

# March 10, 2017

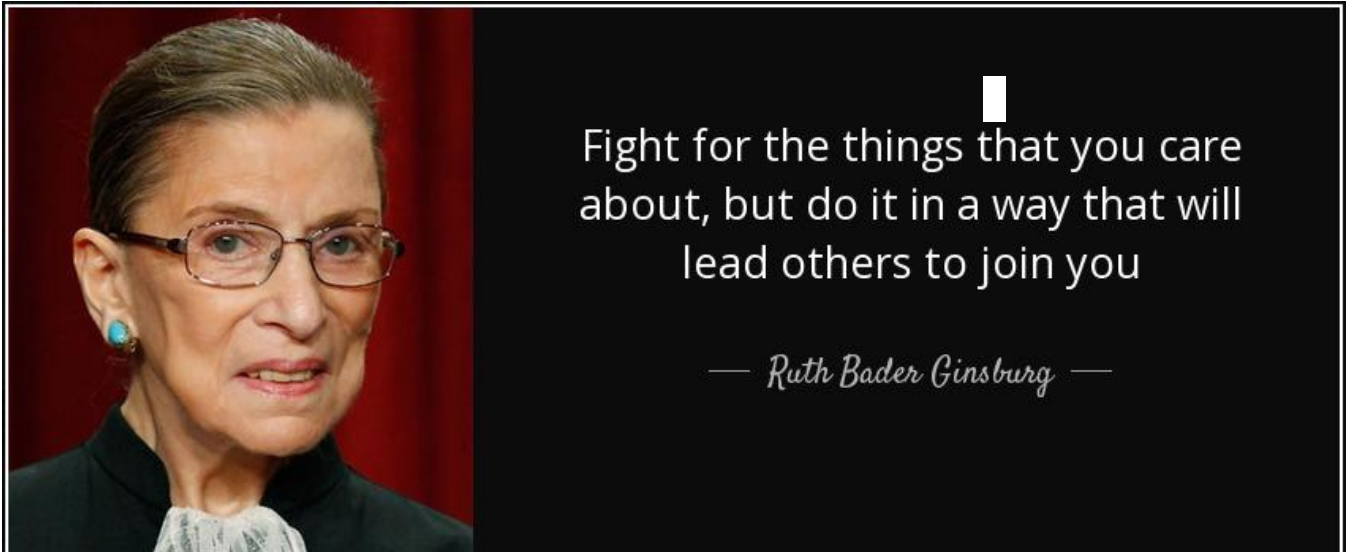
## Aims:

- ✓ **SWBAT** explain the function of the cell membrane, nuclear membrane, nucleus, and cytoplasm.

## Agenda

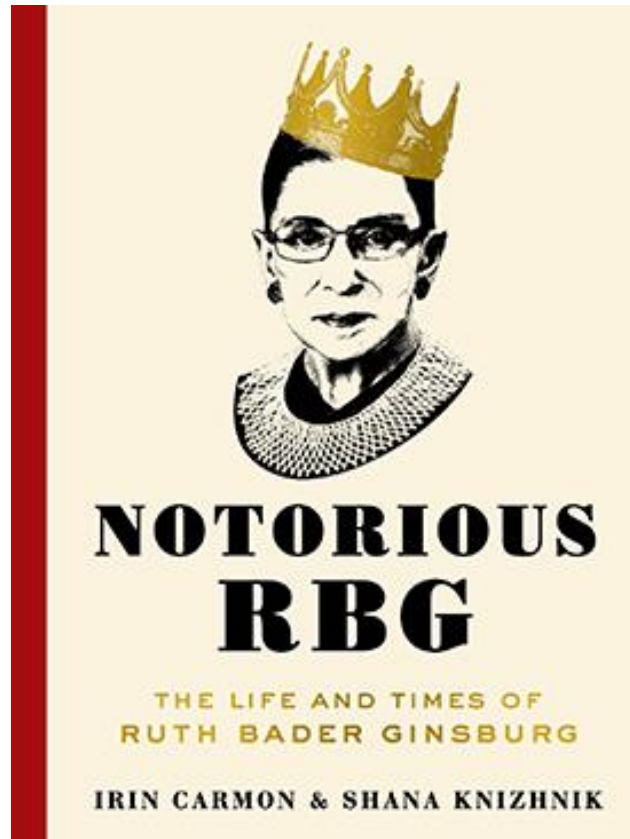
1. Do Now
2. Class Notes
3. Guided Practice
4. Independent Practice
5. Practicing our AIMS:
  - ✓ C.2-Organelles

*How will you help our class earn all of our S.T.R.I.V.E. Points?*



**This is a QUICK unit!**  
**Unit Test is in 7 days!**

## JUSTICE RUTH BADER GINSBURG: Supreme Court Justice (1933–)




Ruth Bader Ginsburg graduated from Columbia Law School, going on to become a staunch courtroom advocate for the fair treatment of women and working with the ACLU's Women's Rights Project.

She was appointed by President Carter to the U.S. Court of Appeals in 1980 and was appointed to the Supreme Court by President Clinton in 1993, the second woman ever.

The women of the Supreme Court are the subjects of a new painting at the Smithsonian's National Portrait Gallery in Washington, D.C.

The portrait features the high court's current female justices, Sonia Sotomayor, Ruth Bader Ginsburg and Elena Kagan, as well as Sandra Day O'Connor, who retired from the bench in 2005. O'Connor made history in 1981 when she became the first woman ever named to the Supreme Court.



<p><b>SCIENCE 8</b> Organelles C.2</p>	<p>Name: _____ Date: _____ Homeroom: _____</p>	<p>Cellular Mitosis</p> 
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**OBJECTIVES:** By the end of class, students will be able to...

- ✓ **SWBAT** explain the function of the cell membrane, nuclear membrane, nucleus, and cytoplasm.

**DO NOW**

1. What are the 3 parts of the Cell Theory?

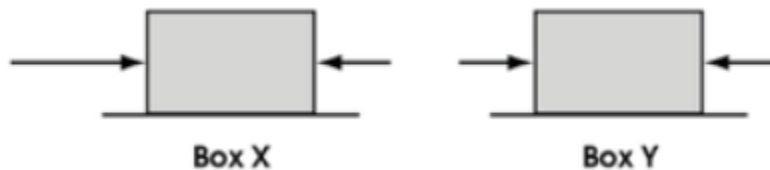
- i. \_\_\_\_\_  
\_\_\_\_\_
- ii. \_\_\_\_\_  
\_\_\_\_\_
- iii. \_\_\_\_\_  
\_\_\_\_\_

2. Which scientist is credited for observing the first **living** cells? (circle one)  
Leeuwenhoek / Hooke

3. Which scientist is credited for naming 'cells?' (circle one) Leeuwenhoek / Hooke

**CONCEPT REVIEW:** Only 64% of us understand acceleration well enough to apply it!

4. Horizontal forces act on two boxes, initially at rest, as shown. The magnitude and direction of the horizontal forces are shown.



What happens to Box X and Box Y as a result of the forces?

# CLASS NOTES

## Cell Theory Rap

Listen close to the story I tell.  
 It's the rapping story of the living cell.  
 It's a happy tune that's sorta cheery  
 About a real tough topic called: **CELL THEORY**

All animals, plants and protists too,  
 Are made of cells with different jobs to do  
 They're the basic units of all organisms  
 And by now you've got the rhythm.

It all started with a man named Hooke  
 Who at some cork cells took a look  
 He used a scope and took his time  
 cells are small and thinner than a dime.

FREEZE 1,2,3,4

Now, you're ready to learn some more!  
 The living cell has many parts,  
 And you must know each one by heart.

Like the farmer in the dell  
 The **NUCLEUS** controls the cell.  
 He ties his gates with lots of rope  
 Protect'in his farm like the (NUCLEAR) **ENVELOPE**

Around the cell, you'll find a "skin,"  
 The **CELLULAR MEMBRANE** holds the whole cell in  
 But the jobs not simple there's no doubt,  
 It lets some things in and out.

Now don't go loosin your enthusiasm  
 You've yet to hear bout **CYTOPLASM**  
 You'll find it gell'in in the cell  
 But in the Nucleus it doesn't dwell.

**LYSOSOMES** are the cells own maid.  
 Cleaning up so they get paid.  
 Breaking down the food and waste,  
 Even Lysol can't replace.

And don't forget those **RIBOSOMES**  
 This is where protein makes a home  
 They're tinier than a baby flea  
 So get your microscope to see

And just when you think it's too much fun.  
 Along come **ENDOPLASMIC RETICULUM**  
 These tubelike structures serve as trucks  
 To move things around and not get stuck

The cell has its very own postal system  
 Sending material - you can't miss 'em  
 It's the **GOLGI APPARATUS**  
 Making updates to the cell's status.

Have you ever seen doughnuts without holes?  
 In a cell, they're called **VACUOLES**.  
 They're filled with stuff like H<sub>2</sub>O  
 And they carry food so the cell can grow.

And last but not the very least  
 Is a rod-shaped cellular beast!  
 The **MITOCHONDRIA** stores the energy swell  
 It's the powerhouse of the living cell

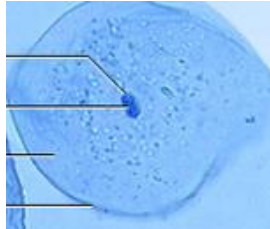
Now **CCA**, get to know this well  
 It's fabulous story of the living cell!

Name of Organelles	Function of Organelles

# TALKIN' THE TALK

→ ORGANELLE: \_\_\_\_\_

- Each kind of organelle has a different structure and function within a cell.



→ CELL MEMBRANE: \_\_\_\_\_

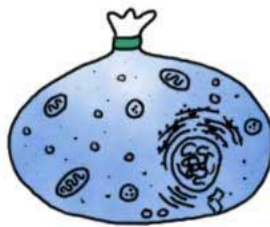
Cell membrane = \_\_\_\_\_

- Main function of the cell membrane: \_\_\_\_\_
- Semi-permeability of the cell membrane

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



- If cell membrane wasn't permeable, the cell would die. Good things couldn't come in and bad things couldn't go out.
- If the cell membrane were fully permeable, the cell would also die. (Good things would get out, bad things would get in)



→ CYTOPLASM: \_\_\_\_\_

Cytoplasm = \_\_\_\_\_

- Function of cytoplasm: \_\_\_\_\_



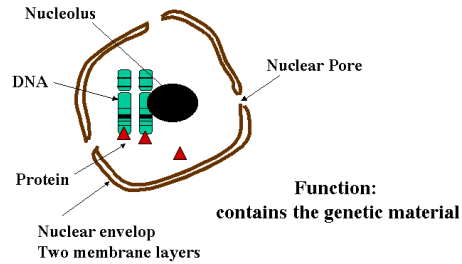
→ **NUCLEAR MEMBRANE:** \_\_\_\_\_

**Nuclear membrane** = \_\_\_\_\_

○ Function of the Nuclear Membrane: \_\_\_\_\_



### The nucleus



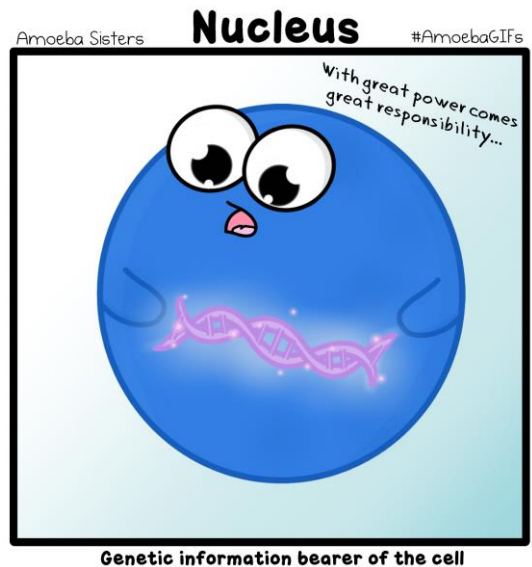
→ **NUCLEUS:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

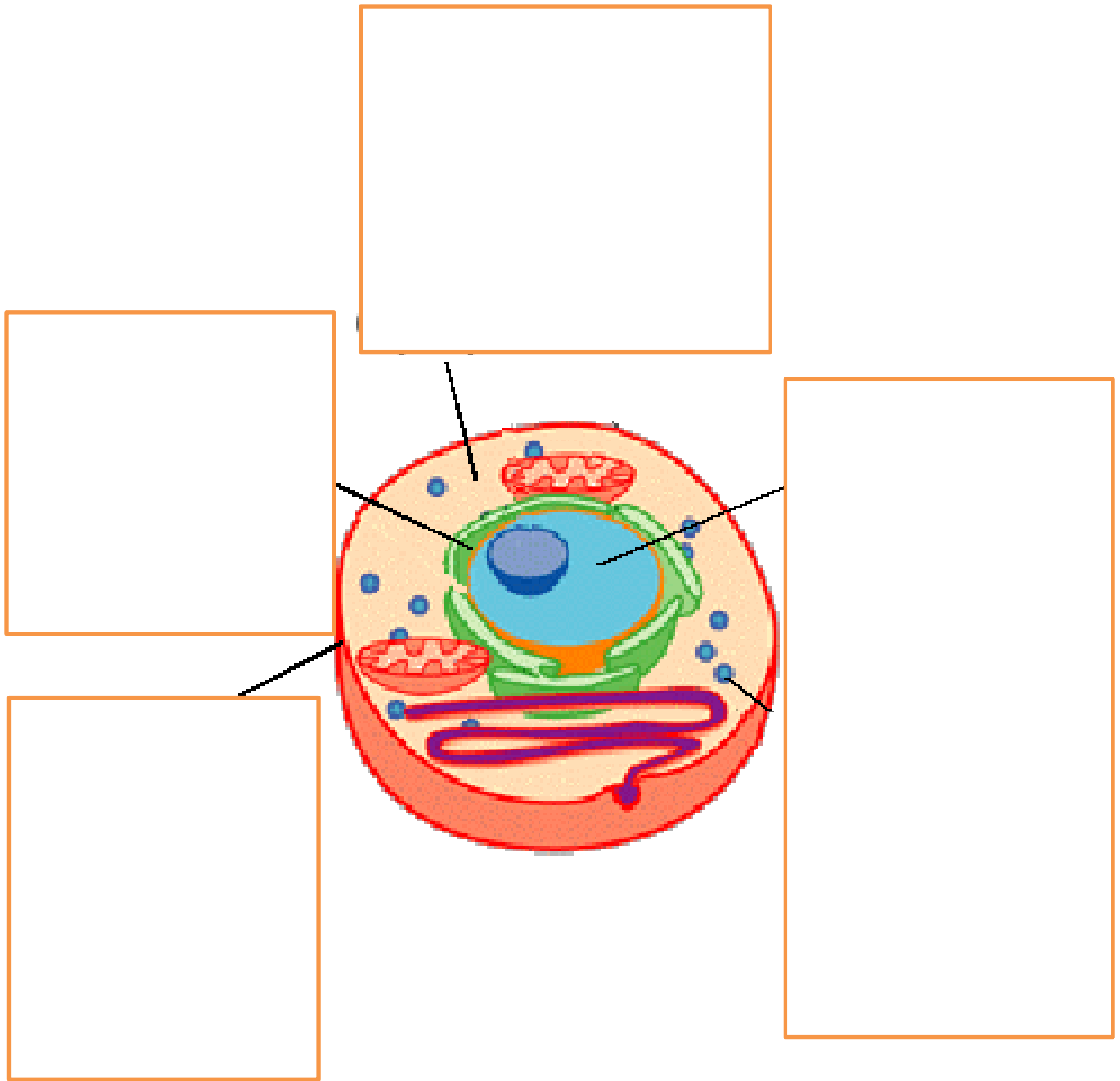
**Nucleus** = \_\_\_\_\_

○ Functions of the nucleus:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



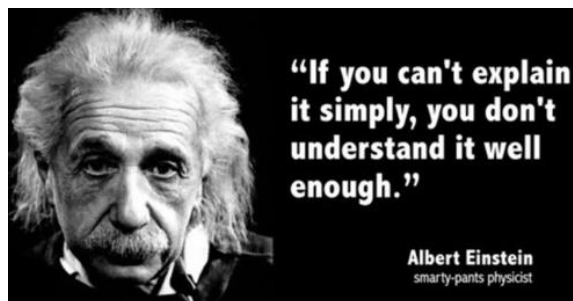
# GUIDED PRACTICE



## INDEPENDENT PRACTICE

**Directions:** For each key term, explain the “big idea” to a kindergartener. Then, draw a picture to illustrate the word.

Term	Concept	Picture
ORGANELLE		
CELL MEMBRANE		
CYTOPLASM		
NUCLEAR MEMBRANE		
NUCLEUS		





**Directions:** Match the function with the correct organelle.

\_\_\_\_ 1. Cell Membrane

A. Controls what goes into and out of the nucleus.

\_\_\_\_ 2. Nucleus

B. Holds the organelles in place.

\_\_\_\_ 3. Nuclear Membrane

C. Controls what goes into and out of the cell.

\_\_\_\_ 4. Cytoplasm

D. Makes ribosomes and controls the cell

5. Describe where the nucleus is located and its function.

6. Describe the function of the cytoplasm

7. Identify the organelle that controls things from going into and out of the cell.

9. Compare and contrast the cellular and nuclear membrane

**Directions:** Read the following passage and answer the questions.

### Cells

Cells are a part of every living thing. Just like atoms are the building blocks of matter, cells are the building blocks of living things. Some living things are made of only one cell. Most of the germs that can make us sick are made of only a single cell. Other living things are made of many, many cells. Trillions of cells come together to build a human being! Most cells are very small. They are so small that you cannot see them without a microscope.

There are a few cells, though, that are big enough to easily see. An egg, like you might eat for breakfast, is one very large cell. There are many different kinds of cells. Plant cells are different from the cells of animals. Some cells are independent. Some cells work together to perform a job. Some cells can move. Some cells can glow in the dark! Each type of cell is different, but there are some things that all cells have in common. All cells are covered by a membrane that helps to protect the cell and hold it together. All cells are able to reproduce. All cells can take in nutrients and turn them into energy. All cells respond to changes inside and around them. Cells are alive!

**Questions** Circle the correct answer.

1. What are cells?
  - A. the building blocks of matter
  - B. cells are made of atoms
  - C. the building blocks of living things
  - D. cells are all the same
2. \_\_\_\_\_ is made up of only a single cell.
  - A. A rock
  - B. An egg
  - C. A human
  - D. all of the above
3. \_\_\_\_\_ of cells come together to build a human being.
  - A. Thousands
  - B. Trillions
  - C. Billions
  - D. Millions
4. All cells \_\_\_\_\_.
  - A. can take in nutrients and turn them into energy
  - B. can move
  - C. work together to perform a job
  - D. all of the above
5. \_\_\_\_ (True or False) Most of the germs that make us sick are made of only one cell.
6. \_\_\_\_\_ (True or False) Plant cells are different from animal cells.

# Science 8



## C.2: Organelles

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Homeroom: \_\_\_\_\_

Quick Notes:

### SKILL SNAPSHOT

Like A Scholar?

Yes No

Redo?

Yes No

**Directions:** Support your selection by jotting down your reasoning.

Question	Reasoning
<p>1. The nucleus is</p> <ul style="list-style-type: none"> <li>A. The control center for the entire cell.</li> <li>B. The center where energy is made.</li> <li>C. The organelle that transports materials.</li> <li>D. The screen that controls what enters and exits the cell.</li> </ul>	
<p>2. The nuclear membrane</p> <ul style="list-style-type: none"> <li>A. Membrane that covers the entire cell.</li> <li>B. Membrane that surrounds the nucleus.</li> <li>C. Membrane that surrounds both the nucleus and mitochondria.</li> <li>D. Membrane that surrounds the cytoplasm.</li> </ul>	
<p>3. Cell membrane:</p> <ul style="list-style-type: none"> <li>A. Membrane that covers the entire cell.</li> <li>B. Membrane that controls what enters and exits the nucleus</li> <li>C. Membrane that surrounds the nucleus.</li> <li>D. Membrane that surrounds both the nucleus and mitochondria.</li> </ul>	
<p>4. Cytoplasm:</p> <ul style="list-style-type: none"> <li>A. Jelly-like substance that fills inside the cell.</li> <li>B. Jelly-like structure that surrounds and protects the cell.</li> <li>C. Jelly-like structure that controls the entire cell.</li> <li>D. Jelly-like substance that provides food to the cell.</li> </ul>	

**Directions:** Describe the function of the organelle and connect it to a real world analogy.

5. Cytoplasm:

6. Cell Membrane:

7. Nucleus

8. Nuclear membrane

**CONCEPT REVIEW**

9. An object must be accelerating if it is moving \_\_\_\_\_.

Select the **two** correct phrases that can finish the above statement.

- A. with changing speed
- B. extremely fast
- C. with constant velocity
- D. in a circle
- E. downward