Heading! }

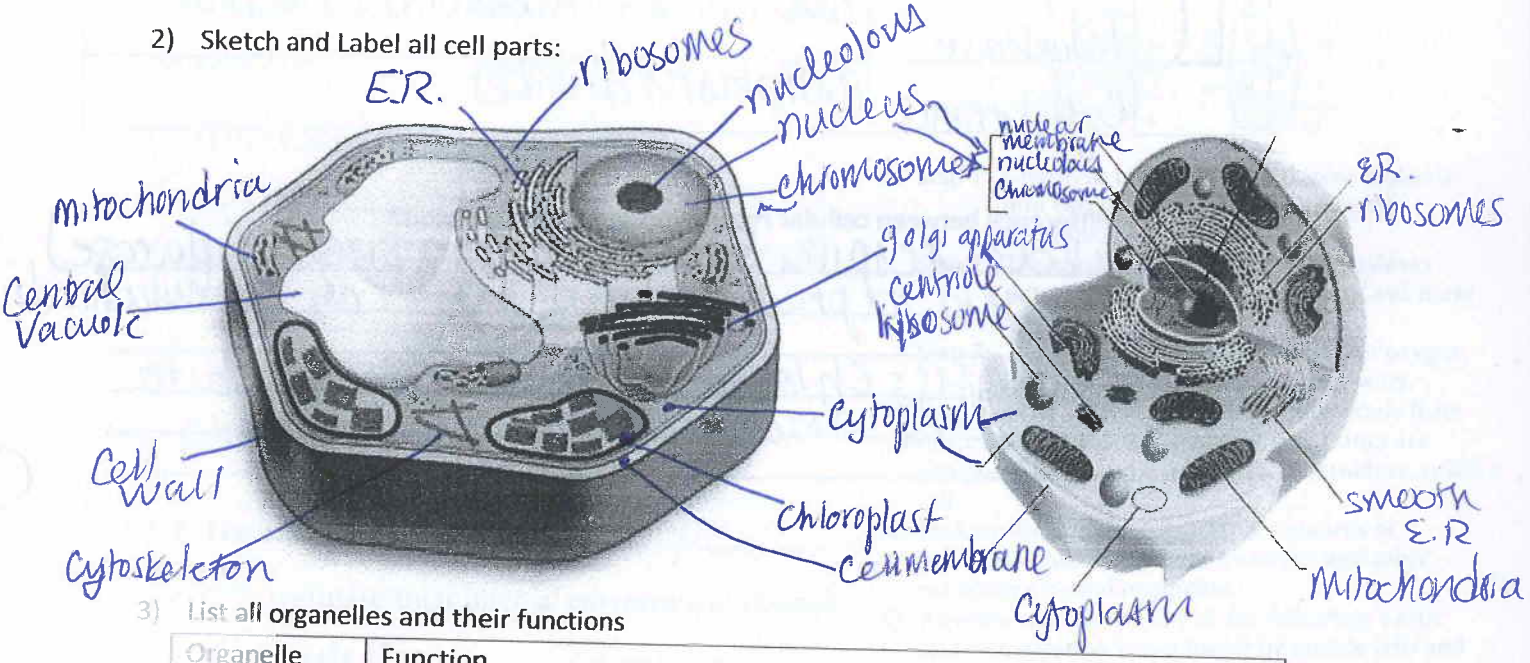
Key

Unit 1 Review:

1) Describe the Cell Theory: (Chapter 1 Lesson 1)

- All ~~cell~~ organisms are made up of 1 or more cells.
- The cell is the smallest unit of life.
- All new cells come from pre-existing cells.

2) Sketch and Label all cell parts:



3) List all organelles and their functions

See pg 63 in text (orange tab)

Organelle	Function

4) Describe and name all phases of the cell cycle

Phase #	Phase Name	Description of what happens in this phase
1	Interphase	G1, S, G2 organelles replicate + chromosomes replicate, cell grows
2	Prophase	DNA coils, Nuclear membrane breaks apart
3	Metaphase	~~DNA~~ chromatides line up in middle
4	Anophase	Chromatids pulled apart @ centromere
5	Telophase	new nuclear membranes form
6	Cytokinesis	Cytoplasm divides

mitosis

5) What is the difference between cellular respiration and photosynthesis?

Cellular respiration takes in sugar (glucose) and Oxygen to produce H_2O ATP & CO_2 (in mitochondria)

Photosynthesis: Chloroplasts take in CO_2 & H_2O to produce O_2 and glucose

Name _____ Date _____ Class _____

Chapter Review — Cell Structure and Function

CHAPTER 1

Part A. Vocabulary Review

Directions: *Write the unscrambled word next to the scrambled word on the lines below. Use these words to fill in the blanks in the sentences that follow.*

carbohydrates ✓	chromosomes ✓	cilia ✓	cytoplasm ✓
homeostasis ✓	lipid ✓	microscope ✓	nucleic acids ✓
organelles ✓	photosynthesis ✓	proteins ✓	vesicle ✓

✓ microscope peocsimcro
✓ Cilia liaic
✓ proteins seintorp
✓ lipid dipli
✓ Chromosomes moshrecooms
✓ photosynthesis stopsintheshoy
✓ organelles ellosgrane
✓ vesicle sevicel
✓ cytoplasm splamotyc
✓ Carbohydrates dycrabetohars
✓ nucleic acids licenuc sciad
✓ homeostasis omstisheoas

1. The invention of the microscope allowed scientists to learn about cells.
2. Cells maintain their internal environment through homeostasis.
3. Organelles are structures in cells with specific functions.
4. The genetic material of the cell is contained in its chromosomes.
5. Some one-celled organisms move by coordinating numerous cilia.
6. Carbohydrates are made of sugar molecules.
7. Fat is a type of lipid.
8. proteins are molecules necessary for nearly every cell function.
9. During photosynthesis, light energy, water, and carbon dioxide combine to make sugars.
10. Proteins are made using long chains of molecules called nucleic Acids.
11. Inside the cell is the cytoplasm, a thick fluid made mostly of water.
12. A vesicle transports molecules throughout the cell.

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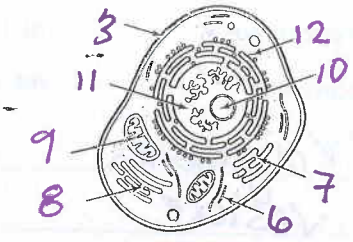
Chapter **Review** CONTINUED

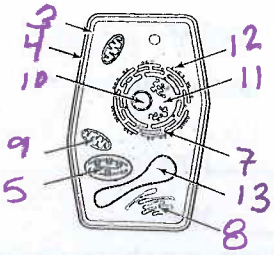
Part B. Concept Review

Directions: *Compare the diagrams of plant and animal cells. Write* P *above the plant cell and* A *above the animal cell. Then categorize the cell parts from the numbered list as belonging to plant cells, animal cells, or both by writing the number of each part beside the arrow pointing to it.*

1. Animal



2. Plant



3. cell membrane
7. endoplasmic reticulum
11. nucleus
4. cell wall
8. Golgi apparatus
12. ribosomes
5. chloroplast
9. mitochondria
13. vacuole
6. cytoskeleton
10. nucleolus

14. **Demonstrate** your understanding of cellular respiration and the production of ATP by presenting the three steps.

(1) Mitochondria breaks glucose down by taking it in
(2) Releases carbon dioxide
(3) it takes in oxygen and creates & releases ATP and water.

15. **Consider** how the cell theory must have changed people's understanding of living things. Write your thoughts in the space provided.

People know all living things have a cell as their basic unit of life & that life comes from life, not non-life.

16. **Compare** prokaryotic cells and eukaryotic cells.

Pro-no membrane bound organelles or nucleus, Circular DNA
Eu-Membrane bound organelles & more complex.

17. **Contrast** lactic acid fermentation and alcohol fermentation by describing two differences.

Name _____ 4. homologous ... Yes

Chapter Review — From a Cell to an Organism

Part A. Vocabulary Review

Directions: *Determine whether each statement below is true or false. If the statement is correct, write* T *in the blank. If it is false, change the italicized word or words to make the statement correct and write the replacement in the blank at the left.*

F, Cytokinesis 1. *Mitosis* is the process by which the cytoplasm divides.

TRUE 2. *Stem cells* can become many different types of cells.

F, Telophase 3. During *cytokinesis,* two complete nuclei are formed.

F, homologous chromosomes 4. Pairs of similar chromosomes are called *centromeres.*

TRUE 5. *Sister chromatids* separate during anaphase.

F, daughter cells 6. Following cytokinesis, two identical *cell plates* are formed.

TRUE 7. *Cell differentiation* results in specialized cells.

F, cell plate 8. In plants, a *kalanchoe* forms between the two new nuclei.

TRUE 9. The *cell cycle* includes interphase, mitosis, and cytokinesis.

Part B. Concept Review

Directions: *Arrange the steps of mitosis described below in order by writing the correct number* (1–4) *and phase name in each blank.*

4, Telophase 1. New nuclear membranes form and chromosomes become less tightly coiled.

2, Metaphase 2. Sister chromatid pairs line up across the center of the cell.

1, Prophase 3. DNA in sister chromatids twists into coils and nuclear membranes break apart.

3, Anophase 4. Sister chromatid pairs separate and move to opposite ends of the cell.

Name _____ Date _____ Class _____

Chapter **Review** CONTINUED

Directions: *Respond to each statement below in complete sentences.*

5. **Compare** and **contrast** cell organization and function in a one-celled eukaryote and in a human muscle cell.

both have organelles. Some Eukaryotes can function independantly, muscle cells rely on colonies of other muscle cells to function.

6. **Distinguish** between the three stages of interphase. Name each stage and its function.

G1: cell grows + functions – A: Chromasomes duplicate/replicate
G2: Organelles replicate

7. **Conclude** why cell division is important.

It is important to keep life going. Also to allow multiple-celled organisms to grow + develop.

8. **Arrange** the cell groupings of tissue, organ, organ system, and organism in order by increasing level of complexity, and describe how each relates to the others.

Cells, tissues, organs, organ system, organism
Many cells work together → Many tissues work together
Organs working together for 1 purpose / Made of organ systems

9. **Speculate** about why stem cell research is valuable in modern medical science.

Stem cells can become any type of cell! It could help someone who lost an organ by growing organ cells.

10. **Choose** two organ systems in your body, and describe the function of each.

11. **Compare** and **contrast** plant organs and human organs.