

Who Do Organelles Do?

Name: _____

Date: _____

Organelles in Cell Transport

- _____ organelles largely responsible for proteins moving throughout the cell
 - _____ (endoplasmic reticulum)
 - _____ Apparatus
 - _____
- The ER transports _____ products to the Golgi apparatus.
- The Golgi apparatus in turn packages _____ in other vesicles so the proteins can cross the cell membrane and leave the cell.
- The Golgi apparatus also transports _____ and creates lysosomes and vesicles involved in digestion.

Animal and Plant Cells

- While plants and animal cells share many common features and processes, they have distinct _____.
- These differences allow them to carry out _____ jobs.
- Differences
 - Vacuole are smaller in _____ cells and are larger in _____ cells
 - _____ cells have cell wall and chloroplast

Machines at Work

- _____ are constantly busy carrying out life functions.
- They are microscopic, but try to think of each organelle as an individual _____.
- Each organelle includes thousands of tiny molecular machines with multiple moving parts that work _____ to perform a specific job.
- Like machines designed by humans, these tiny molecular machines are amazingly _____.
- Solar-powered machines (_____) capture light energy and store it.
- Tiny electrical machines in nerve cells carry _____.
- Tiny mechanical machines in _____ haul cargo and even build other machines.

- Every cell in every plant and animal functions because of the combined work of these _____.
- If these machines were not _____, the cell would not be alive.
- But the complexity _____ end there.
- Most of these tiny molecular machines are made up of _____.
- _____ are required for every structure and function within the cell.
- There are tens of thousands of different kinds of proteins in each cell, each with a _____ to do.
- But before we can understand proteins, we need to know about one _____ thing.

Machines at Work: Amino Acids

- The building blocks of proteins, which are called _____.
- Think of amino acids as differently shaped, interconnecting _____.
- Instead of a typical set of blocks with about a dozen different _____.
- Imagine _____ different shapes with different chemical properties.
- When amino acids are joined together, they make _____.
- A _____ protein contains hundreds, or even thousands, of amino acids in a row.
- A specific protein is made only when the exactly the right amino acids join in just the right _____.
- The protein then folds into a _____.
- Exactly the right shape is _____ for the protein to function the way it is supposed to.

Machines at Work: New Discoveries

- Each time a molecular biologist makes a new discovery about amino acids, proteins, or molecular machines, it becomes more challenging to imagine that such complex things could have happened spontaneously from _____ matter.
- If scientists from the nineteenth century who thought cells were simple little blobs could have known that our bodies are made up of _____ of cells
 - Each cell housing thousands of _____
 - Each organelle made up of tens of thousands of _____
 - Each protein made of hundreds or thousands of _____.
- They might not have been as willing to accept the idea of _____.