**Sailing Inside Cells Questions**

1. In order to get into the plant cell, your ship has to pass through two structures. What are these two structures and what is the purpose of each?
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1. How does the nucleus “know” how to direct the cell?
2. What are ribosomes and where are they made?
3. What is the cytoplasm?
4. What is the function of mitochondria?
5. You find your ship in a maze of passageways. Where must you be and what is the function of this organelle?
6. You notice that some of the passageway walls have small, grain-like bodies. What are these and what do they do?
7. Where are the materials made in the endoplasmic reticulum transported and what happens to them there?
8. What organelle captures energy form sunlight and uses it to produce food for the cell?
9. What are vacuoles and how do they differ in plant vs. animal cells?
10. What is the function of lysosomes?
11. Explain the difference between tissues, organs, and organ systems:
12. Name two differences that bacteria cells have from plant and animal cells:
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**Looking Inside Cells Questions KEY**

1. In order to get into the plant cell, your ship has to pass through two structures. What are these two structures and what is the purpose of each?
* Cell wall – helps to protect and support the cell
* Cell membrane – controls what substances come into and out of a cell
1. How does the nucleus “know” how to direct the cell?

Inside the nucleus is a material known as chromatin that contain genetic material, the instructions for directing the cell’s functions

1. What are ribosomes and where are they made?

Ribosomes are the organelles where proteins are produced. Ribosomes are made in the nucleolus.

1. What is the cytoplasm?

The clear, thick, gel-like fluid located in the region between the cell membrane and the nucleus where many cell organelles are found

1. What is the function of mitochondria?

Convert energy in food molecules to energy the cell can use to carry out its functions

1. You find your ship in a maze of passageways. Where must you be and what is the function of this organelle?

You must be in the endoplasmic reticulum. The function of this organelle is to carry proteins and other materials from one part of the cell to another

1. You notice that some of the passageway walls have small, grain-like bodies. What are these and what do they do?

These are ribosomes. They produce proteins.

1. Where are the materials made in the endoplasmic reticulum transported and what happens to them there?

They are transported to the golgi bodies where they are packaged and distributed to other parts of the cell

1. What organelle captures energy form sunlight and uses it to produce food for the cell?

Chloroplasts

1. What are vacuoles and how do they differ in plant vs. animal cells?

Vacuoles are the storage areas of cells. Most plant cells have one large vacuole. Some animal cells do not have vacuoles while others do.

1. What is the function of lysosomes?

Lysosomes break down materials in the cell such as food particles and old cell parts

1. Explain the difference between tissues, organs, and organ systems:

Tissues are a group of similar cells that work together to perform a specific function. An organ is made of different kinds of tissues that function together. An organ system is a group of organs that work together to perform a major function.

1. Name two differences that bacteria cells have from plant and animal cells:
* Bacteria cells are usually much smaller than plant and animal cells
* Bacteria cells to not contain a nucleus (they are prokaryotic). There genetic material is found in the cytoplasm.