Name:_____ Per._____

Prokaryotic and Eukaryotic Cells Game and WebQuest

Part A – What Are Cells?

Use the link below to watch the "What Are Cells" video clip by Bill Nye the Science Guy. As you watch, answer the following questions. https://tinyurl.com/o9jmfh7

1. Approximately, how many cells are in the average human body? _____

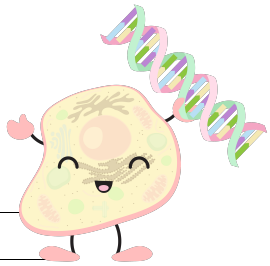
2. List some types of cells found in a human body: _____

3. How are cells alike AND different than bricks in a brick wall? _____

_____

Part B – How are Prokaryotic and Eukaryotic Cells Different?

Use the link below to watch the "Introduction to Cells – The Grand Tour" video by The Amoeba Sisters. As you watch, answer the questions. https://tinyurl.com/zurjaqp



4. List the 3 Parts of the Modern Cell Theory:
   1. _____
   2. _____
   3. _____

5. Cells are divided into which two major groups? _____

6. What type of cell are bacteria and Archaea made of? _____

7. What type of cell are fungi, animals, plants, and protists made of? _____

8. What four (4) things do both eukaryotes and prokaryotes contain? _____

_____

9. What do prokaryotes lack that eukaryotes contain? _____

10. What is the cell membrane sometimes called? _____

11. What does it mean to be *selectively permeable*? _____

12. What role does the cytoplasm play in a cell? _____

13. Which cell organelle produces ribosomes? _____

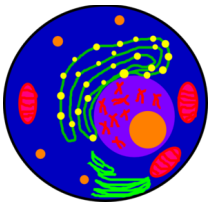
14. Which cell organelle helps with detoxification and makes lipids? _____

15. What is the function of chloroplasts? _____

16. What does a plant's large central vacuole hold? _____

17. What type of cell has a cell wall? _____

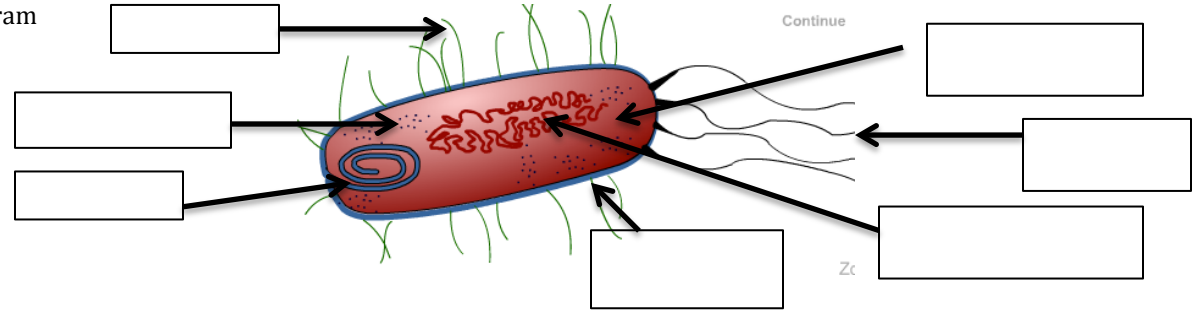
18. What are two functions of a cell wall? _____



Part C – Learn About and Build a Prokaryotic Cell

Use the link below to access the Interactive Concepts in Biochemistry Website. Click on the *prokaryote cell* tab on the right of the screen. Follow the directions below to complete this activity. https://tinyurl.com/be4dx

19. Scroll your mouse over the different parts of the prokaryotic cell. As you read about the different parts, label the following diagram



Part C Continued
Scroll your mouse over the different parts of the prokaryotic cell again. As you read about the different parts, complete the following graphic organizer.

Organelle of Prokaryotic Cell	Function of Organelle	Drawing Of Organelle
20. Pili		
21. Ribosome		
22. Mesosome		
23. Cell Wall		
24. Nucleoid Region		
25. Flagella		
26. Cytoplasm		

27. On the right side bar of the interactive, click the button that says "Construct a Cell". Choose the prokaryotic cell and construct a cell within the site. When you are finished, write ONE thing you learned from construction of the cell in the space below. _____

Part D – Learn About and Build Eukaryotic Plant and Animal Cells
Use the following link to complete the "What Do Cells Do?" activity from the SEPUP. https://tinyurl.com/9f23x8x

Click "Start", read the directions, press "continue", and then "okay". Place your mouse over the organelles in the interactive to learn more about each organelle. Complete the following graphic organizer as you move through the organelles.

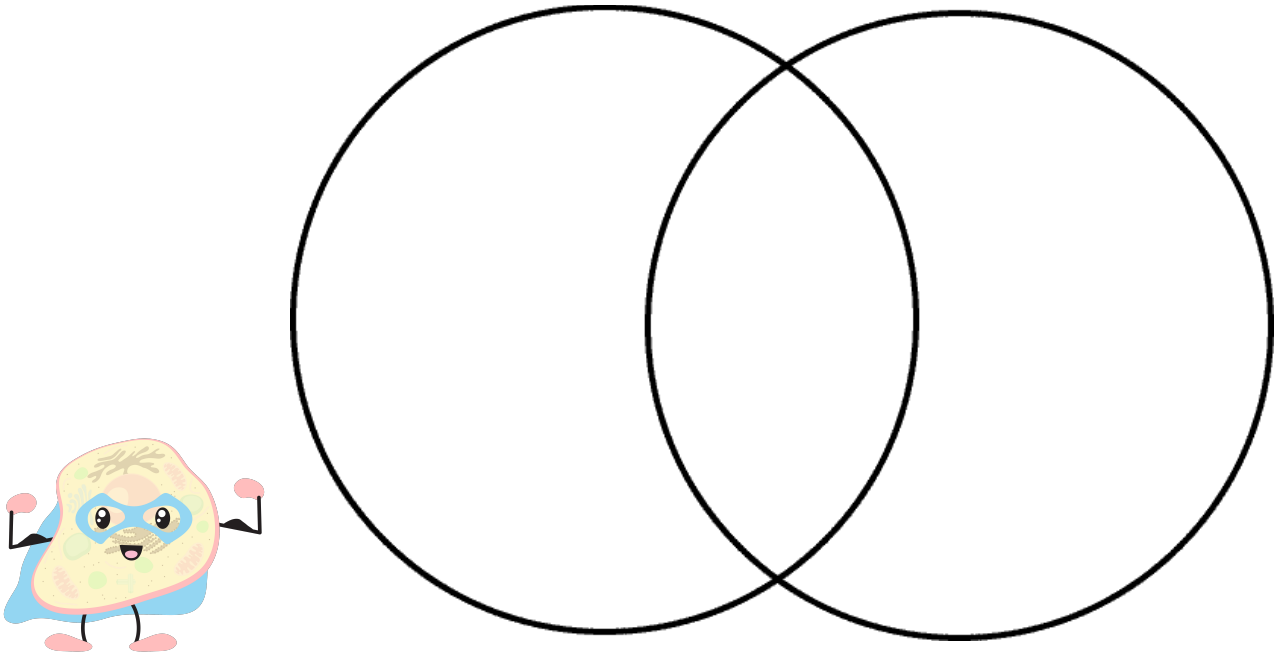
Organelle	Summary of Function
28. Nucleus	
29. Cell Wall	
30. Lysosome	
31. Mitochondria	
32. Chloroplast	
33. Vacuole	
34. Cell Membrane and Cytoplasm	
35. Vesicle	
36. Free Ribosomes	
37. Cytoskeleton	
38. Golgi Apparatus	
39. Endoplasmic Reticulum	

Part D Continued

40. Construct an animal cell in the interactive. Draw it in the space below. Label ALL Parts.
Parts: Cell membrane and cytoplasm, nucleus, endoplasmic reticulum, golgi apparatus, cytoskeleton, small vacuoles, free ribosomes, lysosome, mitochondria, and vesicle.

41. Construct a plant cell in the interactive. Draw it in the space below. Label ALL Parts.
Parts: Cell membrane and cytoplasm, cell wall, chloroplast, nucleus, endoplasmic reticulum, golgi apparatus, cytoskeleton, large vacuole, free ribosomes, mitochondria, and vesicle.

42. After you complete the plant cell, click "continue". Follow the directions to summarize the differences between Animal and Plant cells using a Venn Diagram. Copy the Venn Diagram in the space below.



Part E – Play The Cell Explorer Game

Click on the following link to play the "Cell Explorer" Game from the BioMan Bio website. Make sure you read EVERY screen that pops up in order to answer the following questions. https://tinyurl.com/mjnzaqm

Mission 1: RECON

Click on Mission 1 Recon. Follow the directions to answer questions in this section.

43. *Shoot the Golgi Apparatus*. Fill in the blanks: Golgi receives _____ containing _____ that were sent by the _____. Then it modifies _____ and sends them where they need to go.

44. *Shoot the cytoskeleton*. The cytoskeleton is like the _____ of the cell. The cytoskeleton is made of _____ and _____. It helps to keep the cell's _____ and shape. It also helps the cell to _____.

45. *Shoot the Plasma Cell Membrane.* The cell membrane is the _____ of all cells. It regulates what _____ and _____ the cell to help maintain homeostasis. The cell membrane is _____ which means it allows substances to pass through, but not others.

46. *Shoot the Mitochondria.* What do mitochondria make _____. What is ATP? _____ The process of making ATP in cells is called _____. Respiration uses the _____ you eat and the _____ you breathe to make _____, _____, and _____

47. *Shoot the Ribosomes*. Ribosomes make _____.

48. *Shoot the Smooth ER*. Smooth ER makes _____ and performs other _____ It also _____ poisons. It does not have _____ so it does not make _____

49. *Shoot the Nucleus.* The nucleus holds and protects the cell's _____. The DNA is the _____ for the cell and carries the _____ and _____ that directs the cell. The dark spot in the nucleus is the _____. The nucleolus makes _____.

50. *Shoot the Rough ER*. The rough ER is covered with _____. The rough ER is involved with transporting _____ _____. The proteins are sent away from the rough ER in _____ that transport them to the _____.

51. *Shoot a lysosome.* The lysosome has hydrolytic _____ that break down or digest things in the cell. They also destroy _____ and other invaders. They also digest _____ particles and recycle _____

52. *Shoot a vesicle.* A vesicle transports _____ substances to where they need to go in the cell.

Mission 2: ESCAPE

Click on Mission 2 ESCAPE from the main menu. Follow the directions to answer questions in this section.

53. Follow the directions to play the game. At the end of the game, you will receive a final score. Write it here: _____

Mission 3: DEFENSE

Click on Mission 3 DEFENSE from the main menu. Follow the directions to answer questions in this section.

54. Follow the directions to play the game. At the end of the game, you will receive a final score. Write it here: _____

Mission 4: CONSTRUCT

Click on Mission 4 CONSTRUCT from the main menu. Follow the directions to answer questions in this section.

55. Follow the directions to play the game. At the end of the game, you will receive a final score. Write it here: _____

Part F: Put it All Together! 3-2-1: Fill Out the Graphic Organizer Below.

3 Things You Learned	2 Things You Found Interesting	1 Question You Still Have