

Name:

Date:

Class:

Formative Assessment 2 **Answer Key**

(Word bank: conductive band, valence band, electrons, band gap, conductive, resistance, wavelength, frequency, energy, opacity)

1. What is the difference between insulators and conductors?

Conductors can conduct heat and electricity because the electrons in conductors are able to move freely between the valence band and the conductive band. In insulators the electrons cannot move freely because of the large band gap.

2. What does wavelength of light have to do with color?

The larger the wavelength, the redder the color; the shorter the wavelength, the more violet the color.

3. How does increasing the temperature affect the electrons?

Increasing the temperature increases the energy and speed of the electrons.

4. How does increasing the temperature affect the conductivity of a material?

Increasing the temperature makes materials more conductive because it gives the electrons more energy, allowing them to jump over the band gap.

5. Describe how to grow a crystal precipitate from solution using the slow evaporation method.

Create a saturated solution and then let it slowly evaporate over time. As the water evaporates crystals will precipitate out of the solution.