

Lesson 1: Welcome to Earth and Mars

Summary

This introduction will expose students to Mars imaging software platforms so that students may become familiar with their navigation and imagery products.

Learning Goals

Students will be able to:

- Navigate and use both Google Mars and JMARS.
- Become familiar with imagery collections available (e.g., HiRISE, CRISM, THEMIS) via the above software programs.

Context for Use

This learning module is meant for adaptation in an introductory earth science course and/or planetary science course. The *In-Class Activities* can be easily adapted for homework when desired.

Description and Teaching Materials

In-Class Activity

In-Class Activity 1: Mars Analogs

Homework/Lab

Homework 1: Google Mars

Homework 2: Exploring Gale Crater

Homework 3: JMARS- Mawrth Vallis
“Potential landing site”

Homework 4: Meet the Scientist-
Who studies Mars?

Homework 5: Having fun with Mars
programs

Assessment

- Methods of assessment are within each individual *In-Class Activity* and *Homework*.

Teaching Notes and Tips

1. Before assigning Homework 1 or 2 spend some time exploring both Google Mars and JMARS with the students for a “first pass” exposure.

Mars for Earthlings

References and Resources

1. Image File: [Welcome to Earth and Mars](#)
2. JMARS Website: <http://jmars.asu.edu/>
3. Google Earth Free download: <http://www.google.com/earth/index.html>



Mars for Earthlings

Homework 1

Intro to Mars_MFE

Google Mars

Objective: Observe important features and “divisions” of the surface of Mars.

Introduction: This brief introduction will hone students’ observation skills to notice features on the surface of Mars and some of the major natural landscape features.

Getting Started

Use the web version of Google Mars

<http://www.google.com/mars/>

Notice that the map wraps (repeats), so students will want to crop the window so it just shows 1.

Exploring Mars

This initial flat plane projection map has 3 viewing options (upper right). The standard default is _____. Here, the colors represent the scale in units of _____. The other 2 viewing options are _____ and _____.

Click on Stories. What is the name of the Martian rift zone? _____. In the left column window, click on “glossary” and review the terms. A mountain is called _____ and a low plain is called _____. A high plain is called _____.

Click on Spacecraft. Why do the students think the spacecrafts were mainly in the “middle” of the planet? _____

Overall

Just looking at the color patterns & textures, if the students were dividing the planet into 2 parts, how would they be defined and what are their characteristics?

Location

Characteristics

1.

2.

Draw the boundary line between the two parts and have the students discuss their answers with one of their classmates (as assigned) and compare thoughts.

