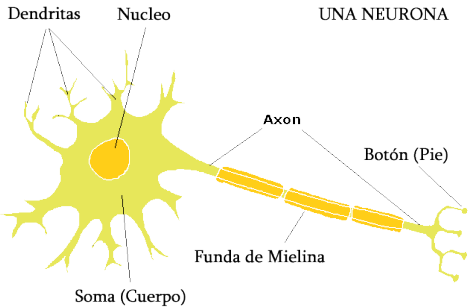



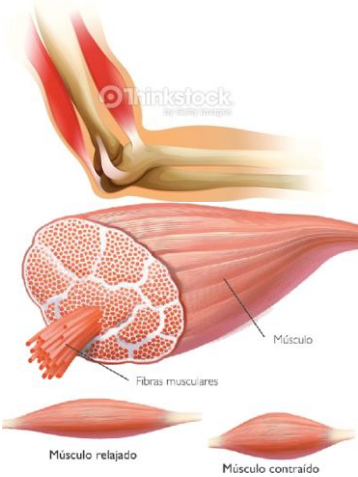
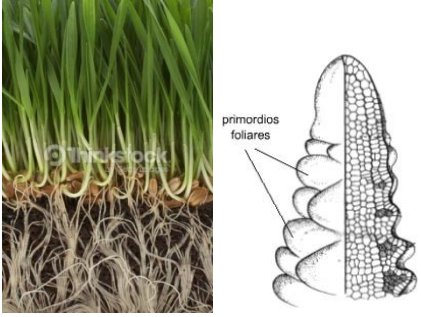
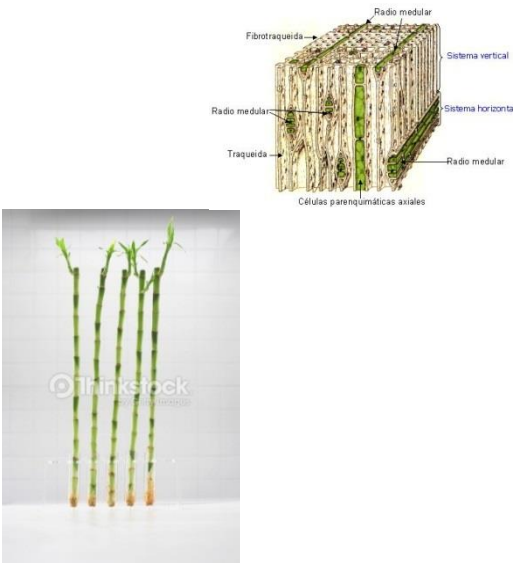




### Activity 3. The cells that surround us

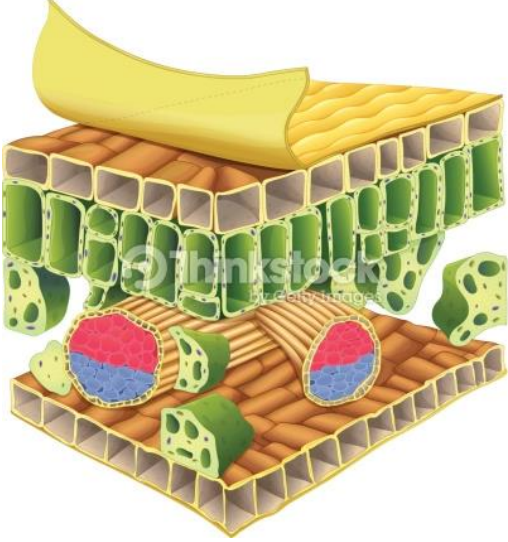

1. Find 10 representative images of a eukaryotic cell: 5 animal cells and 5 plant cells, as well as 5 illustrations of the prokaryotic cell.
2. Place your images in the comparative table and point out the basic characteristics of each type of cell.
3. In the same table, describe the basic functions of each cell.

Type of cell	Image	Example	Basic characteristics	Basic functions
Eukaryote : animal	 <p>Image obtained from <a href="http://webspace.ship.edu/cgboer/genes/nuronas.html">http://webspace.ship.edu/cgboer/genes/nuronas.html</a> for educational use only.</p>	Neuron	They are the main cells of the nervous system in animals. They are highly differentiated cells that have lost the capacity to divide to form new neurons. When they die, they are not replaced.	They are specialized in the reception of stimuli.
Eukaryote : animal	 <p>Image obtained from <a href="http://www.fotolog.com/ffin/27666031/">http://www.fotolog.com/ffin/27666031/</a> for educational use only.</p>	Erythrocyte	They are blood cells with the shape of a biconcave disk. They contain hemoglobin, and have organelles, but lack a nucleus and mitochondria.	They transport oxygen in the blood.
Eukaryote : animal	 <p>Image obtained from <a href="http://www.guiadelnino.com/embarazo/infe">http://www.guiadelnino.com/embarazo/infe</a></p>	Ovule	It is a large, cylindrical and immobile haploid cell found in the ovaries of females.	They are the reproductive cells of animals that reproduce sexually.


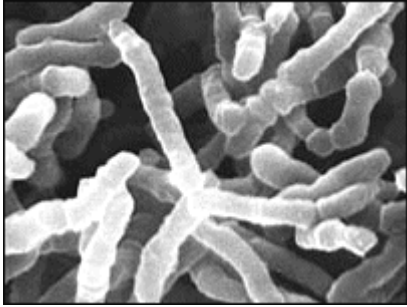
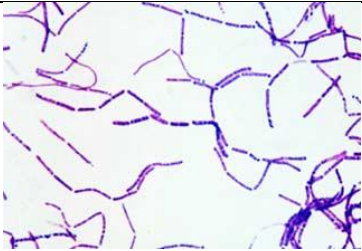
	<a href="#">rtilidad/quieres-donar-tus-ovulos/ovulo</a> for educational use only.			
Eukaryote : animal	 <p>Image obtained from <a href="http://www.thinkstockphotos.com/image/stock-photo-sperm-and-egg-cell/475645539/popup?sq=sperm/f=CPIHVX/s=DynamicRank">http://www.thinkstockphotos.com/image/stock-photo-sperm-and-egg-cell/475645539/popup?sq=sperm/f=CPIHVX/s=DynamicRank</a> for educational use only.</p> <p>475645539</p>	Sperm	They are haploid cells produced in the testicle of males who reproduce sexually. They have mitochondria in the neck or middle part and not in the head.	They are reproductive cells in animals that reproduce sexually.
Eukaryote : animal	 <p>Image obtained from <a href="http://www.thinkstockphotos.com/image/stock-illustration-human-elbow/480836863/popup?sq=muscle/f=CP IHVX/p=2/s=DynamicRank">http://www.thinkstockphotos.com/image/stock-illustration-human-elbow/480836863/popup?sq=muscle/f=CP IHVX/p=2/s=DynamicRank</a> <a href="http://www.cuerpohumano.info/2009/11/dibujo-de-las-celulas-musculares.html">http://www.cuerpohumano.info/2009/11/dibujo-de-las-celulas-musculares.html</a> For educational use only.</p> <p>480836863</p>	Skeletal muscle	They are large multinucleated cells that have organelles and form muscles.	They have a high contractile capacity and are in charge of the movement of muscles.
Eukaryote : plant		Meristematic cells	They are small cells with a high capacity for division, with organelles such	They are in charge of growth.

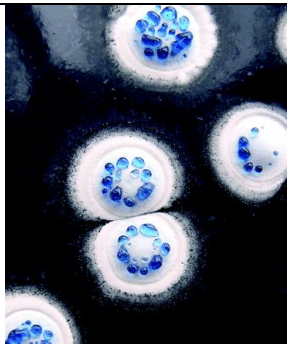
	 <p>Image obtained from <a href="http://www.thinkstockphotos.com/image/stock-photo-wheatgrass-with-exposed-roots/200377298-001/popup?sq=root/f=CPIHVX/s=DynamicRank">http://www.thinkstockphotos.com/image/stock-photo-wheatgrass-with-exposed-roots/200377298-001/popup?sq=root/f=CPIHVX/s=DynamicRank</a></p> <p>200377298</p> <p>Image obtained from <a href="http://www.biologia.edu.ar/botanica/tema10/10-2mprimario.htm">http://www.biologia.edu.ar/botanica/tema10/10-2mprimario.htm</a> for educational use only.</p>		<p>as the cell wall made of cellulose and chloroplasts, they are found mainly in the points of the stalks and in the roots.</p>	
<p>Eukaryote : plant</p>	 <p>Image obtained from <a href="http://www.thinkstockphotos.com/image/stock-photo-bamboo-growing-in-test-tubes/80716457/popup?sq=stem/f=CPIHVX/s=DynamicRank">http://www.thinkstockphotos.com/image/stock-photo-bamboo-growing-in-test-tubes/80716457/popup?sq=stem/f=CPIHVX/s=DynamicRank</a> for educational use only.</p> <p>80716457</p> <p>Image obtained from</p>	<p>Tracheid</p>	<p>Xylem cells of plants, they have organelles like cell walls made up of cellulose and chloroplasts, they form transport tubes in the plants.</p>	<p>They are conducting cells through which crude sap flows.</p>

	<a href="http://www.biologia.edu.ar/botanica/tema18/tema18-6gimnos.htm">http://www.biologia.edu.ar/botanica/tema18/tema18-6gimnos.htm</a> for educational use only.			
Eukaryote : plant	 <p>Image obtained from <a href="http://www.thinkstockphotos.com/image/stock-photo-snowflake-snowdrop-spring/464728093/popup?sq=flower/f=CPIHVX/p=4/s=DynamicRank">http://www.thinkstockphotos.com/image/stock-photo-snowflake-snowdrop-spring/464728093/popup?sq=flower/f=CPIHVX/p=4/s=DynamicRank</a> for educational use only.</p> <p>464728093</p>	Nectar producing cells	They are located in the nectaries of flowers; they are cells with plant organelles like the cell wall made of made of cellulose and chloroplasts.	They produce nectar.
Eukaryote : plant	 <p>Image obtained from <a href="http://www.biologia.edu.ar/botanica/tema13/13-4estomas.htm">http://www.biologia.edu.ar/botanica/tema13/13-4estomas.htm</a> for educational use only.</p>	Stoma cells	They are plant cells located in the leaves, with plant organelles such as the cell wall made up of cellulose and chloroplasts; they are two cells that form a space called the stoma.	They permit the exchange of gases in plants.
Eukaryote : plant		Phloem cells	They are cells that form transport tubes; they have plant organelles such as the cell wall made up of cellulose and chloroplasts.	They are in charge of transporting nutritious substances in plants.

	 <p>Image obtained from  <a href="http://www.thinkstockphotos.com/image/stock-illustration-plant-vascular-tissue/466073379/popup?sq=parenchyma/f=CPIHVX/p=2/s=DynamicRank">http://www.thinkstockphotos.com/image/stock-illustration-plant-vascular-tissue/466073379/popup?sq=parenchyma/f=CPIHVX/p=2/s=DynamicRank</a></p> <p>466073379</p>			
Prokaryote: Bacteria	 <p>Image obtained from  <a href="http://www.thinkstockphotos.com/image/stock-illustration-e-coli-bacteria/101443175/popup?sq=E.%20coli/f=CPIHVX/s=DynamicRank">http://www.thinkstockphotos.com/image/stock-illustration-e-coli-bacteria/101443175/popup?sq=E.%20coli/f=CPIHVX/s=DynamicRank</a> for educational use only.</p> <p>101443175</p>	<i>Escherichia coli.</i>	They are unicellular organisms, their cells have flagella, they are Gram positive, they do not possess most of the organelles, and they never have a nucleus. They live in the intestines of mammals.	They make up part of the intestinal flora, and aid in the absorption of nutrients.
Prokaryote: Bacteria		<i>Lactobacillus casei</i>	They are Gram-positive bacteria. They do not possess the majority of organelles, and they never have a nucleus.	They produce lactic acid, and are used in the dairy industry for the production of milk derivatives



	 <p>Image obtained from  <a href="http://www.thinkstockphotos.com/image/stock-photo-lactobacillus/100974335/popup?sq=Lactobacillus/f=CPIHVX/s=DynamicRank">http://www.thinkstockphotos.com/image/stock-photo-lactobacillus/100974335/popup?sq=Lactobacillus/f=CPIHVX/s=DynamicRank</a></p> <p>100974335</p>			such as yogurt.
Prokaryote: Bacteria	 <p>Image obtained from  <a href="http://www.brsquared.org/wine/Articles/MLF/MLF.htm">http://www.brsquared.org/wine/Articles/MLF/MLF.htm</a> for educational use only.</p>	<i>Leuconostoc oenos</i>	They are Gram-positive bacteria. They do not possess the majority of organelles, and they never have a nucleus.	They are used in the wine industry.
Prokaryote: Bacteria	 <p>Image obtained from  <a href="http://faculty.mc3.edu/jearl/ML/ml-5-2.htm">http://faculty.mc3.edu/jearl/ML/ml-5-2.htm</a> for educational use only.</p>	<i>Bacillus subtilis</i>	They are Gram-positive bacteria with the shape of a rod. They do not possess the majority of organelles, and they never have a nucleus.	They are natural fungicides that are used as a biological control agent against fungi.
Prokaryote: Bacteria		<i>Streptomyces coelicolor</i>	They are Gram-positive bacteria with the shape of a rod. They do not possess the majority of organelles, and	They are bacteria of the earth and are perceived when moisture is

	 <p>Image obtained from <a href="http://mic.sgmjournals.org/content/150/9.c/over-expansion">http://mic.sgmjournals.org/content/150/9.c/over-expansion</a> for educational use only.</p>		they never have a nucleus.	present since they release a substance called Geosmin that we call "the smell of wet earth. They are also exploited in the pharmaceutical industry to produce antibiotics.
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5. Observe your table and answer the following questions:

a. What aspects do your examples have in common?

All of the examples represented in the table correspond to living things, and all of them are cells.

b. What aspects do they not share?

The examples of prokaryotes are unicellular and those of eukaryotes are cells that belong to multicellular organisms, the eukaryotic cells, both animal and plant cells, have a nucleus that stores genetic information, with the exception of erythrocytes. Prokaryotic cells, on the other hand, do not have a nucleus.

6. Reflect upon the examples that you found and determine whether or not they comply with the postulates of the cell theory.

The cell theory postulates that all living things are made up of cells, in the examples found, all of them are living things, and therefore this postulate is true. The second postulate states that the cell comes from other cells through cell division, and all of the cells analyzed divide to generate new cells, or come from a cell. The third postulate of the cell theory states that the cell is a unit of inheritance; all cells have genetic material either in the nucleus like in eukaryotic animal and plant cells or in the cytoplasm in the case of prokaryotes since the cells are necessary for the transference of genetic material from one generation to another.