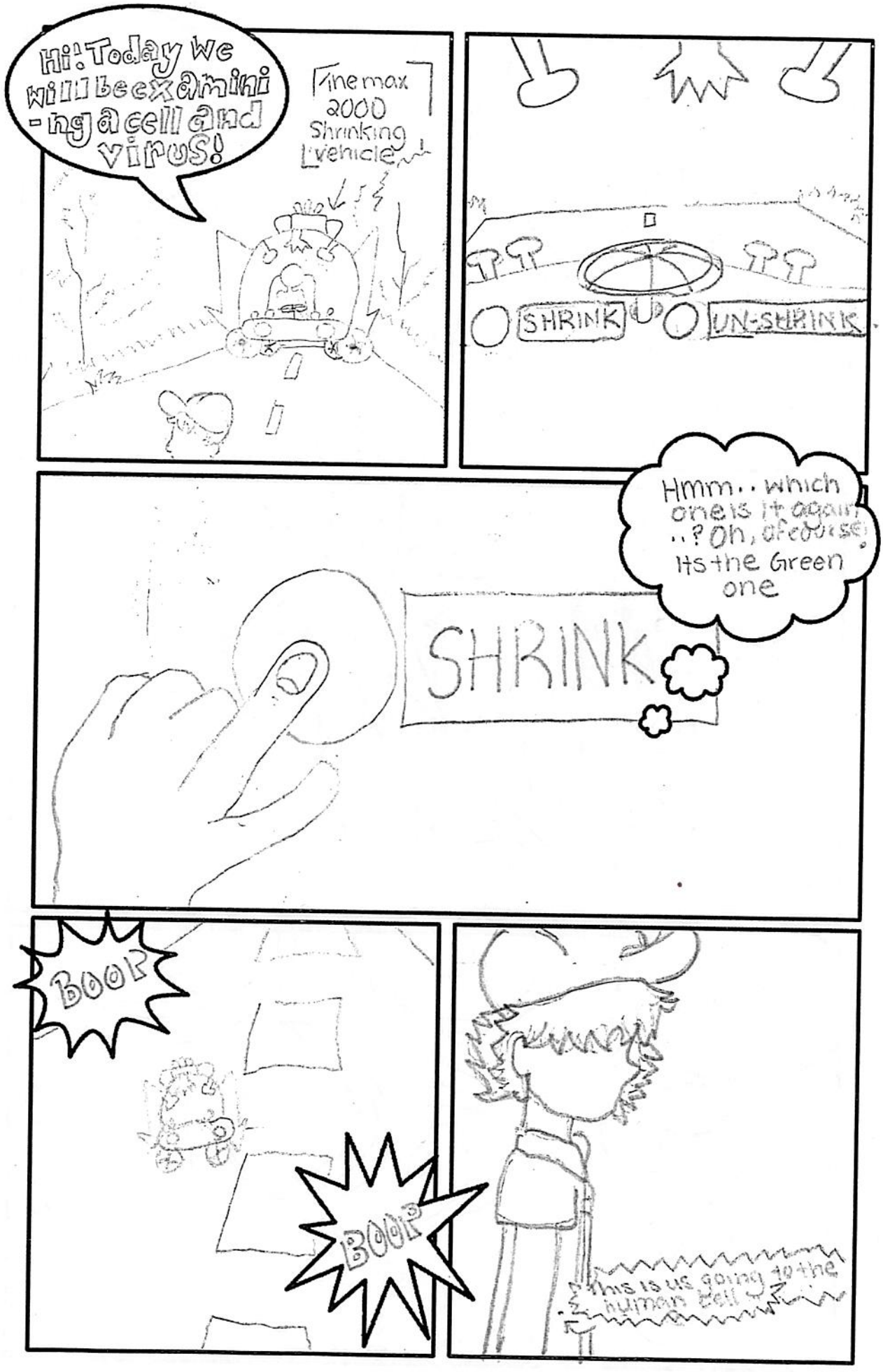
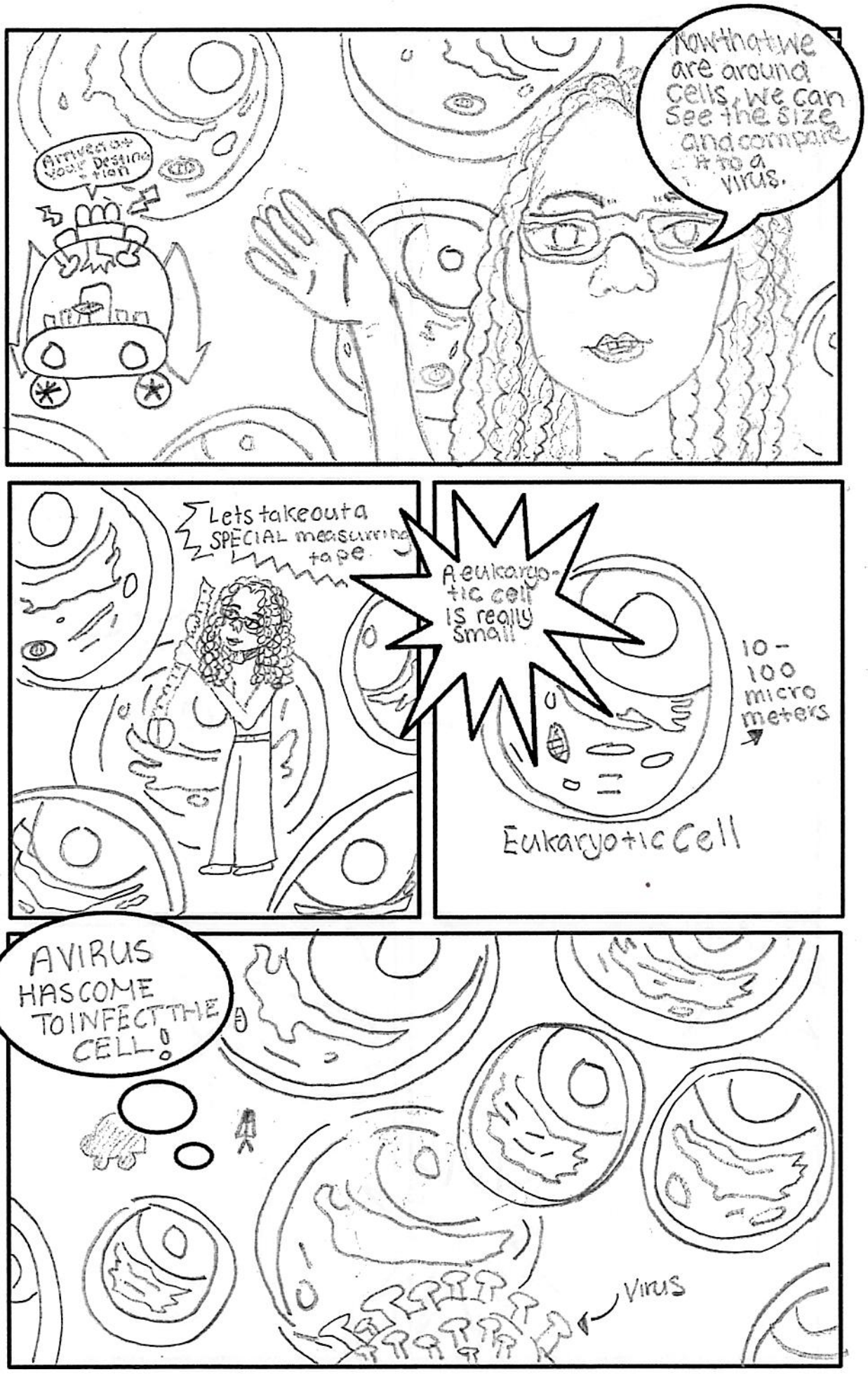
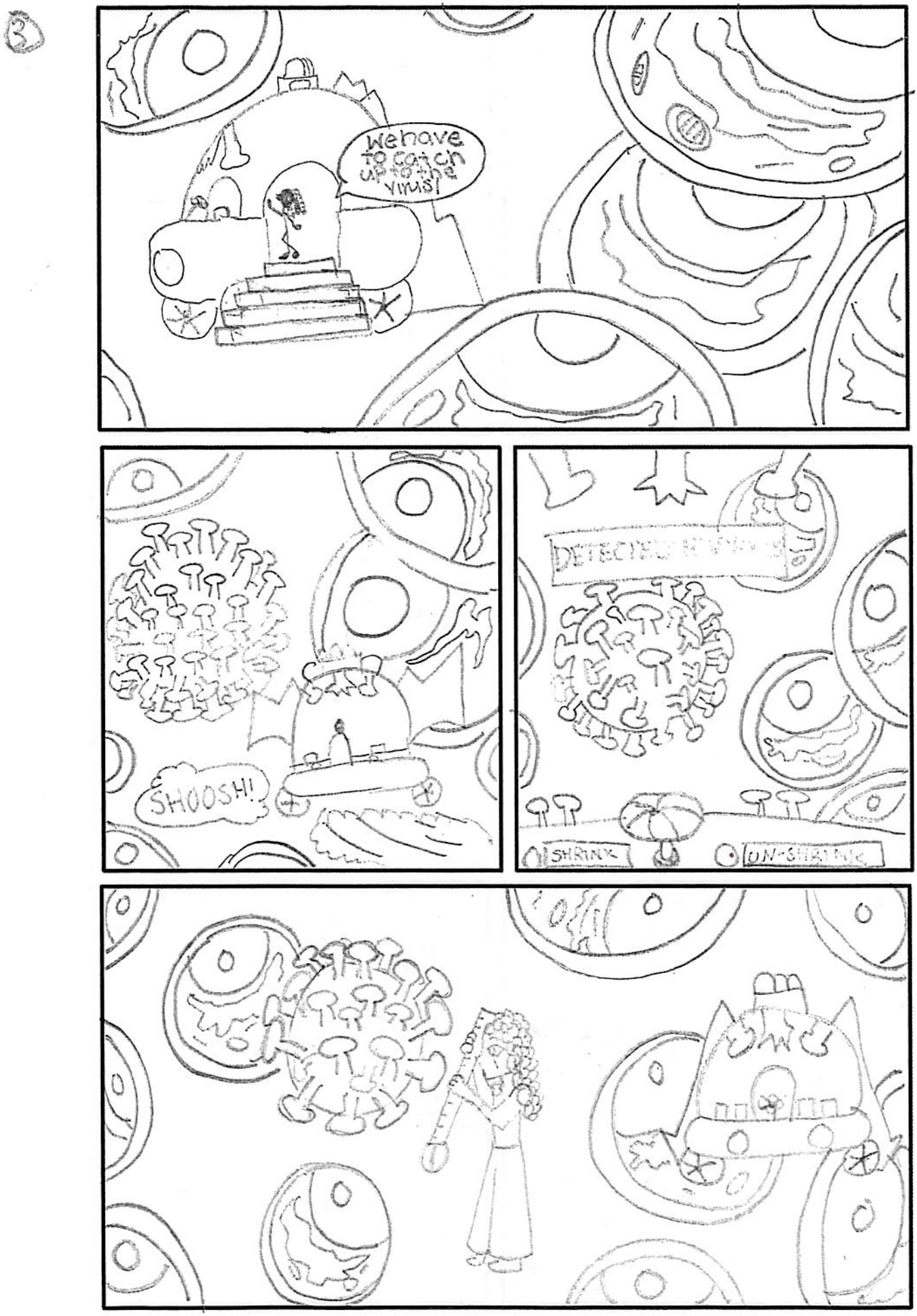

Hi! Today we will be examining a cell and virus!
The max 2000 Shrinking Vehicle
SHRINK
UN-SHRINK
Hmm.. which one is it again..? Oh, of course! Its the Green one
SHRINK
BOOP
BOOP
This is us going to the human cell

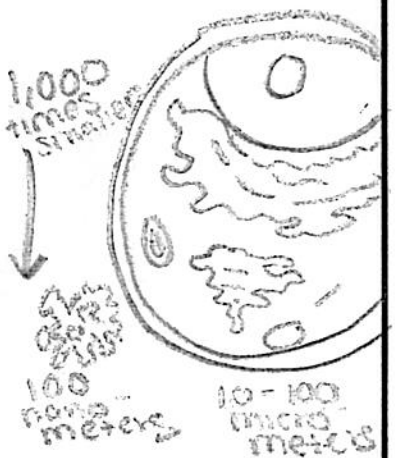

Arrived at your destination
Now that we are around cells, we can see the size and compare it to a virus.
Lets take out a SPECIAL measuring tape
A eukaryotic cell is really small
10-100 micro meters
Eukaryotic Cell
A VIRUS HAS COME TO INFECT THE CELL!
Virus


We have to catch up to the virus!
SHOOSH!
SHRINK
UN-SHRINK

4

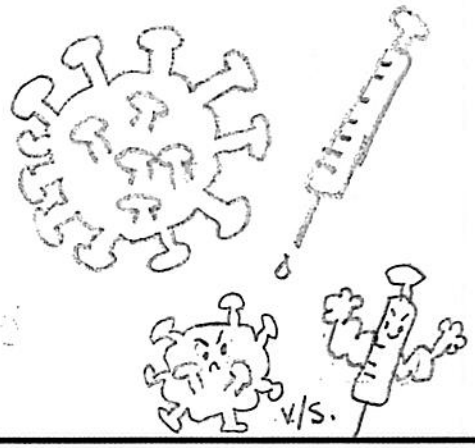
Wow! A virus is 1,000 times smaller than a eukaryotic cell!

Size comparison

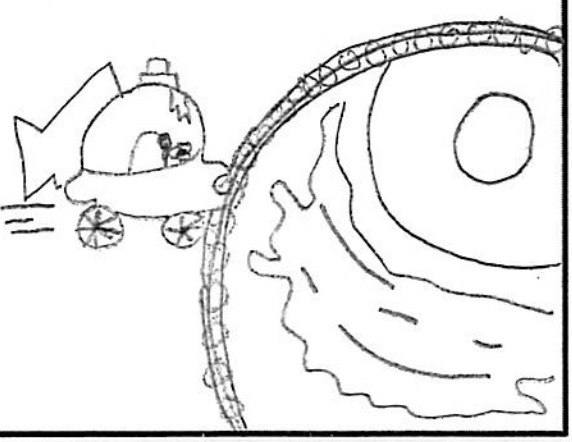


FUN FACT ABOUT ♡

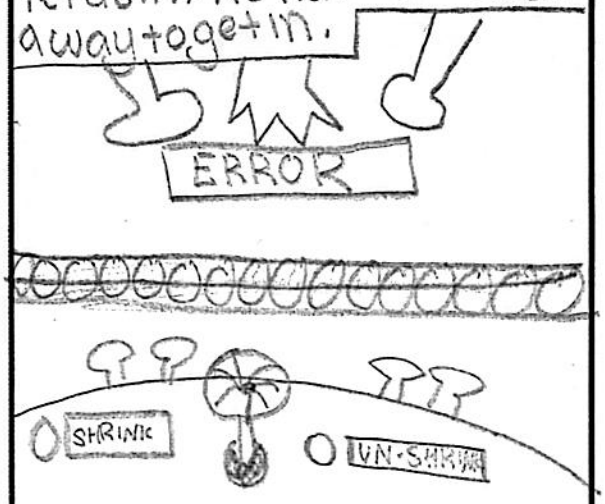
Did you know that there are different types of vaccines and one of them is called an mRNA vaccine that teaches the body to make proteins. These types of proteins fight a virus called SARS-COV-2.



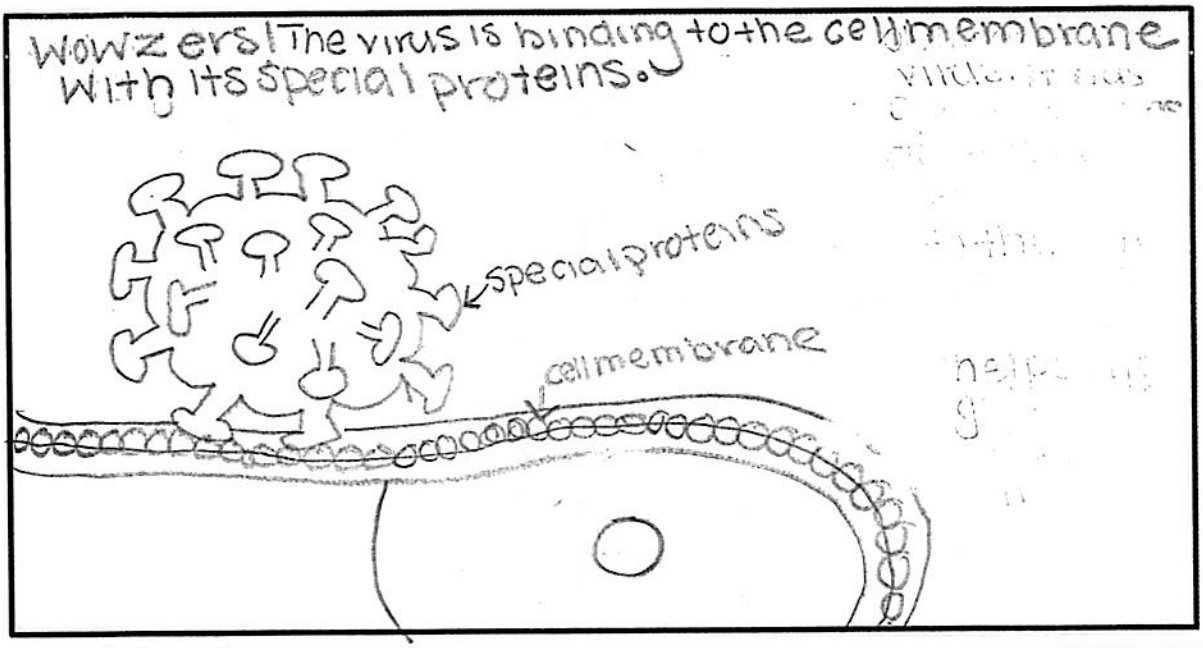
Now, lets see the components of viruses and cells.

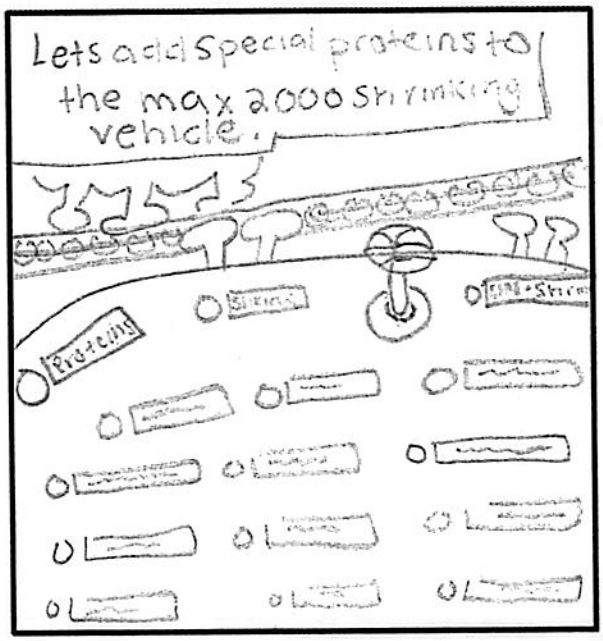


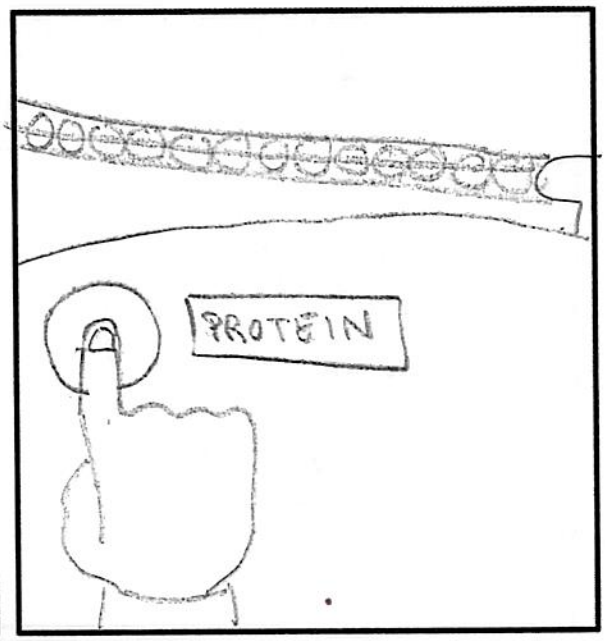
oh no! the cell membrane won't let us in. We have to find out a way to get in.

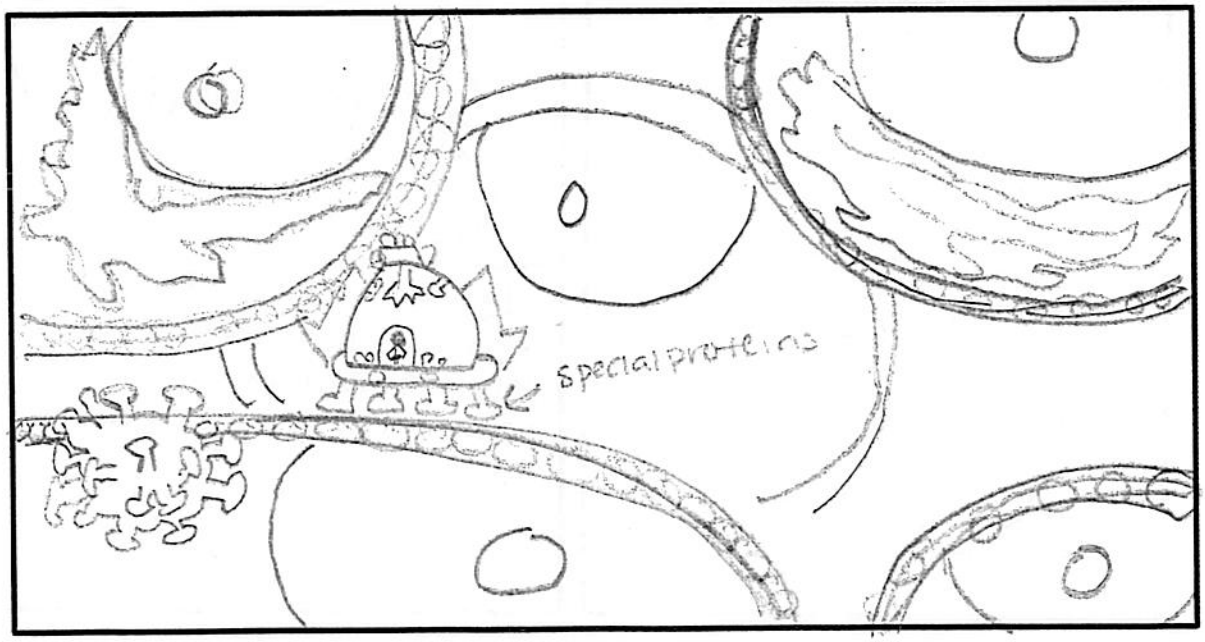


5


Wowzers! The virus is binding to the cell membrane with its special proteins.
special proteins
cell membrane

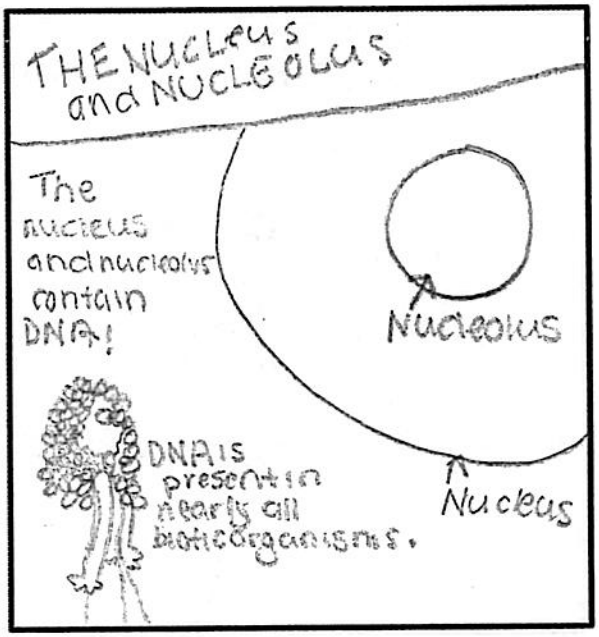

Lets add special proteins to the max 2,000 shrinking vehicle.
Protein

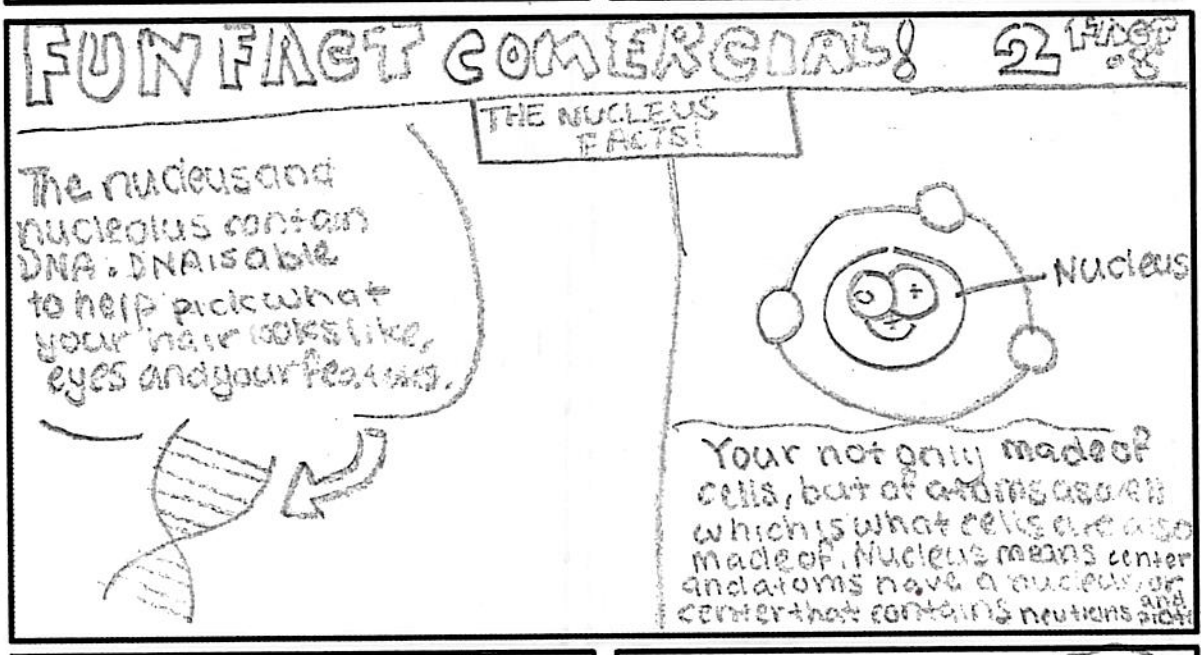

PROTEIN

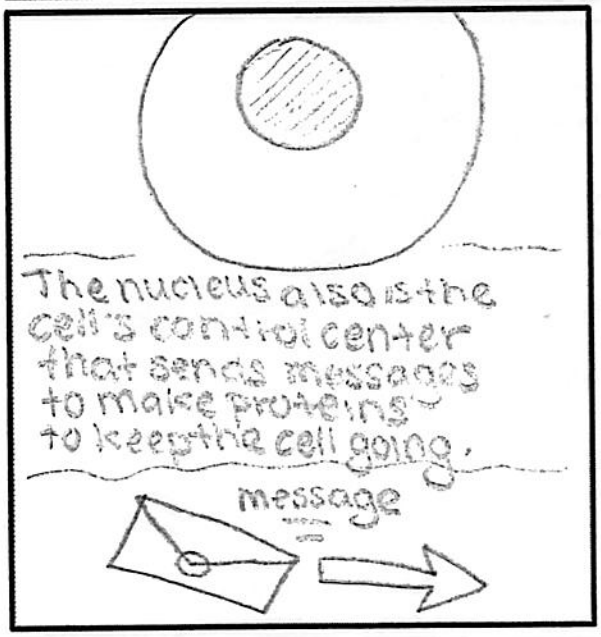

special proteins

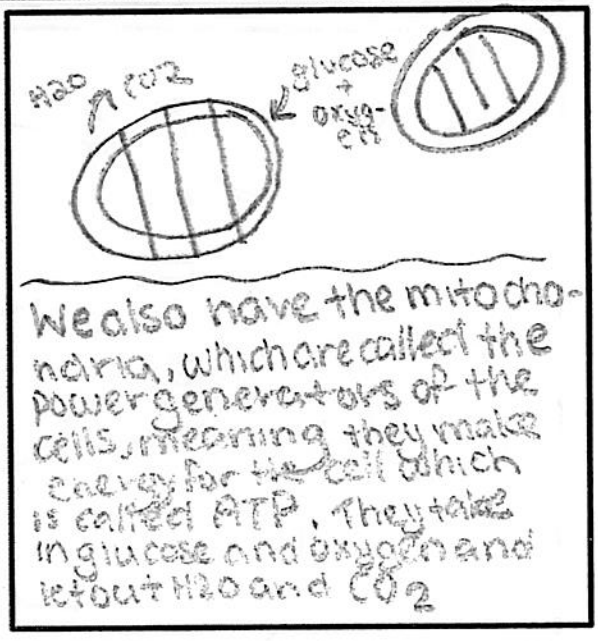
6

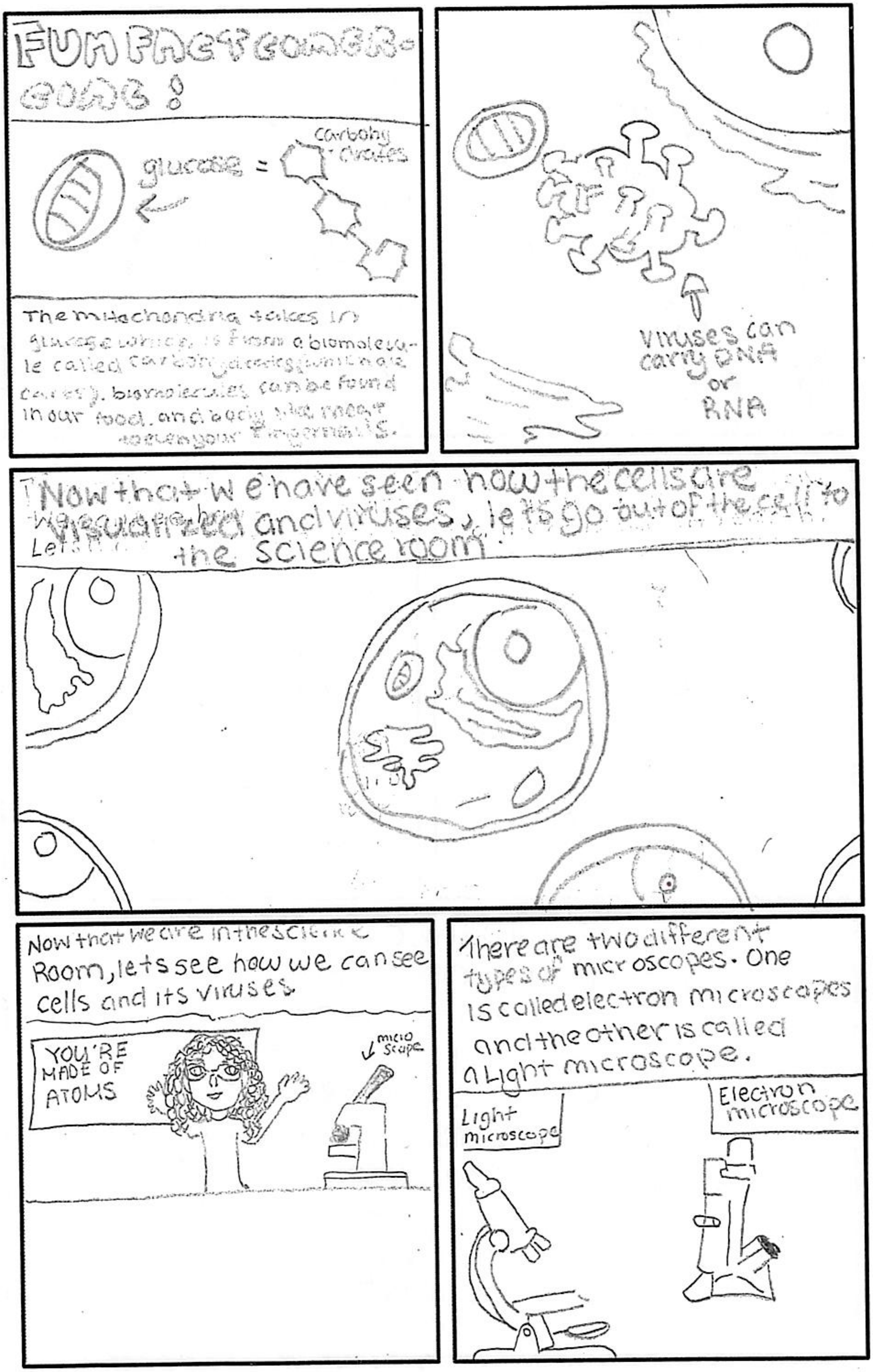

WE ARE INSIDE THE CELL!


THE NUCLEUS and NUCLEOLUS
The nucleus and nucleolus contain DNA!
Nucleolus
DNA is present in nearly all eukaryotic organisms.
Nucleus


FUN FACT COMERCIAL! 2
THE NUCLEUS FACTS!
The nucleus and nucleolus contain DNA. DNA is able to help pick what your hair looks like, eyes and your features.
Nucleus
Your not only made of cells, but of atoms as well which is what cells are also made of. Nucleus means center and atoms have a nucleus or center that contains neutrons and protons.

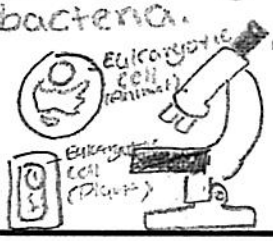

The nucleus also is the cell's control center that sends messages to make proteins to keep the cell going.
message

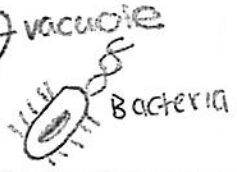

H2O
CO2
glucose + oxygen
We also have the mitochondria, which are called the power generators of the cells, meaning they make energy for the cell which is called ATP. They take in glucose and oxygen and let out H2O and CO2


FUN FACT
glucose =
carbohydrates
The mitochondria takes in glucose which is from a biomolecule called carbohydrates (which are carbs). biomolecules can be found in our food, and body like meat to even your fingernails.
Viruses can carry DNA or RNA
Now that we have seen how the cells are visualized and viruses, lets go out of the cell to the science room
Now that we are in the science Room, lets see how we can see cells and its viruses.
YOU'RE MADE OF ATOMS
micro scope
There are two different types of microscopes. One is called electron microscopes and the other is called a Light microscope.
Light microscope
Electron microscope

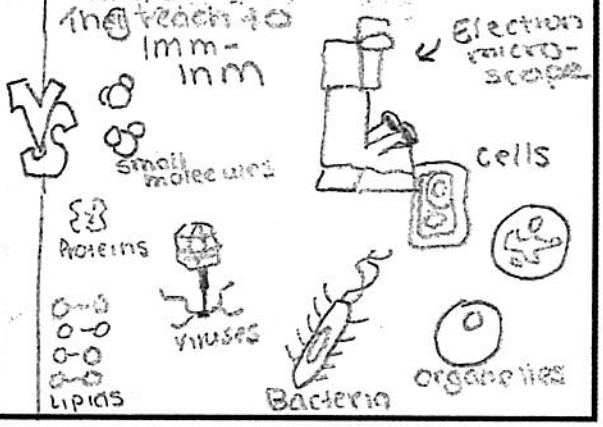
(8)

While the Light microscope can only let you see from 100μm (micrometer micron) to 1μm (micrometer micron) which are organelles, like vacuoles (organelles that store waste), Eukaryotic cells and bacteria.

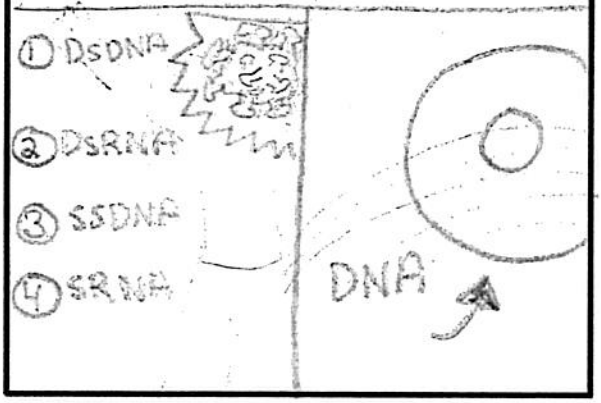




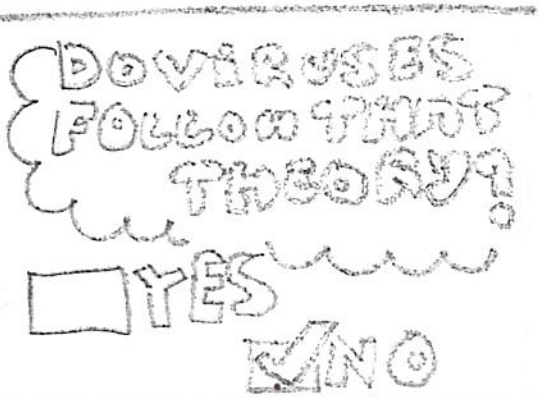
The electron microscope can also see cells, organelles, bacteria, and viruses, proteins, lipids and small molecules. They reach to 1mm-1nm



Viruses run on DNA or RNA and they have 4 categories. Cells have DNA because of its nucleus and nucleolus.



The central Dogma theory is that the genetic information of DNA is used to make proteins.



Viruses don't follow the central Dogma theory because they need to be able to make proteins with a host cell because it contains DNA. Although viruses don't follow the Dogma theory, cells do because they can make proteins themselves because they have DNA already. The cell uses process of Replication, Transcription, Translation. Also, viruses are not living because they do not contain cells which is what you need to be a biotic being. Cells are living because they themselves the cells and follow the # character is Face of like which are of them being having to have cells.