**Day 3: Photovoltaics - In-Class Activity**

**Group # \_\_\_ Group Names:**

**Pre-Class Assignments:** View Photovoltaics video, copper and bronze homework assignment

**Activity Objective:** Relationships of trade, social class and expertise

This week’s topic—copper and bronze—brings up some interesting points about the links between materials and long-distance trade/exchange. We are learning about challenges ancient artisans faced when they needed the key ingredients for certain alloy recipes, or the technological solutions for smelting metals. The response to the former problem is trade; the solution to the latter problem is the diffusion of (good) ideas. Let’s now take that aspect of the relation between materials and long-distance exchange one step further by answering some questions about Photovoltaics:

1. What do you need to make Photovoltaics?
2. Where will you source the materials you listed in question #1? (Are there existing markets on which you can buy the materials?)
3. Are there any particular challenges (logistical, social, religious, etc.) to extracting, mining, or moving any of the key materials involved in making Photovoltaics?
4. Who has the know-how in how to make and use Photovoltaics? (Where are these people located? Are they located in different places than their potential users?)
5. Is recycling possible for Photovoltaics? If so, where could the recycling be done? What technological and environmental problems may be raised by recycling Photovoltaics?

Grading Rubric.  Your grade will be determined from the following criteria.

5= Responses are appropriate and indicate engagement with the preparatory material.  Grammar, sentence structure and punctuation are correct.

4= Responses and arguments are not as clearly presented. Some minor issues with grammar, punctuation and or sentence structure.

3= Responses are not appropriate to the assignment and do not reinforce the physical and cultural properties of materials.  Mistakes in grammar, punctuation and or sentence structure.

2= Responses are incomplete.  Major problems with grammar, punctuation and or sentence structure.

1= Responses are inconsistent with material covered in class, videos, and readings. Missing elements of assignment.  Poor grammar, punctuation and or sentence structure.