

Cell Theory and Microscope Worksheet (pages 6 – 13 and 20 and 21)

1. What is the maximum magnification of the compound light microscope?
2. What is the approximate maximum resolution of a compound light microscope?
3. Explain why the compound light microscope cannot produce clear images of very small objects.
4. Complete the table below:

	Electron Microscope	Light Microscope
Maximum Magnification		
Maximum Resolution		
What substance strikes the object being viewed		
What is used to bend the beam of energy in each microscope		

5. How does a scanning electron microscope differ from a transmission electron microscope?
6. Describe how the scanning electron microscope produces 3 dimensional images.
7. Explain how you would tell which microscope was used to produce a micrograph?
8. The size of the field of view is 1450 μm and you estimate 10 copies of your specimen would be need to go across the field. What is the size of your specimen?
9. The size of the field of view is 450 μm and you estimate 90 copies of your specimen would be need to go across the field. What is the size of your specimen?
10. The magnification under low power is 40X. The magnification under medium power is 100X. If the size at low power is 100 μm , what is the size at medium power?
11. Be able to label all parts of the light microscope
12. State the four parts of the cell theory.
13. Know what Needham, Redi, Spallanzani and Pasteur did to contribute to the argument regarding abiogenesis and biogenesis.
14. Know what Hooke, Virchow, Schwann, Schleiden did to contribute to the cell theory.
15. Know what Leeuwenhoek, Ruska and Knoll all did to add to our knowledge of cells through using microscopes.
16. What is the main idea of abiogenesis?
17. What is the main idea of biogenesis?