

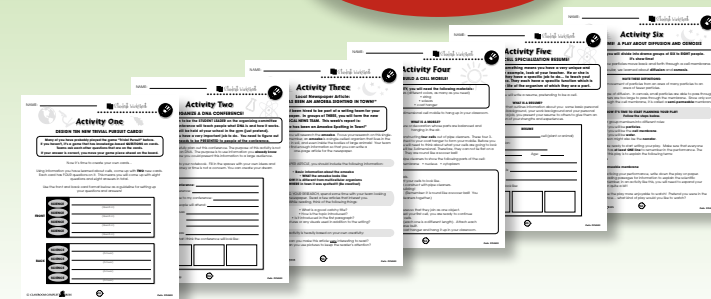
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The Parts of a Cell

1. You will be reading about the different parts of a cell. List as many different parts of the HUMAN BODY as you can think of. Can you think of at least TEN?

2. Complete each sentence with a word from the list. Use a dictionary to help you.

cell membrane nucleus cell cytoplasm organelles cilia

- a) _____ is the jelly-like substance that fills the inside of the cell.
- b) "Small organs" of a cell are called _____.
- c) _____ are stick-like things that push cells around and make them move.
- d) The _____ is the outside covering of the cell, very similar to our skin!
- e) The center part of a cell that has other things grouped or built around it is called a(n) _____.
- f) A(n) _____ is the smallest life form that can live on its own. It is tiny.

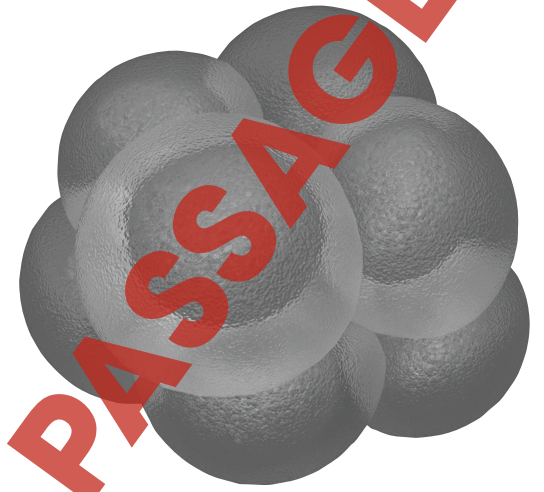


The Parts of a Cell

We now know that cells are different sizes and shapes. They all have different jobs to do, too. We read about how tiny the cells in our body are. But have you ever seen an ostrich's egg yolk? It is much bigger than the one in your sunny-side-up breakfast! It is the biggest cell that exists!

Even though cells all look different, they have some parts in common. All cells have an outside covering. This is called the **cell membrane**. Its job is similar to that of our skin. It surrounds the cell and holds the other parts of the cell in place. In general, the cell membrane protects the cell. Although it is strong, the cell membrane lets **particles** pass in and out of it.

Inside a cell's membrane are a nucleus and cytoplasm. The **nucleus** is the dark part located in the middle of the cell. Just like you have a brain, so does a cell! The nucleus is the cell's "brain". It controls everything that happens in the cell. Every cell is filled a jelly-like substance, called **cytoplasm**. It "listens" to the nucleus and it is where all the cell's activities take place.



STOP A cell's nucleus controls everything that happens in the cell. What part of the human body is the nucleus SIMILAR to?

How do cells move? Many cells move with the help of cilia. **Cilia** are short stick-like things which act as "paddles". These paddles push the cells around and make them move. All of the small structures that are found inside a cell are called **organelles**. They are the "small organs" of the cell, just like we have our own organs in our body.



The Parts of a Cell

1. Circle the answer that best completes each sentence.

- a) All cells have an outside covering, called a cell _____.
boundary membrane
- b) A cell membrane lets _____ pass in and out of it.
particles chemicals
- c) Cytoplasm is a jelly-like substance that fills the _____ of a cell.
inside outside
- d) Cilia are short stick-like things which act as _____ to make cells move.
stoppers paddles
- e) A(n) _____ egg yolk is the biggest cell that exists.
chicken's ostrich's

2. Circle the word True if the statement is true. Circle the word False if it's false.

- a) Cells are all different sizes and shapes, with different jobs to do.
True False
- b) The cell membrane's job is to keep harmful things from entering the cell.
True False
- c) A cell membrane is so strong that it does not let anything pass through it.
True False
- d) The nucleus in a cell is see-through. Therefore, it does not have an important job to do.
True False
- e) Organelles are small structures found inside a cell. They are the "small organs" of the cell.
True False



The Parts of a Cell

3. Pick TWO cell parts from the following list:

cell membrane cytoplasm nucleus cilia organelles

Answer the following questions:

- What does the cell part look like, or where in the cell can it be found?
- What is the function of this cell part?

- a) cell part: _____
looks like/where: _____
function: _____
- b) cell part: _____
looks like/where: _____
function: _____

Extension and Application

4. Draw a cell's canoe route!

Cilia are stick-like things which act as "paddles". They push cells around and make them move. On a blank piece of paper, draw a picture of a canoe and a person paddling in it. Pretend the canoe is the cell and the paddle is making a cell move. Use your imagination to draw what you think a cell's "canoe route" might be.

A few questions to consider:

- What does the cell look like? • What do other cells look like?
- When the cell moves, what things does it move around?

5. A conversation between a nucleus and a cell membrane!

Pretend you hear a conversation between a **nucleus** and a **cell membrane**. They are discussing what they look like, where they are found in a cell, and what their important jobs are.

Using a dialogue structure (see below), write out their conversation.

NUCLEUS says: _____

CELL MEMBRANE says: _____

(Repeat order to continue conversation...)



Design a DNA Instruction Book

BUILD A PERSON!

DNA is a secret code found in the middle of the cell, in the NUCLEUS. It is a very long list of instructions that gives each cell in your body its own shape and function. Your DNA made you the person you are now!

Now it is your turn to pretend you are the DNA. You will design your own person by creating your own list of instructions. Use your imagination for this activity! You can design any person you can imagine!!

DESIGN AN INSTRUCTION BOOKLET:

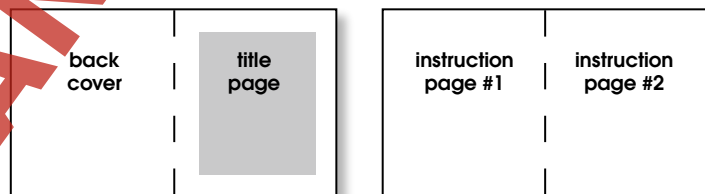
Think about something you recently bought at a store that needs instructions to assemble it. It likely came with a small foldout book that shows (with big numbers!) how to assemble the object, giving detailed instructions for each step. Your teacher will bring in a few examples of such books in case you have never seen one before. Use it as a guideline for your own book you will design.

YOUR BOOK SHOULD INCLUDE:

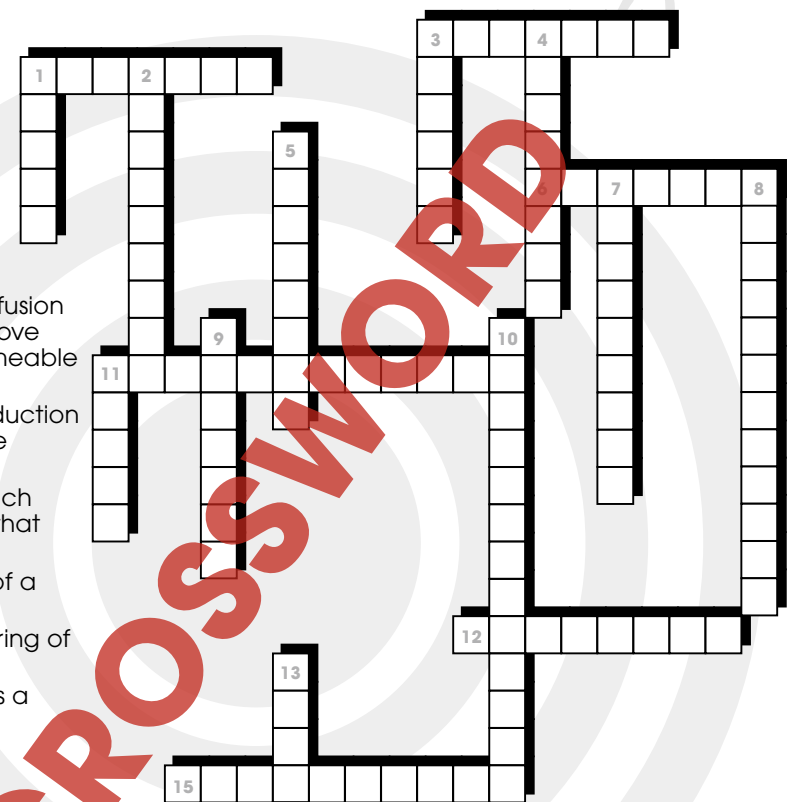
- A cover page (just like a title page - use diagrams and words to introduce your book)
- Numbers to show each step
- Creative instructions on how to build a person

Use **pictures** as well as words! It should be easy to follow and fun to look at!

Use the following page format for your instruction book:



Crossword Puzzle!



Across

- 1 A special type of diffusion in which particles move through a semi-permeable membrane
- 3 A type of cell reproduction in which sex cells are produced
- 6 The cell's "brain" which controls everything that happens in the cell
- 11 The outer covering of a cell
- 12 The rigid outer covering of a plant cell
- 15 A small bit that holds a cell's genetic code

Down

- 1 Something that is made of different kinds of tissue working together
- 2 A small structure found inside a cell
- 3 Anything that has mass and takes up space
- 4 A living thing, such as a plant or animal
- 5 Large sacs in a plant cell that take up a lot of space
- 7 Jelly-like substance that fills the inside of a cell
- 8 Describes an organism that is made up of only one tiny cell
- 9 Structure in a plant cell that makes or stores food
- 10 Describes something that allows some things through it, and not others
- 11 "Paddles" that push the cells around and make them move
- 13 Type of cell reproduction in which one cell divides into two new, almost identical cells



Comprehension Quiz



Part A

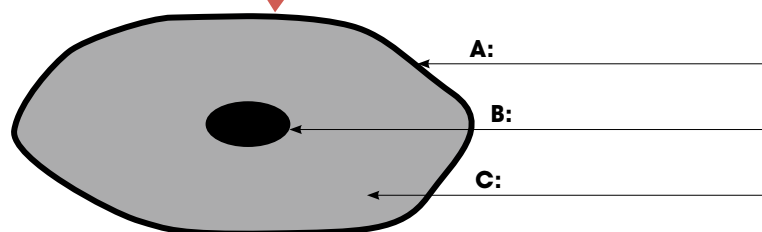
Circle the word True if the statement is true. Circle the word False if it is false.

1. Most organisms are made up of millions of cells. There are also some organisms that are made up one cell.
True False
2. A cactus, a human and an oak tree are all examples of single-celled organisms.
True False
3. The cell's nucleus is like a front door. It controls everything that passes in and out of the cell.
True False
4. Most organisms are made up of many specialized cells which carry out specific functions that support the life of the organism.
True False
5. Meiosis and mitosis are two types of cell reproduction.
True False
6. Plant cells can only be found in single-celled organisms. Animal cells can only be found in multicellular organisms.
True False

Part B

On the diagram below, label the three main parts of a cell. Use the words in the list.

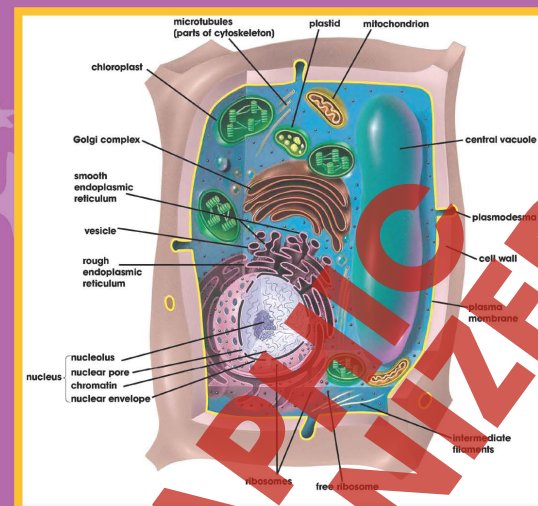
nucleus cell membrane cytoplasm



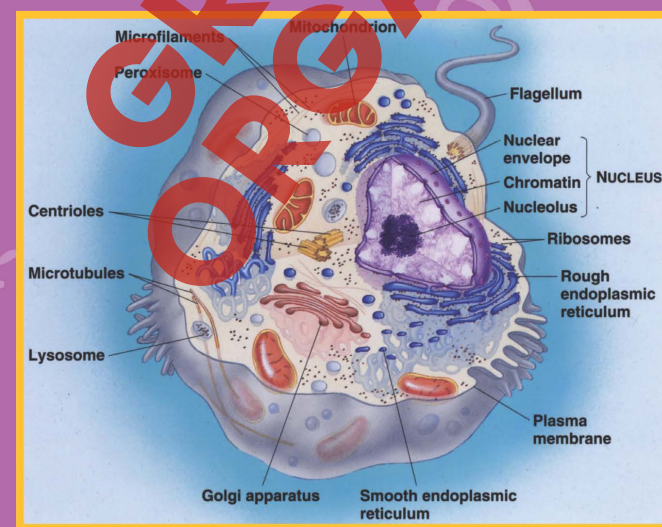
SUBTOTAL: /9

Plant & Animal Cells

Plant Cell



Animal Cell





What Is a Cell?

Answer the questions in complete sentences.

3. What is a **cell**?

4. Can you see a cell with just your eyes? What do you need to use in order to see a cell? Use terms from the reading passage in your answer.

5. Do **all** cells look the same? How might cells be different from each other?

Extension and Application

6. Pretend you are a **LEGO PIECE!**

You are part of a construction that a child is building.

Describe what your job is as a Lego piece. In this activity, think of building blocks as part of the Lego building. In your response, be sure to answer these questions:

- What is your job?
- Who do you work with?
- How do you depend on others?
- How do others depend on you?
- What would happen if you (the Lego piece) did not exist?

7. How does a **CELL PHONE** work? Are **cells** only found in plants and animals? Did you know that the word "cell" in "cell phone" is a short form of the word "cellular"?

You are an electronic researcher. Your task is to prepare a report on how **cell phones** work. Pretend that the person who will read your report knows very little about what a cell is, or how a phone works. Use various research tools such as the Internet or an encyclopedia to find information on this topic. Use your imagination to present it in a creative way!

3. Building block of life (smallest unit of living matter)

4. No - microscope

5. No - different shapes, sizes, jobs to do

6. Answers will vary

7. Answers will vary

1. G

2. D

3. F

4. C

5. A

6. B

7. E

2. Answers will vary

11. Answers will vary

12. Answers will vary

Possible answers:
Person, potted plant, insect

1. a) C

b) D

c) B

d) B

a) False

b) False

c) True

d) False

3. Single-celled - made up of 1 cell
Multicellular - made up of many cells

4. Organizes all the activities in the cell

5. Small structures that help carry out day-to-day operations of the cell

6. Answers will vary

7. Answers will vary

EASY MARKING ANSWER KEY

