

Name: _____

Period: _____

Intro to Cells Study Guide
2.1, 2.2, Microscopes

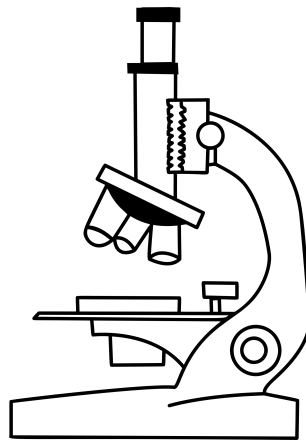
The Microscope

Questions #1-13: Use the dichotomous key on the next page to fill in the Secret Letters.

Microscope Part	Secret Letter
Stage Clip	1.
Stage	2.
Arm	3.
Coarse Adjustment Knob	4.
Fine Adjustment Knob	5.
Diaphragm	6.
Fine Adjustment Knob	7.
Objective Lenses	8.
Stage	9.
Base	10.
Fine Adjustment Knob	11.
Light Source	12.
Coarse Adjustment Knob	13.

What is the secret word? _____
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.

- a. This is used to carry the microscope.....go to step 2
 This is not used to carry the microscope.....go to step 3
- b. his is for support at the bottom of the microscope.....T
 This is found at the top of the microscope for support when carrying.....G
- c. This is Knob found on the side of the microscope.....go to 4
 This is not a knob found on the side of the microscope.....go to 5
- d. This knob is small and moves the stage slightly to sharpen the image.....I
 This knob is larger and moves the stage up and down for focusing.....N
- e. This is used to hold the slide in place.....M
 This is not used to hold the slide in place.....go to 6
- f. This supports the slide being viewed.....A
 This does not support the slide being viewed.....go to 7
- g. This projects light upwards through the specimen.....O
 This does not project light upwards through the specimen.....go to 8
- h. This turns to regulate the amount of light on the specimen.....F
 The magnification of these ranges from 10X to 40X.....C



Questions #14- 16: calculate the magnification of each objective lens below.

14. Eye Piece _____ X Low Power _____ x = _____ x

15. Eye Piece _____ X Medium Power _____ x = _____ x

16. Eye Piece _____ X High Power _____ x = _____ x

Cells and Life (2.1)

Questions #17- 20: list the four types of macromolecules, provide a function and a food source.

Macromolecule	Function	Food source
17.		
18.		
19.		
20.		

List the three parts of cell theory below:

21. _____

22. _____

23. _____

The Cell (2.2)

24. Place these terms in the appropriate column below: **cell membrane only, cell membrane and cell wall, large central vacuole, small vacuoles only, mitochondria only, mitochondria and chloroplasts**

Animal	Plant

25. How do these organelles work together?

a. **lysosomes** and **vacuoles**

--

b. **endoplasmic reticulum** and **Golgi apparatus**

--

c. **ribosomes** and **endoplasmic reticulum**

--

d. **chloroplast** and **mitochondria**

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26. Fill in this table by writing *yes* or *no* on the lines provided.

	Prokaryotic (e.g. bacteria)	Eukaryotic (e.g. humans)
a. cell membrane		
b. cell wall		
c. nuclear envelope		
d. mitochondria		
e. endoplasmic reticulum		
f. ribosomes		

27. Match the descriptions with the following cell types.

Prokaryotes	Eukaryotes	Both
-------------	------------	------

- | | |
|--------------------------------------|--------------|
| a. Contain a nucleus | Answer _____ |
| b. Contain DNA | Answer _____ |
| c. Contain membrane-bound organelles | Answer _____ |
| d. Have a cell membrane | Answer _____ |
| e. Are bacteria | Answer _____ |
| f. Are plants and animals | Answer _____ |

28. Match the descriptions with the following cell types.

Animal cells	Plant cells	Both
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- a. Contain a nucleus Answer _____
- b. Can do photosynthesis Answer _____
- c. Contain a cell wall Answer _____
- d. Contain cell membrane Answer _____
- e. Contain chloroplasts Answer _____
- f. Have rounded edges (are usually circular-shaped) Answer _____
- g. Have straight edges (are square-shaped) Answer _____

Questions #29-39, Fill in the blank with the organelle that best fits the description. Use the following terms: Lysosome, Cytoplasm, Vacuole, Ribosomes, Golgi Complex, Chloroplast, Mitochondria, Cell Wall, Cell Membrane, Nucleus, Endoplasmic Reticulum

- 29. The _____ is the **outermost** living layer of the cell and it controls movement into and out of the cell.
- 30. The _____ is the **control center** of the cell and it regulates the cells activities. Contains the DNA of the Cell.
- 31. The _____ is a **jelly-like substance** that contains the organelles and allows them to move throughout the cell.
- 32. The _____ is the site of **cellular respiration** . It is often called the **powerhouse** of the cell.
- 33. The _____ captures energy from **sunlight** and uses it to produce food in **plants**.
- 34. The _____ **packages** materials for transport outside of the cell.
- 35. The _____ is the organelle responsible for **transporting** materials within the cell.
- 36. The _____ **supports** and protects **plant** cells.

37. A small sac in the cytoplasm which **breaks down** food, old cell parts, and dead, injured, or obsolete cells is the _____.

38. A large sac in the cytoplasm which **stores** food, water, or wastes is a _____.

39. Small grain shaped organelles that produce **protein** are called _____.

Identify the organelles depicted in the cells below. Use the following terms: **Ribosomes, Cytoplasm, Vacuole, Golgi Complex, Chloroplast, Mitochondria, Cell Wall, Cell Membrane, Nucleus, Endoplasmic Reticulum, Lysosome**

A. _____

H. _____

B. _____

I. _____

C. _____

J. _____

D. _____

K. _____

E. _____

L. _____

F. _____

40. Cell 1 is a: _____ cell

G. _____

41. Cell 2 is a: _____ cell

