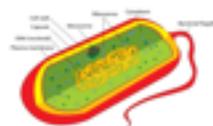
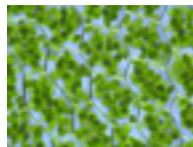


## CELL and cell structure App. Worksheet



### Introduction:

We are going to explore cells using an app. on the ipads to learn about and explore cells in more detail...get ready to be amazed!

**Pre-App Questions:** use your notes from yesterdays class to answer the following questions:

1. All \_\_\_\_\_ things are made up of \_\_\_\_\_.
2. \_\_\_\_\_ are the \_\_\_\_\_ of \_\_\_\_\_ / \_\_\_\_\_ in all \_\_\_\_\_ things.
3. All cells have a \_\_\_\_\_ and \_\_\_\_\_.
4. Two types of living organisms are \_\_\_\_\_ and \_\_\_\_\_.

Open the **CELL and Cell Structure** app. on your iPad

Click on **All About Cells**

Click on **What is a Cell?**

Click on the image of a white blood cell; a text box should appear; answer the following questions:

1. Cells are the \_\_\_\_\_ and \_\_\_\_\_ unit of living matter...smallest \_\_\_\_\_ of \_\_\_\_\_.

Swipe to the right; tap on the image of the amoeba:

2. A **single cell** contains all the necessary \_\_\_\_\_ to \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.

Swipe the bar that says **Amoeba** over to where it says **Bacteria**..

3. Name one difference you can observe between the Amoeba and the Bacteria cells: \_\_\_\_\_  
\_\_\_\_\_

Swipe from right to left to the image of the guy in the tighty-whiteys; tap on the right side of the screen:

4. Multicellular organism contains \_\_\_\_\_ that are \_\_\_\_\_; they also complete \_\_\_\_\_ work for the \_\_\_\_\_ to \_\_\_\_\_.
5. List two examples of a multicellular organism: \_\_\_\_\_ and \_\_\_\_\_.

**Click** on the top right three bars and go to **What are the two types of cells?**

1. Cells are defined to be \_\_\_\_\_ and \_\_\_\_\_.

**Tap** on the image of the Red Blood Cells

2. Eukaryotic cells can be \_\_\_\_\_ - \_\_\_\_\_ or \_\_\_\_\_ (\_\_\_\_\_)

3. Contain a \_\_\_\_\_ that holds \_\_\_\_\_.

**Swipe** the bottom bar from Eukaryotic to Prokaryotic cells.

4. Prokaryotic cells are \_\_\_\_\_ - \_\_\_\_\_ and \_\_\_\_\_ cells.

**Click** on the top right three bars and go to **Why are Cells so Small?**

**Tap** on the illustration of the onion cells

1. Cells must take in \_\_\_\_\_ and \_\_\_\_\_ through the \_\_\_\_\_  
\_\_\_\_\_ (outer surface area).

2. As a cell gets \_\_\_\_\_, it needs more \_\_\_\_\_ and produces more \_\_\_\_\_.

3. When the cell reaches a certain \_\_\_\_\_, the cell must \_\_\_\_\_ into \_\_\_\_\_  
cells to \_\_\_\_\_, or else it will \_\_\_\_\_.

### Why are Cells so Small ACTIVITY!!!

1. In order to get food and nutrients into a cell, the glucose and other nutrients must pass through the cell membrane by going through a protein door (channel proteins). The spoon will represent your channel protein, and as you scoop sand into your cell, imagine you are filling the cell up with the glucose, nutrients, water, and oxygen that a cell needs.
2. A healthy cell, once it has broken down this food, will then create waste like carbon dioxide, water and other products. Some of these waste products are not food for the cell to keep inside of it, and so a cell must flush them out.
3. During this activity you will have thirty seconds, starting with your "large cell" container, and in those thirty seconds you will spoon sand into the container until it is full.
4. Once the container is full you will then pour the sand back into the bowl and start over filling container again.
5. Your partners job is to count how many times you are able to fill up and pour out your "cell container" in 30 seconds.
6. You will record this number in your data table.
7. Then your partner will carry out the experiment while you time them and count how many times they fill their container so they can record their number on the data table.
8. Once each of you has carried out the experiment on the "large cell" container, you and your partner will then repeat this procedure with the "medium cell" container, and the "small cell" container.
9. Make sure that this experiment is carried out in a controlled and clean speed so you are careful not to make a mess.
10. Clean up your lab station to the same level of cleanliness you had when you started.
11. Remember, the faster a cell can food in, and waste out, the healthier a cell will be.



## DATA TABLES:

Group Member 1 Name:

Container	# of times filled	# of times emptied	Healthiness of Cell (1-5 scale)
"Large Cell"			
"Medium Cell"			
"Small Cell"			

Group Member 2 Name:

Container	# of times filled	# of times emptied	Healthiness of Cell (1-5 scale)
"Large Cell"			
"Medium Cell"			
"Small Cell"			

### Healthiness of Cell Scale:

1	2	3	4	5
Not healthy; can't complete one cycle in 30 seconds; seriously needs to divide or will die.	Barely alive; can only complete once cycle in 30 seconds; should consider dividing.	Average (MTS); can complete 2-3 cycles in 30 seconds; okay enough I guess.	Fit; this cell is functioning at a decent level - 4-6 cycles in 30 seconds; doing good.	Amazing/Jacked; cell completed 7 or more cycles in 30 seconds and is a champion.

### Post-Lab Questions:

- Describe the two reasons why cells must divide when they become too large:
  - a...
  - b...
- If the three "cell containers" were really cells, which one do you think should divide, and why do you think this?