blood cells do several important jobs. They carry food from the stomach to all the cells in the body. They also carry oxygen from the lungs to all the cells in the body. Your red blood cells also carry carbon dioxide back to the lungs to leave the body.

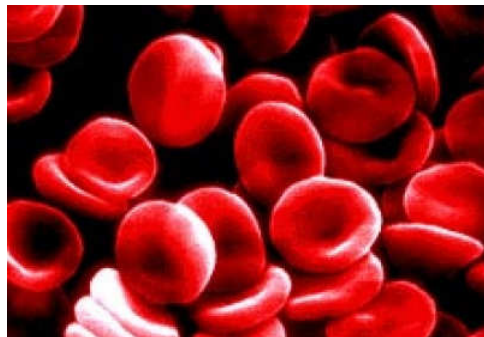
Red blood cells do not have a nucleus. They have very few organelles, so that they can carry the gasses that they need to carry. There are chemicals that attach to the nutrients or gas to carry it. The cells are round and are indented in the middle.

Sources:

Fran Balkwill, [Cells Are Us](#)

Franklin Institute, <http://sln.fi.edu/>

Carl Bianco, <http://science.howstuffworks.com/>



Draw this one!

Skin Cells

Skin cells are found on the outside of your body. The skin layer is about 10 cells deep. Your skin is constantly wearing out and being replaced. When a skin cell dies, it falls off and becomes dust. You lose 30,000 to 40,000 dead skin cell every minute! Adults have about 20 square feet of skin.

Skin cells have the job of keeping your body warm and cool enough. They also protect everything on the inside from the outside world. Skin cells also give you your skin color. There are chemicals inside the cells called melanin and carotene that make your skin the unique color it is. Our nerves connect to our skin so that we can feel things.

Skin cells are long and flat. They have the organelles that most animal cells would have.

Sources:

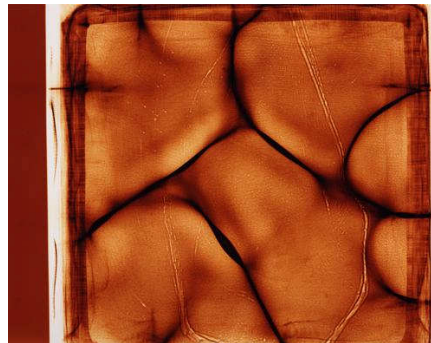
Fran Balkwill, [Cells Are Us](#)

<http://kidshealth.org/>

<http://yucky.kids.discovery.com/>



Skin Cell



Draw this one!

Nerve Cells

Nerve cells are the communication system in your body. Your brain sends messages to tell your body how to move, to digest your food, and do all of the things your body needs to do to stay alive. Your body sends messages back that its gets from sensing the world. The messages are electrical impulses and chemicals. Your brain has 100 billion neurons (nerve cells in the brain).

Most cells divide and create new cells in your body. Neurons never divide or are replaced. This makes your neurons the longest living cells in your body.

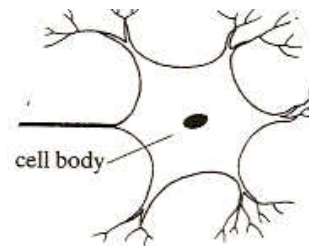
Nerve cells are very long and have arms coming out of them that connect to other cells. One nerve cell can be up to 1 meter (40 inches long). It has the organelles that most animal cells would have. Some do not have ribosomes.

Sources:

Fran Balkwill, [Cells Are Us](#)

<http://faculty.washington.edu/chudler/cells.html>

Draw this one!



Heart Cells

Heart cells are a type of muscle cell that is found in your heart. The heart pumps blood to all parts of your body. (In another reading, you will learn what the blood does for the body). Before your heart beats, it fills up with blood. When it beats, it squeezes the blood there along. This makes the rest of your blood keep moving around the body too!

Your heart beats about 70 to 80 times per minute or 100,000 times a day. Your heart pumps 2.4 ounces (or 70 mL) per heart beat. This equals 1,900 gallons (7,200 liters) a day!

Heart cells are like other muscle cells and are long and thin. They have a lot of mitochondria because they work and move all the time. They also have special fibers called actin and myosin to make your heart beat.

Sources:

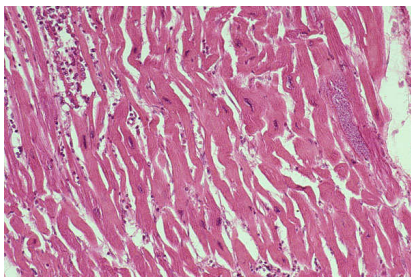
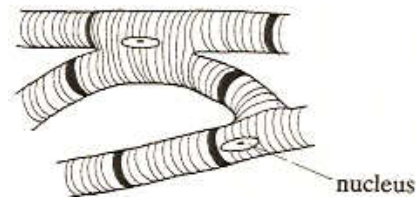
<http://kidshealth.org/>

<http://sln.fi.edu/biosci/structure/structure.html>

Carl Bianco, <http://science.howstuffworks.com/>

<http://www.eurekascience.com/ICanDoThat/>

Draw this one!



Bones Cells

If you didn't have your bones, how would you move around? You have 206 bones in your body. Your bones are made of cells. Cells probably seem really soft and not very strong. But bone cells make a chemical that hardens around each cell. This makes your bones strong!

Your bones cells give you structure. They are one part of what helps you move around. When you grow, you are gaining bone cells.

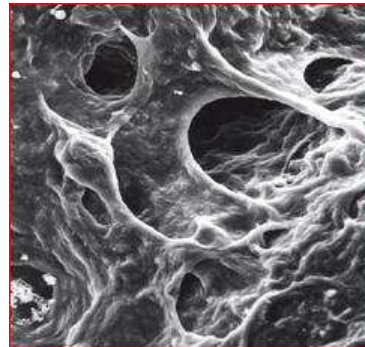
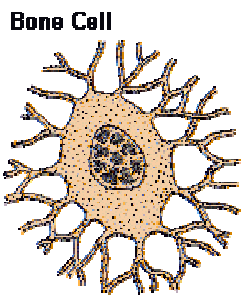
Bone cells are shaped like cubes and columns. They make proteins and control how many minerals (like calcium) are around the cell. These cells have a lot of endoplasmic reticulum and Golgi complex because they need to make a lot of protein.

Sources:

Fran Balkwill, [Cells Are Us](http://www.madsci.org/)

<http://www.madsci.org/>

<http://depts.washington.edu/bonebio/ASBMRed/cells.html>



Draw this one!

Rod Cells

When you see light enters your eyes and is focused on the back of your eyes (the retina). There are 2 kinds of cells that make up the retina: rods and cones.

Rods help you see the size, shape and brightness of an object, but they don't help you see color. They can see in very dim light and for peripheral vision (when you are not looking directly at something). Cones help to see the detail and the color of an object. You have 130 million rods in each eye (compared to 7 million cones).

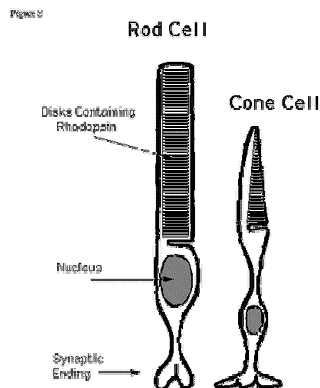
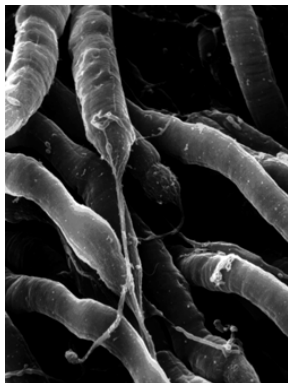
The cell is different in 2 ways: its shape and where the organelles are. The cell gets its name from its shape, a rod. The top part of the rod has a protein called Rhodopsin that absorbs the light and then passes the information on to the brain where it is interpreted. The rest of the cell has most of the parts an animal cell would have.

Sources:

<http://www.biologymad.com/NervousSystem/eyenotes.htm>

http://www.britannica.com/nobel/micro/507_81.html

<http://www.accessexcellence.org/>



Draw this one!

Cone Cells

When you see light enters your eyes and is focused on the back of your eyes (the retina). There are 2 kinds of cells that make up the retina: rods and cones.

Rods help you see the size, shape and brightness of an object, but they don't help you see color. They can see in very dim light and for peripheral vision (when you are not looking directly at something). Cones help to see the detail and the color of an object. You have 7 million cones in each eye (compared to 130 million rods).

The cell is different in 2 ways: its shape and where the organelles are. The cell gets its name from its shape, a cone. There are several types of cones that see the different colors (red, green and blue). You have the most cones in the central area, the area that focuses what you are looking directly at (the fovea).

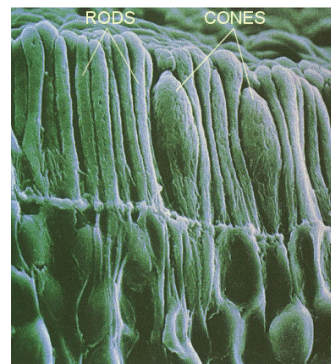
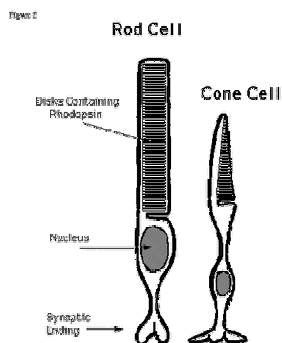
The top part of the cone has a protein called opsin that absorbs the light and then passes the information on to the brain where it is interpreted. The rest of the cell has most of the parts an animal cell would have.

Sources:

<http://www.biologymad.com/NervousSystem/eyenotes.htm>

http://www.britannica.com/nobel/micro/507_81.html

<http://www.accessexcellence.org/>



Draw this one!

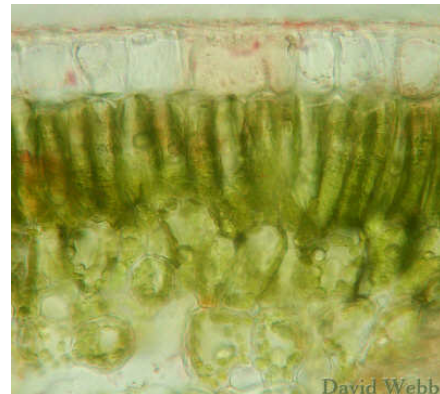
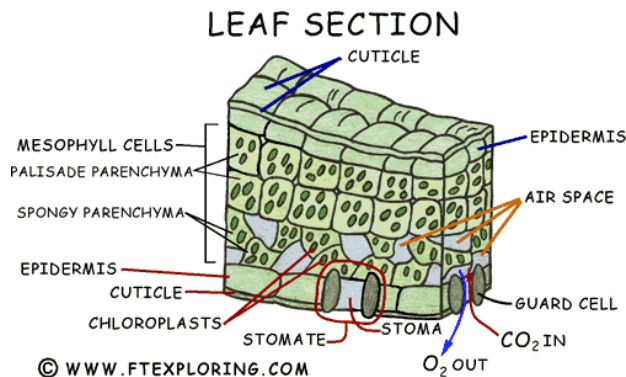
Leaf Cells

Leaves have several kinds of cells. The top layer is called the epidermis. The layer just underneath is called the palisade layer. This is where photosynthesis happens. Other cells in the leaf protect it, get carbon dioxide and give off oxygen.

Palisade cells are long and flat to absorb the most sunshine. They are packed with chloroplasts to do photosynthesis. There are up to 50 chloroplasts in one cell! These cells are packed tightly together.

<http://www.eurekascience.com/ICanDoThat/>

<http://www.ftexploring.com/photosyn/chloroplast.html>



Specialized Cells

Directions:

1. Read the information on your cell.
2. Fill in the chart for your cell (make sure you are on the right part!).
3. Create an overhead with that information to present to the class on that information. Remember they have the same chart you do, so include that information.
4. You will present the information to the class as a group. Prepare who will present each part ahead of time!