NAME: **HONORS CHEMISTRY**

SECTION: Metallic Bonding HW

Watch this video on metallic bonding <https://www.youtube.com/watch?v=9lDVDf9AKhQ>

1. Explain how a sample of metal stays together. Describe the movement of the valence electrons under ordinary conditions.
2. Use the metallic bonding model to explain why metals are malleable (and ductile!). Describe the movement of particles when the metal is hit with a hammer.
3. Describe the movement of electrons when a potential difference is applied. Describe the movement of electrons when current flows in a wire.
4. Why are metals shiny? Explain what causes luster.

Go to <http://chemwiki.ucdavis.edu/Theoretical_Chemistry/Chemical_Bonding/General_Principles/Metallic_Bonding>

and use the information there to answer the following questions about metallic bonding.

1. List three things the strength of a metallic bond depends on:

Scroll down to the band theory section of the website below to answer the following questions.

<https://www.allaboutcircuits.com/textbook/semiconductors/chpt-2/band-theory-of-solids/>

1. What are bands, and how are they related to orbitals?
2. What is a conduction band?

1. What is a valence band?
2. What is the band gap? (No equations here… a written description, please!)

An additional resource:

<https://eng.libretexts.org/Bookshelves/Materials_Science/Supplemental_Modules_(Materials_Science)/Semiconductors/Intrinsic_Semiconductors_II>

1. Sketch the arrangements of the conduction and valence bands for conductors, semiconductors and insulators