

7th Grade Life Science Cell Biology Unit

Day 1:

Introduction into cell biology and the prokaryotic cell

Lecture: 20 min

- Introduction to cells, history and background information
- Prokaryotic cell form and function

Goal:

Want students to understand the basic features and functions of a prokaryotic cell.

Activity:

With a partner, draw and label prokaryotic cell. Students work on this for the remainder of class.

Supplies:

Markers and poster board will be provided.

Day 2:

Introduction of the eukaryotic cell

Lecture: 30 min

- Eukaryotic cell form and function
- Comparison between prokaryotic and eukaryotic cells
- Discussion between both cell types
- Introduce animal cell features and functions

Goal:

Want students to understand the basic features and functions of a eukaryotic cell. The students should be able to compare and contrast prokaryotic vs. eukaryotic cells.

Activity: 20 min

With a partner, draw and label eukaryotic cell. Students work on this for the remainder of class.

Supplies:

Markers and poster board will be provided.

Day 3:

Animal and Plant cell features and functions continued

Lecture: 20 – 30 min

- Discuss animal and plant cell features and functions

- Similarities and differences of plant and animal cells
- Introduction to microscope lab

Goal:

Want students to understand the basic features and functions of animal and plant cells. Allow them to explore the cellular world by observing cells through microscopes.

Activity: Remainder of class period

Students will examine cells through microscopes and observe the different features of each cell.

Supplies:

Microscopes and different cells with various features

Day 4:

Cell creation and activity day

Lecture: 10 – 20 min

- Explain the Jell-O cell activity
- Explain the Cell card activity

Goal:

Help students to visualize by creating a three dimensional model of a cell, helping students to master the cell forms and functions by repetition of working together with the other students

Activity: Remainder of class period

- 1). Provide the students with liquid Jell-O and different kinds of candy to represent different organelles of the cell. Allow them to insert the candy into the Jell-O and allow cooling over night to present the three dimensional model of a cell for the next day.
- 2). Students are paired together with matching cards of the organelle and its functions. Compose a list of organelles and functions provided one organelle and its functions to two cards (Organelle on one card while the functions on the other). Hand out cards to students and let the students with the pictures of organelles to draw the organelle on the board. Let the students that possess the function cards to identify the shape of the specific organelle and read the function to the class.

Supplies:

Jell-O, candy to represent the organelles, pre-organized note cards

Day 5:

Exam Day

Exam: 20 – 30 min

Reflection: Remainder of class period

Hold class discussion of the unit lesson to get feedback from the students

Activity:

Hand out the Jell-O cell creations to the students for a fun learning snack.

7th Grade Life Science

CELLS

35 Possible Points

Please read the directions in each section.

Fasten your seatbelts.

MATCHING

Write the letter of the cell organelle next to its function. (1 point each)

Cell organelles:

- | | |
|--------------------------|--------------------|
| A. Nucleus | F. Ribosomes |
| B. Mitochondria | G. Lysosome |
| C. Endoplasmic reticulum | H. Chloroplast |
| D. Cell wall | I. Golgi apparatus |
| E. Cell membrane | J. Vacuole |

Organelle functions:

1. _____ Outer membrane made of a phospholipid bilayer that controls cellular traffic.
2. _____ A rigid covering found in plant cells that controls cell pressure.
3. _____ Fluid-filled sacs for storage, digestion, and waste removal in plant cells.
4. _____ Each cell contains thousands of these miniature protein factories.
5. _____ The energy producer of the cell and second largest organelle.
6. _____ Where photosynthesis takes place.
7. _____ Has smooth and rough types and serves as the cell's transport system.
8. _____ The information center and activities director of the cell.
9. _____ A membrane structure made of layers that packages proteins.
10. _____ The digestive organelle for proteins, lipids, and carbohydrates.

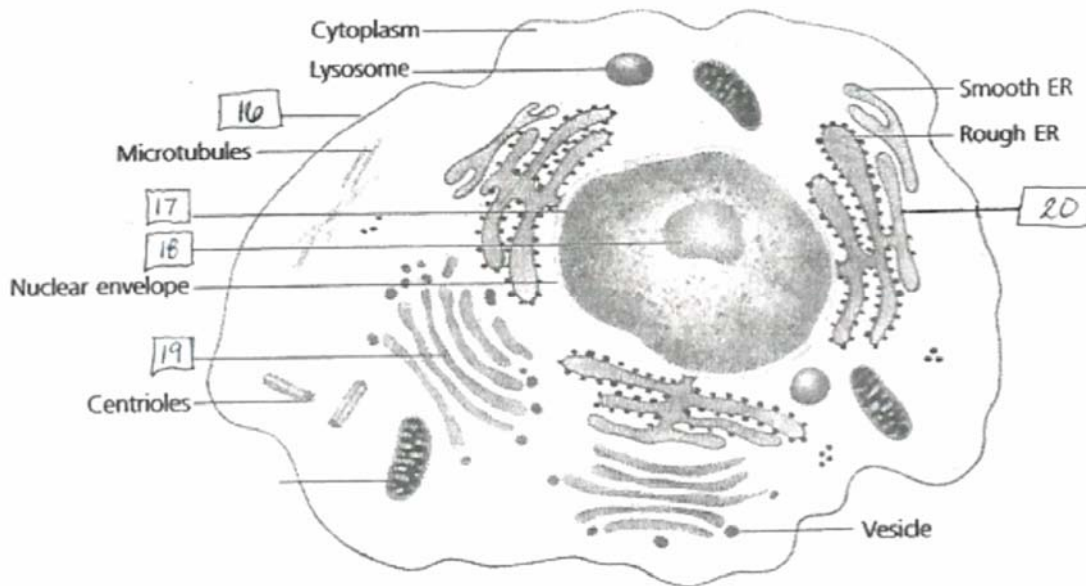
FILL IN THE BLANK

Write the correct answer in the blank to finish the sentence. (2 points each)

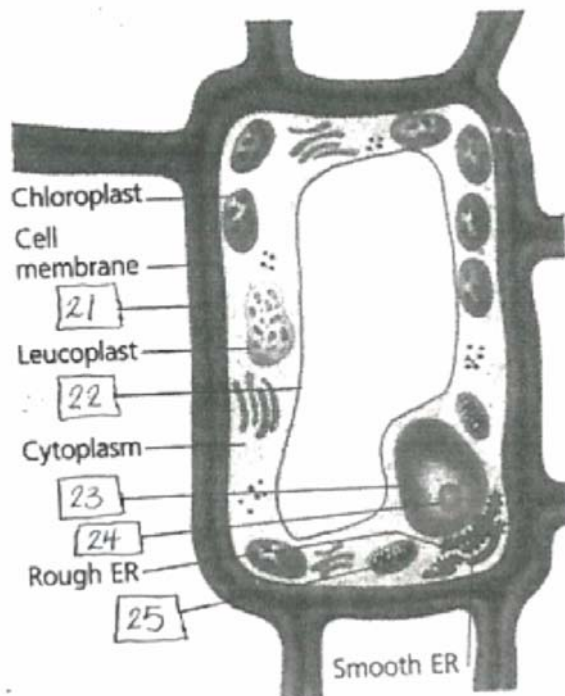
11. The smallest unit that can carry on all the processes of life is a _____.
12. Miniature organ-like structures that have specific functions in a cell are called _____.
13. Rough endoplasmic reticulum (ER) contains _____ and Smooth ER does not.
14. Most nuclei contain a _____ where ribosomes are made and partially assembled.
15. The _____ is fluid inside the cell membrane that surrounds the organelles.

LABEL THE CELLS

Name the numbered organelles in each cell below. (1 point each)



- 16. _____
- 17. _____
- 18. _____
- 19. _____
- 20. _____
- 21. _____
- 22. _____
- 23. _____
- 24. _____
- 25. _____



SHORT ANSWER QUESTIONS

Answer the following questions briefly. (1point, 2 points, 2 points)

- 26. Is the cell on top a Plant Cell or an Animal Cell? _____
- 27. How can you tell the difference between a Plant Cell and an Animal Cell?
- 28. What are 2 characteristics that make Eukaryotic cells different from Prokaryotic cells?