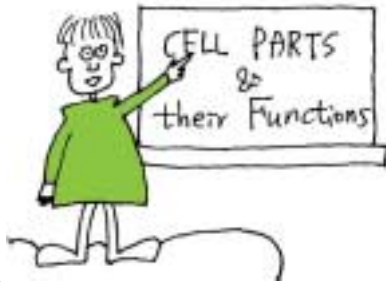


# What are cell parts and their functions?

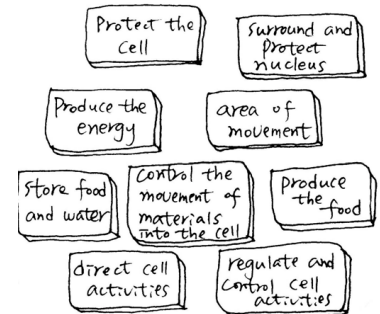
Now is the time to see what cell parts are and what function each part has.



Even if cells are very tiny, they are made of smaller parts.



And the parts do different jobs.



Let's get aboard a ship to make a journey into the cell parts. Ready?



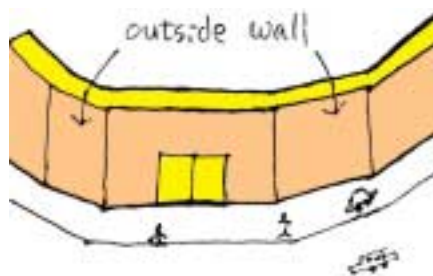
We have reached the first cell part. Can you say hello to him?



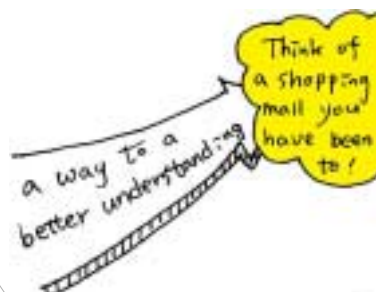
Welcome to the land of a cell. My name is cell wall. I am only in plant cells. I surround and protect the cell, and make it strong and stiff, like...



... the outside wall of a shopping mall, which provides shape and protection for it.



Have you ever been to a shopping mall before? Good! Then you can understand us more easily.



My nickname is the "Supporter and Protector". Have a nice trip!

**CELL WALL**  
= **SUPPORTER & PROTECTOR**

# What are cell parts and their functions?



Thank you. After we pass through the cell wall, we can see something similar to the cell wall. There it is. Hi!



Hi, I am cell membrane. I hold and protect the cell.



Well, I also control what substances come into and out of the cell, like an entrance you have to pass to get into the shopping mall.



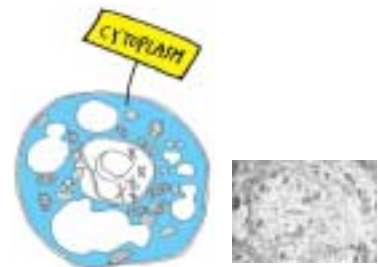
I am the "Gate of the cell".

**CELL  
MEMBRANE  
||  
GATE  
OF THE  
CELL**

Thanks. As we pass through the cell membrane, we are in quite a spacious place. His name is cytoplasm. Hi!



Hello! My name is cytoplasm. I am a watery, gel-like material in which cell parts move and cell activities take place, like ...



... the hallways of the mall where people move.



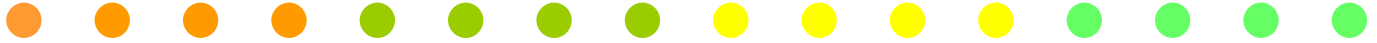
I am the "Area of Movement".

**CYTOPLASM  
||  
AREA OF  
MOVEMENT**

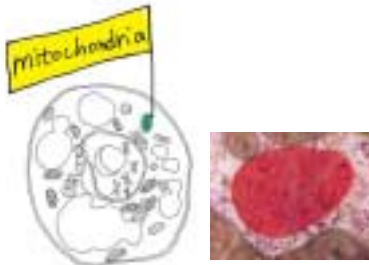
Thank you, cytoplasm. Now, we can meet mitochondria inside the cytoplasm.



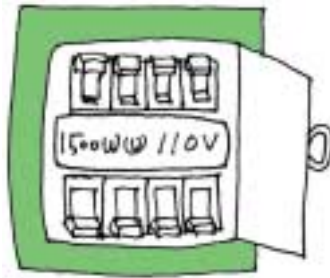
# What are cell parts and their functions?



Hi, my name is mitochondria. I produce most of the energy for the cell, like ...



... an electrical system of the shopping mall, which supplies electrical energy.



I am the "Powerhouse of the Cell".

**MITOCHONDRIA  
II  
POWERHOUSE  
OF THE  
CELL**

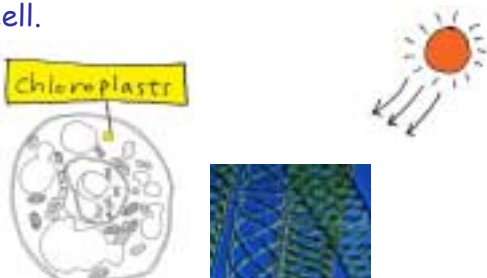
Are you understanding the parts well? You may more easily understand them when you are trying to match the cell parts with what you already know, like the shopping mall you have been to.



Ok. Let's start again. In the cytoplasm, we can also meet chloroplasts. Hi.



Hi! I am chloroplasts. I am only in plant cells, like the cell wall. I contain chlorophyll, which captures energy from sunlight and uses it to produce food for the cell.



I am like a pizza shop in the mall that makes food.



So my nickname is "Food Producers".

**CHLOROPLASTS  
II  
FOOD  
PRODUCERS**

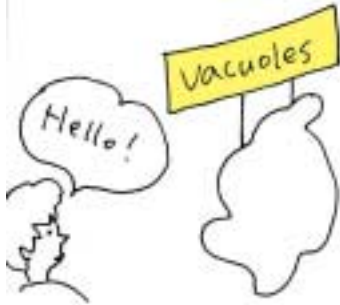




# What are cell parts and their functions?



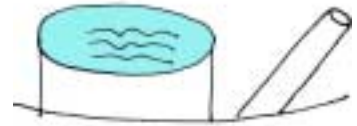
Thanks, chloroplasts.  
Near chloroplasts, we can  
easily find vacuoles. Say  
Hello!



Hello! My name is vacuoles.  
I store food, water, and  
chemicals, like ...



... water tank and pipes of  
the mall, which store water.



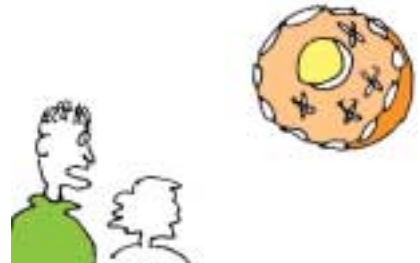
My nickname is  
"Storage Tanks".  
Enjoy the rest of your  
trip!

VACUOLES  
" "  
STORAGE  
TANKS

Not yet. We have 3 more  
parts to visit.



Now, a large oval structure  
inside the cell catches our  
attention. Hi!



Hi! My name is nucleus. I  
regulate and control cell  
activities, acting like the  
"brain" of the cell, like ...

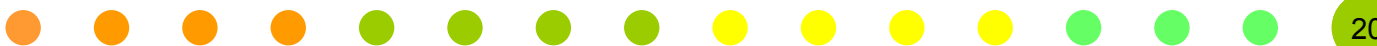


... the mall office, which  
regulates and controls  
activities of the shopping  
mall.



My nickname is "Control  
Center".

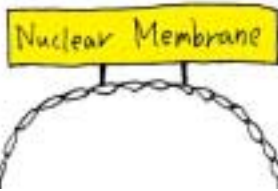
NUCLEUS  
" "  
CONTROL  
CENTER



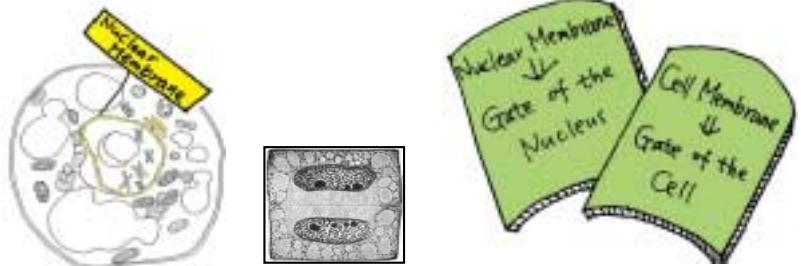
# What are cell parts and their functions?



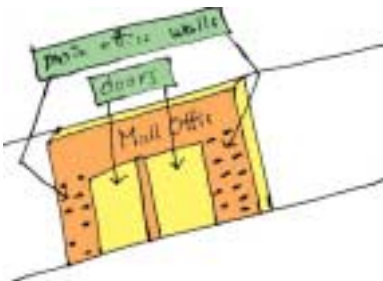
Now, we will meet the nuclear membrane. Do you remember we passed through cell membrane to come inside of the cell? The nuclear membrane is just like the cell membrane.



Yes, you are right. I, the nuclear membrane, protect the nucleus and also allow substances to pass in and out of the nucleus, as the cell membrane does the same for the cell.



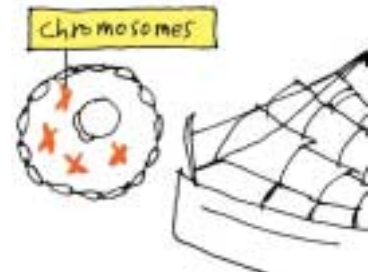
I am like the main office walls of the mall and its entrance, which protect the office and let workers in and out.



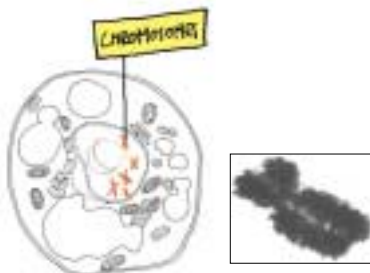
My nickname is the "Gate of the Nucleus".

**NUCLEAR  
MEMBRANE  
||  
GATE  
OF THE  
NUCLEUS**

Thanks. Now, we are almost at the end of the journey. Be careful not to avoid the delicate chromosomes. Hi!



Hi. I am chromosomes, which direct the activities of cells, like ...



... a mall office director who works in the office and directs all the activities of the shopping mall.



You can remember me as the "Director of the Cell".

**CHROMOSOMES  
||  
DIRECTOR  
OF THE  
CELL**



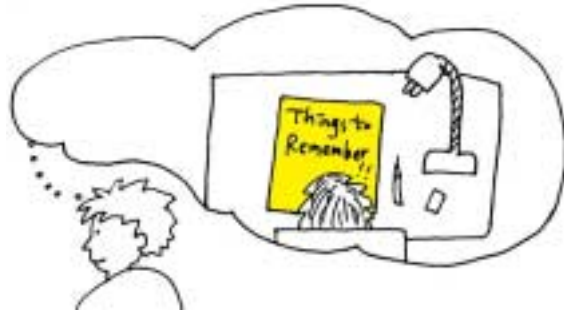
# What are cell parts and their functions?



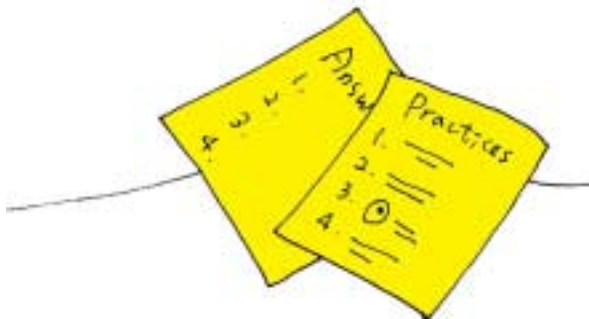
Thank you, chromosomes. We have finally completed our long journey into the cell parts. Was it fun?



Good. Now, we are home. Take a breath and read "Things to Remember!!" in the next page to summarize what you have heard from cell parts.



Then, a couple of practices and the answer key are waiting for you.



See you soon. Bye!

