

Name: _____

Class: _____

Date: _____

KEY

EUKARYOTIC CELL ORGANELLES

ESSENTIAL QUESTION:

What are the structures and functions of the organelles in eukaryotic cells?

VOCAB

structure



What does the part look like and what is it made of?

function



What does the part do and what is its job?

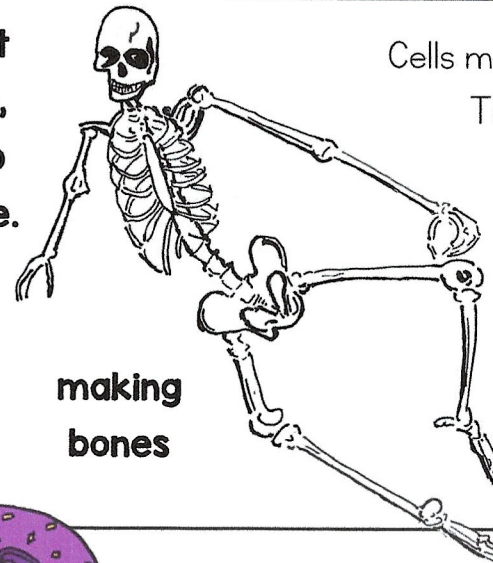
TOPIC QUESTIONS:

1

What is a cell?

Cells are tiny units of life that are like specialized factories, full of machinery designed to accomplish the business of life.

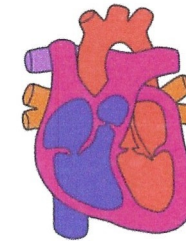
Cells make up every living thing, from blue whales to the archaebacteria that live inside volcanoes.



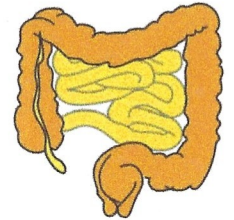
making bones

Cells make up your organs and tissues. They do important jobs like:

digesting food



pumping blood

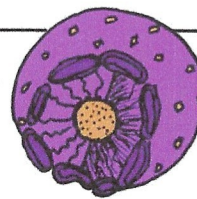


2

What is a eukaryotic cell?

Eukaryotic cells contain a nucleus.

Prokaryotic cells (bacteria) do not contain a nucleus.



Eukaryotic cells differ depending on the organism. Two main types of eukaryotic cells are animal cells and plant cells.

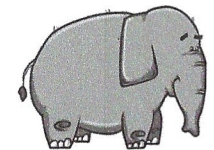
Eukaryotic cells are found in the eukaryotes, which include animals, plants, fungi, and protists.



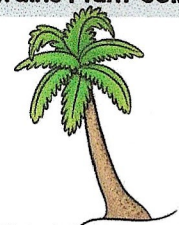
Do

Draw an organism that is made of animal cells and one that is made of plant cells.

Contains Animal Cells



Contains Plant Cells

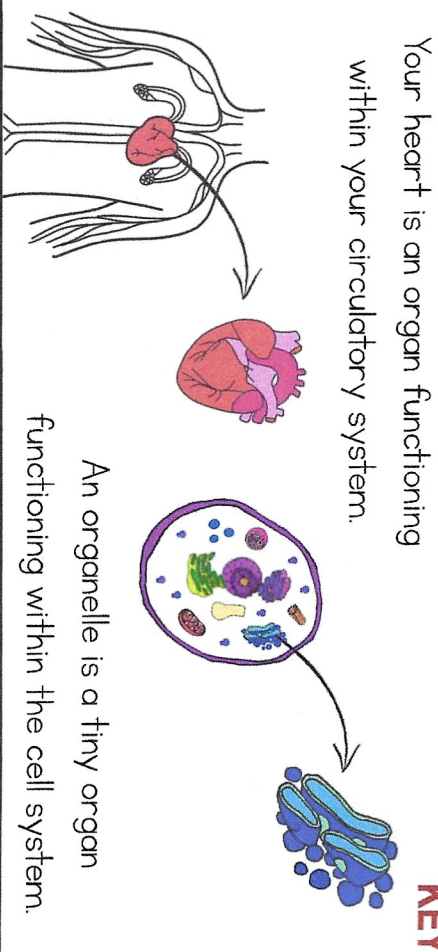


TOPIC QUESTIONS:

3

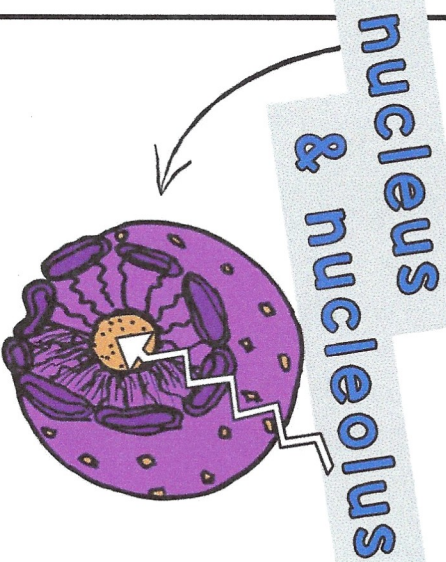
What is a cell organelle?

Cells contain tiny structures called organelles that perform specific functions within the cell, just as organs in our bodies perform as parts of our body systems.



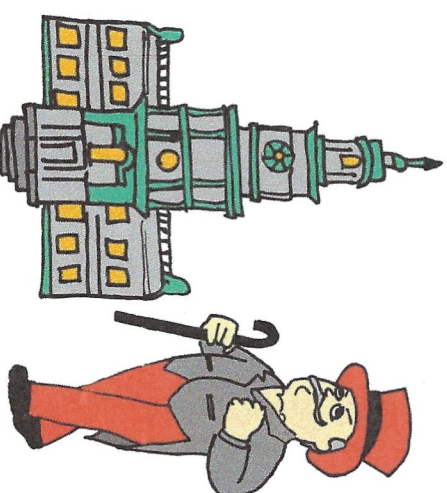
4

What are the eukaryotic cell organelles and what are their functions?

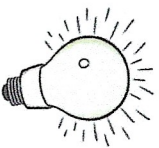


The nucleus directs all cell activity and controls its size and reproduction.

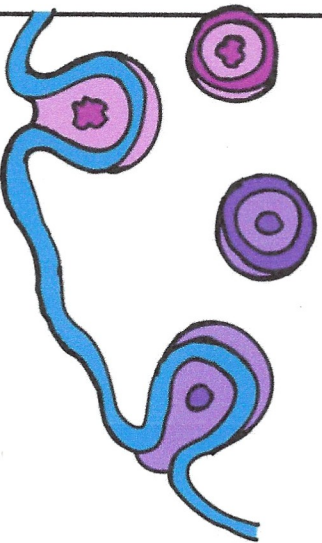
The nucleolus makes the ribosomes and writes the directions for how they should function.



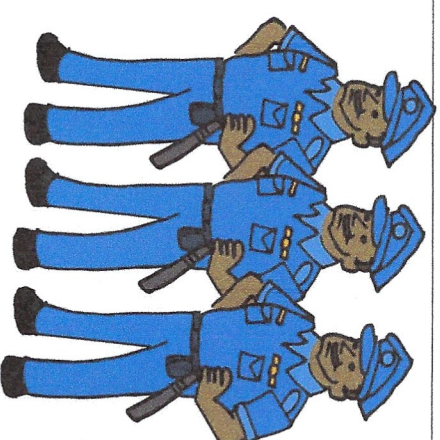
cell membrane



A city is a good analogy for a cell and its parts.



The cell membrane surrounds the cell and regulates what goes into and out of the cell. It is 'selectively permeable', which means that it can control what it lets in and out.

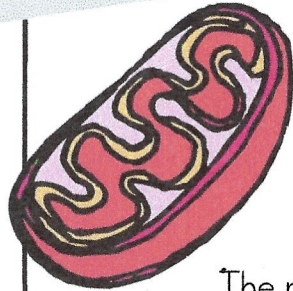


TOPIC QUESTIONS:

4

What are the eukaryotic cell organelles and what are their functions?
(continued)

mitochondria

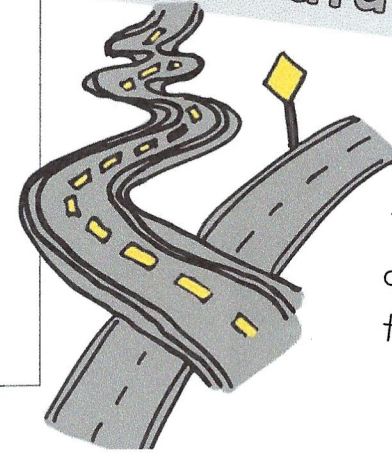


The mitochondria produce the energy needed for the cell's functions.



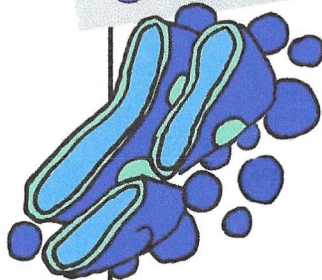
Powerplant

endoplasmic reticulum (E.R.)



The endoplasmic reticulum transports proteins and other materials to other organelles in the cell.

Golgi body



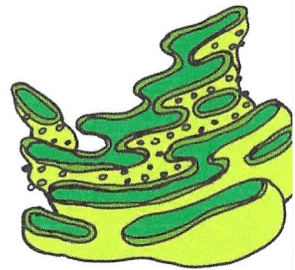
The Golgi body assembles and packages proteins for distribution.



Post Office

Roads and Highways

The 'rough E.R.' contains ribosomes, while the 'smooth E.R.' does not.



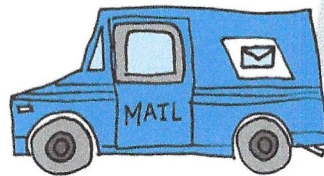
proteins

Products and Services



ribosomes

The ribosomes make the proteins (products) of the cell, which carry out a cell's functions.



vesicles

Mail Trucks

Vesicles transport materials throughout the cell and go through the membrane to move materials out of the cell.



Businesses

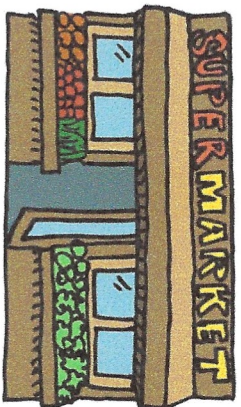
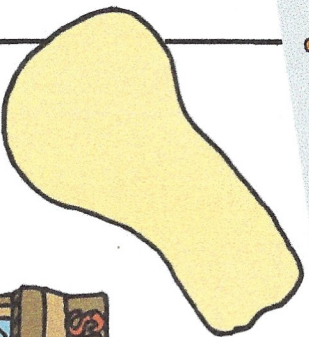
TOPIC QUESTIONS:

4

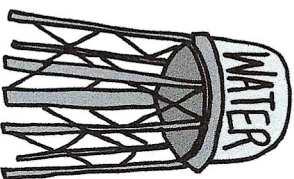
What are the eukaryotic cell organelles and what are their functions?
(continued)

vacuole

The vacuoles store food and water for the cell. Plant cells have large vacuoles and animal cells have small ones.

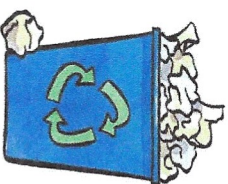
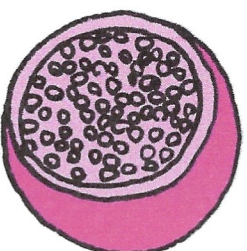


Supermarket and Water Tower

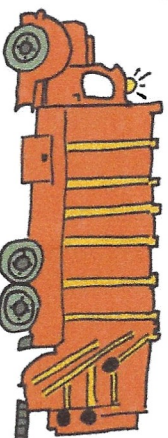


lysosome

Lysosomes break down worn-out cell parts and digest the cell waste.



Garbage and Recycling Centers



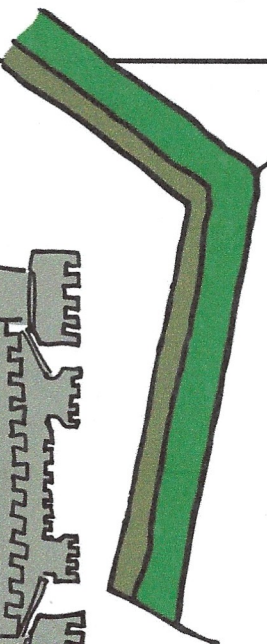
Plant cells contain two additional types of structures.

5

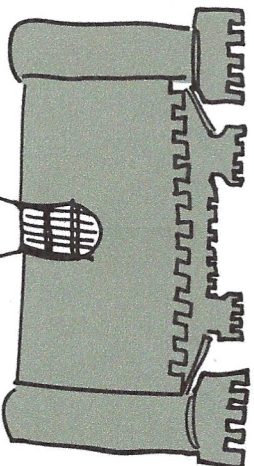
What makes animal and plant cells different?

cell wall

The cell wall surrounds the cell membrane. It protects the cell and gives it support.

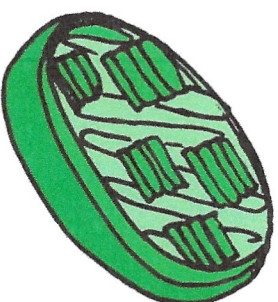


Fortress Wall

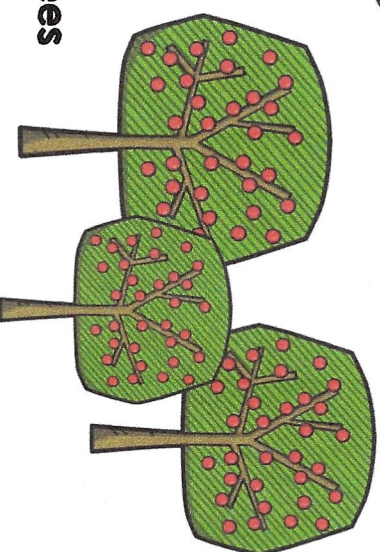


chloroplasts

The chloroplasts convert light energy into chemical energy in the process of photosynthesis.



Trees



KEY

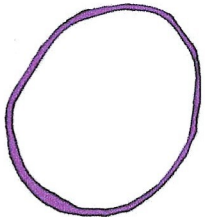
TOPIC QUESTIONS:

6

What does an animal cell look like with all of its organelles?



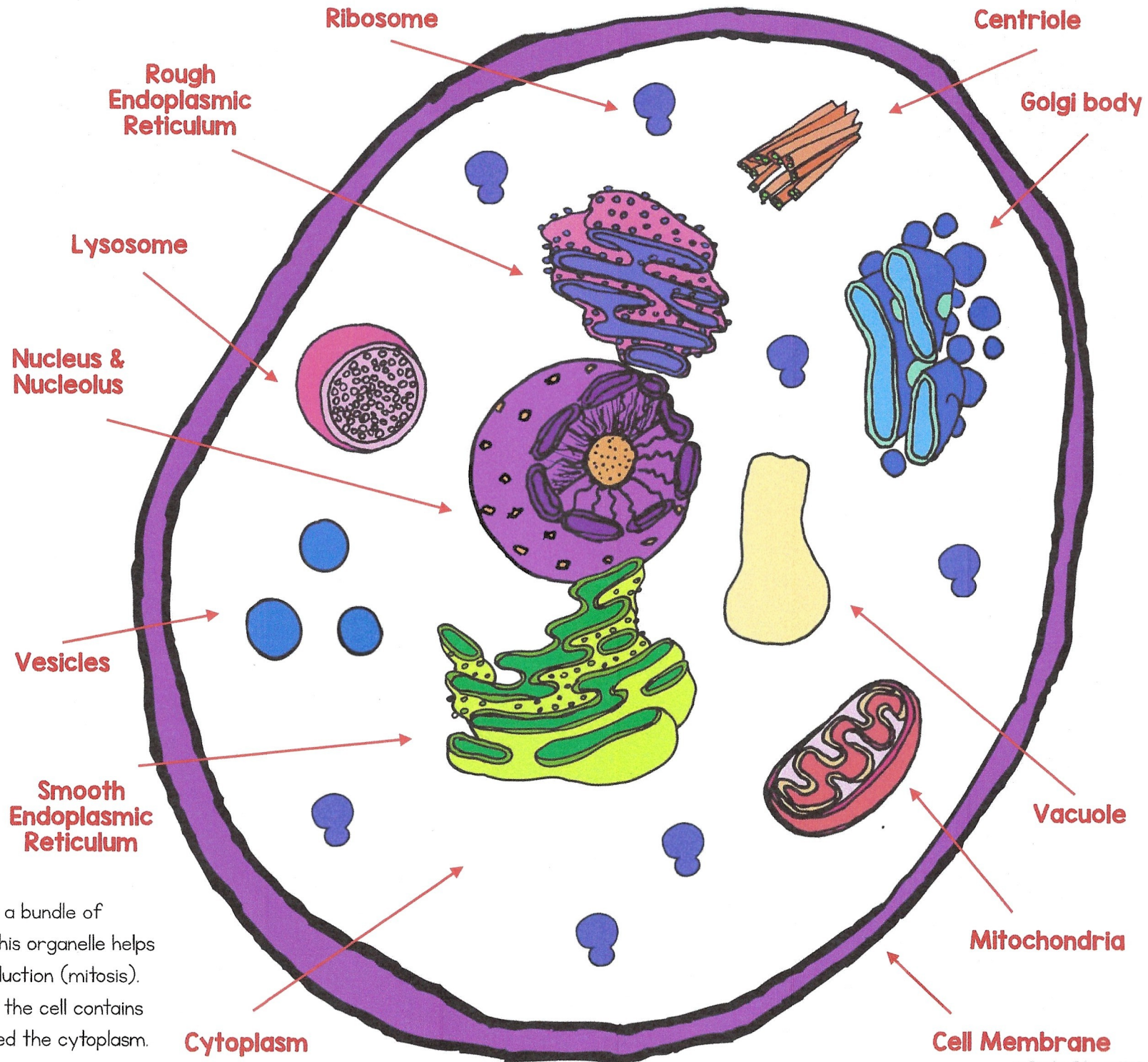
Draw the outer boundary of the cell. It should look something like this:



Then, label the organelles.

Extra Parts:

- The organelle that looks like a bundle of firewood is called a centriole. This organelle helps pull apart the cell during reproduction (mitosis).
- The internal environment of the cell contains a stable, jelly-like substance called the cytoplasm.



TOPIC QUESTIONS:

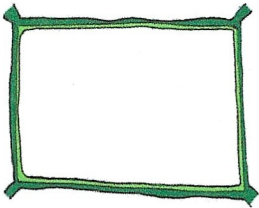
7

What does a plant cell look like with all of its organelles?

Cell Wall



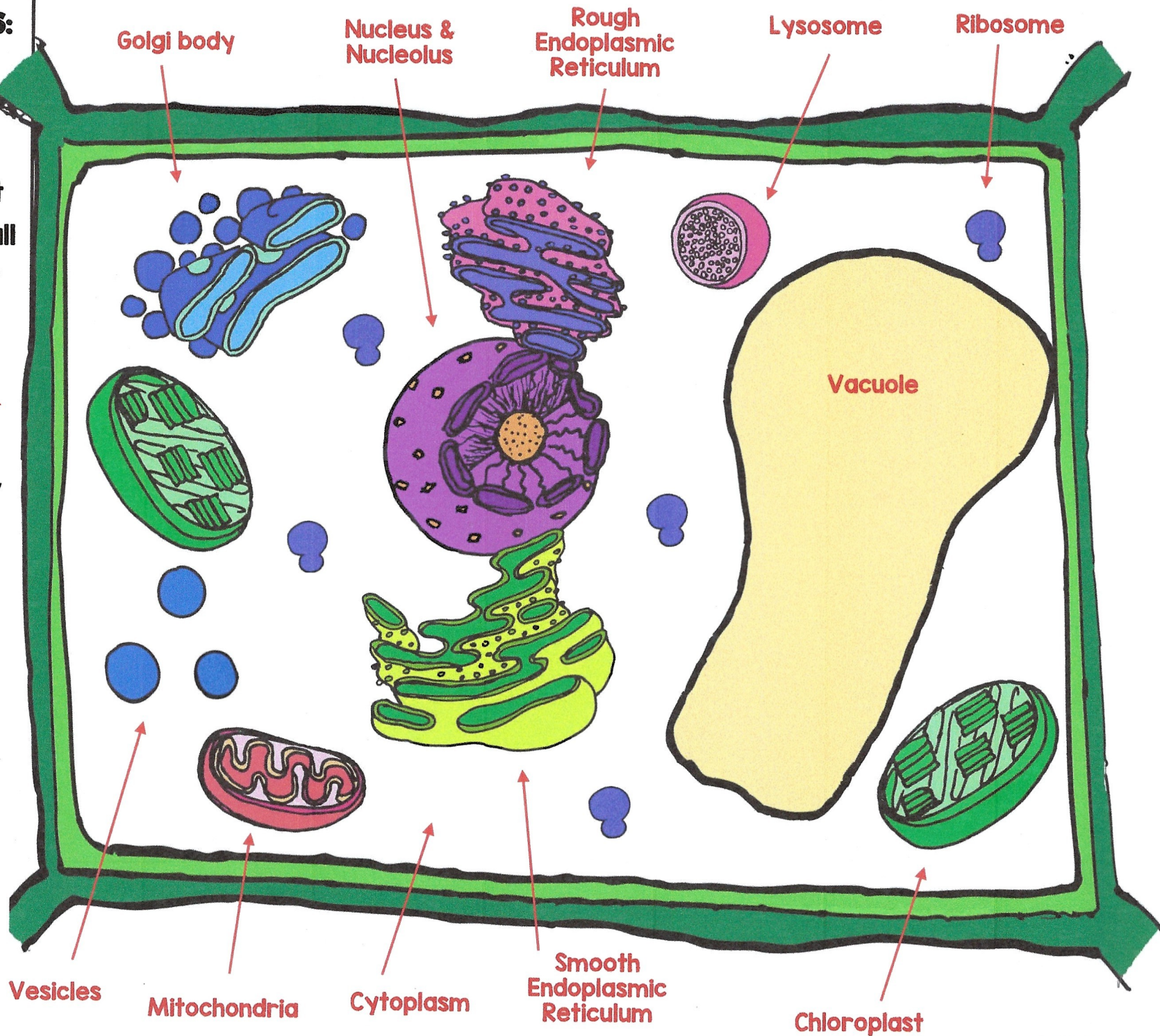
Draw the outer boundary of the cell. It should look something like this:



Then, label the organelles.

Extra Parts:

→ The internal environment of the cell contains a stable, jelly-like substance called the cytoplasm.



SUM IT UP

Can you remember the organelle that each city analogy represents?

KEY



Write the name of the organelle next to each analogy picture along with a brief description of the organelle's function.

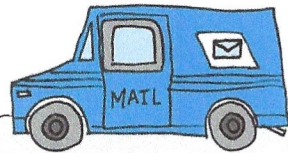
WORD BANK
nucleus
nucleolus
cell membrane
mitochondria
endoplasmic reticulum
ribosomes
Golgi body
proteins
vesicles
vacuole
lysosome
cell wall
chloroplast



Golgi body
Packages proteins



Nucleus
The control center



Vesicles
Transport materials



Proteins
The products of the cell



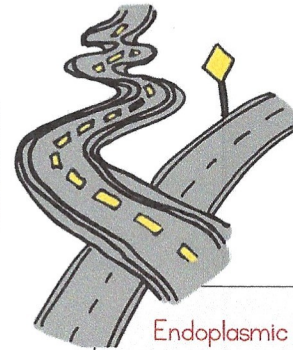
Nucleolus
Makes ribosomes and their rules/functions



Mitochondria
Make energy



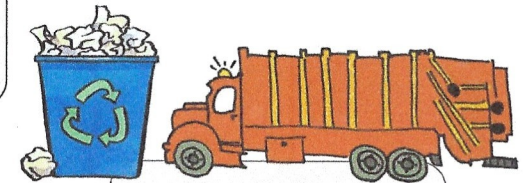
Vacuoles
Store food and water



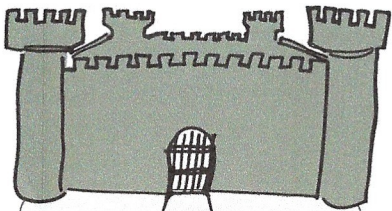
Endoplasmic Reticulum (ER)
Transports proteins



Ribosomes
Make proteins



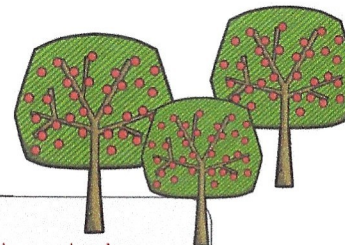
Lysosomes
Digest waste



Cell wall
Provides support and protection



Cell membrane
Regulates what goes in and out



Chloroplasts
Convert sunlight into food

How are you feeling about the basics of Eukaryotic Cell Organelles? Circle one:

