



## Human Systems Design Project Lessons

### Websites

#### [Phoenix Mars Mission](#)

On this official website of the Phoenix Mars Mission, teachers can find background information about the mission and the planet Mars, as well as a link to the instruments used on the Phoenix and images taken by the Phoenix Lander. Click on the “Kids Section” to find a segment of the website just for students. Navigate through the different links found in this section to take a virtual tour of the Jet Propulsion Laboratory and find pages that feature music, artwork, and projects by other students involved or interested in the mission.  
( <http://phoenix.jpl.nasa.gov/index.php> )

#### [NASA: Current Missions](#)

This is a great website with a wealth of information about the Phoenix Mars Mission. Click on the “Phoenix” link for the latest news. Video, images, and information about the launch can also be accessed through this link.  
( [http://www.nasa.gov/mission\\_pages/phoenix/images/new-spacecraft-collection\\_archive\\_1.html](http://www.nasa.gov/mission_pages/phoenix/images/new-spacecraft-collection_archive_1.html) )

#### [Mars Exploration Program](#)

An excellent website sponsored by NASA that not only summarizes Mars’ characteristics, but also highlights some of the current missions associated with planet.  
( <http://mars.jpl.nasa.gov/allaboutmars/extreme/> )

#### [Phoenix Mars Lander](#)

On this PBS website, click on the link titled “Watch Phoenix Mars Lander” to view an excellent NOVA scienceNOW video about the Phoenix Mars Mission.  
( <http://www.pbs.org/wgbh/nova/space/phoenix-mars-lander.html> )

#### [Phoenix Mars Lander: Expert Q & A](#)

Dr. Leslie Tamppari is Co-Investigator and Project Scientist for the Phoenix Mars Mission at NASA’s Jet Propulsion Laboratory in Pasadena, California. Use this site to see how she answered selected viewer questions about the mission, what she and the other team members hope to find, and how she feels about a possible manned mission to Mars.  
( <http://www.pbs.org/wgbh/nova/space/tamppari-mars.html> )



### [How Robots Work](#)

This website offers background information about the importance of robots and robotic arms, especially in industry.

( <http://science.howstuffworks.com/robot2.htm> )

### [FETCH! Robot Rover](#)

This fun, interactive game sponsored by PBS kids, challenges students to build a Remote Operated Vehicular Errand Runner (R.O.V.E.R.) to retrieve and deliver items over different terrains.

( <http://pbskids.org/fetch/games/rover/game.html> )



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### Books

#### Mars Exploration

##### **Eyewitness: Mars (Eyewitness Books)**

By Stuart Murray. (2004, DK Publishing)

This guide to Mars contains a host of information about the planet. Of particular significance to this project is the recent data from NASA's ongoing explorations to Mars, including the search for water. The book features information about scientists who have contributed to human knowledge about Mars. It also features a variety of photographs of geologic features on Mars as well as its moons.

##### **Mars 3-D: A Rover's View of the Planet**

By Jim Bell. (2005, Sterling)

Although this book is written for advanced readers, it offers an opportunity to see Mars "up close and personal." The author displays and describes photographs of the Martian landscape such as rocks, craters, and other geologic features and formations. The photographs include 3-D and color images that were taken by the robot explorers Spirit and Opportunity.

##### **Robot Explorers**

By Ron Miller. (2007, Twenty-First Century Book)

The author describes why and how humans have invented robots to explore space. First he discusses the invention of the rocket and gives a chronology of the space race. Then he expounds on the ways that the uses of robots and other technologies have enhanced our knowledge of objects in space.

##### **Space Robots**

By Gregory Vogt. (1999, Bridgestone Books)

This book offers brief, informative overviews of the various ways that robots are used in space. The author discusses a number of uses for robots, including working on satellites in space, making repairs on the space station, working on Mars with the Viking and Sojourner robots, and exploring more distant planets.



## **Muscles and Bones**

### **Bones: Our Skeletal System**

By Seymour Simon. (2000, Harper Trophy)

This excellent book contains amazing facts about the 206 bones that make up the skeleton. It blends exceptional full-color photographs with clear, concise text.

### **Eyewitness: Skeleton (Eyewitness Books)**

By Steve Parker and Phillip Dowell. (2000, DK Publishing)

In this age-appropriate book, the structure and function of the human skeleton are described in detail. Comparisons are also made between the human skeleton and skeletons of other animals.

### **Skeleton and Muscular System**

By Steve Parker and Carol Ballard. (1997, Raintree Publishers)

The authors explain how the skeleton and muscles work together to allow a person to move around and lift everything from tiny objects to heavy weights.