Student Name _____ Date _____

MAPPING MARS

Directions: Using the information below, answer the following questions and draw a map of Mars.

Discussion

1. Explain the benefits of each type of representation (map and globe) of Earth.

2. When does it make more sense to use a globe? When is it better to use a map?

3. Read about different types of map projections at Xpeditions' Globe Projector (click on Standard 1 on the navigation across the top of the page) Which projection is best to use for navigation? Why?

4. What is the advantage of using a polar projection?

5. When would it be better to use one of these maps rather than a globe? When would it be better to use a globe?

6. Look at maps of Mars at the MapMachine. What do you think would be the differences between mapping Earth and mapping Mars?

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7. Look more closely at the Mars map on the MapMachine, and zoom in to see the surface of Mars in more detail. Explain the advantages and disadvantages of drawing a map at this close-up level.

8. What can be shown on this type of map (e.g., specific features such as craters or boulders)? What cannot be shown (e.g., the "big picture" of the Martian surface or surrounding mountains)?

9. Go to the Web sites: http://www.nationalgeographic.com/mars/ or http://mars.jpl.nasa.gov/ to gather information about Mars and to find out about some recent research into the red planet. Take notes on the topics listed below as you go through the sites. Note at least three facts or features for each of the three topics.

   - Technology and transportation used to study Mars

   - Geology and topography

   - Climate

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10. Draw two or three pictures of Mars. Each picture should represent Mars in a different way. One picture should show Mars as a globe, and the other one or two should show Mars in different flat map forms (e.g. a standard Mercator-type projection and a close-up of a specific area).