Name _____ Date _____ Block _____

Physics Emergency Lesson Plans

While reading pgs. 404-418 complete the following guided outline:

Light

I. Early Concepts of _____
   a. Up until the time of Newton, most philosophers and scientists thought that light consisted of _____.
   b. Empedocles and Christian Huygens thought light was a _____.
   c. _____ theory became the accepted theory in the nineteenth century.
   d. Einstein had a theory that light consists of massless bundles of concentrated electromagnetic energy, called _____.

II. The Speed of Light
   a. Olaus Roemer demonstrated that _____ travels at a _____ speed.
   b. _____ _____ was able the measure the speed of light in 1880.
   c. The speed of light is _____m/s.
   d. The distance light travels in one year is called a _____.

III. Electromagnetic Waves
   a. Light is energy that is emitted by accelerating electric charges.
   b. These waves of energy are called _____.
   c. The range of electromagnetic waves is called the _____ _____.
   d. EM waves of frequencies lower than red are called _____.
   e. _____ waves of frequencies higher than violet are called _____.

IV. Light and Transparent Materials
   a. Light is _____

b. Glass and water are two materials that allow light to pass through. They are transparent.
c. Incident light waves cause objects to _____.
d. Light travels at _____ speed in different materials.

V. Opaque Materials
a. Materials that absorb light without remission and thus allow no light through them are _____.
b. Three examples of opaque materials are: _____, _____, _____

VI. Shadows
a. A shadow is formed where _____ can not _____.
b. A total shadow is called an _____.
c. A _____ shadow is called a penumbra.
d. A solar eclipse occurs when _____.

VII. Polarization
a. Polarization is caused because light waves are _____ and not _____.
b. Light will _____ pass through a pair of polarizing filters when their polarization axes are aligned.
c. Polarized sunglasses reduce glare because _____

_____

_____

VIII. Polarized Light and 3-D Viewing
a. Each eye give impressions from a different angle, giving you a _____ view.
b. Polarizing filters can be used to simulate 3D in movies using _____ projectors, two polarized filters and special glasses.