

# MARS – THE RED PLANET

*This Learning Unit is inquiry-based and student-centred, allowing students to create and investigate their own research questions about the martian features. Students will practice technological skills throughout this activity.*

<b>PROCEDURE</b>	Students explore resources to find out what is known about the Planet Mars and hold a science conference to share their new information making use of different tools for their final presentations.
<b>GOALS</b>	<ul style="list-style-type: none"> <li>✿ To help students understand a text about astronomy</li> <li>✿ To develop students' vocabulary on the topic of astronomy and space exploration</li> <li>✿ To conduct internet researches and find information on specific topics</li> <li>✿ To promote cooperative learning</li> <li>✿ To hold a science conference</li> </ul>
<b>TOOLS AND MATERIALS</b>	<p>Use of different types of ICT in learning</p> <ul style="list-style-type: none"> <li>✿ Worksheets "Our Questions About Mars"</li> <li>✿ Current research materials on Mars</li> <li>✿ A variety of books, videos, app and CD-ROMs about Mars</li> <li>✿ Access to computers</li> <li>✿ Chart paper</li> <li>✿ Cards of astronomy</li> </ul>
<b>APPROACH-METHOD</b>	<p>The learning process will be interactive and inquiry-based . The Learning Unit is going to be based on the following approaches:</p> <ul style="list-style-type: none"> <li>✿ Constructivist approach</li> <li>✿ Research-based approach</li> <li>✿ Problem-solving method</li> <li>✿ Collaborative approach (group work, partnerships and group discussion, cooperative learning, peer to peer activity)</li> <li>✿ Competency -based approach</li> </ul>
<b>TIME</b>	1 hour for discussion and watching a video • 4 hours for research • 1 hour for the science conference
<b>ASSESSMENT</b>	<p>Formative Assessment</p> <p>The goal of formative assessment is to monitor students' learning to provide ongoing feedback.</p>

## **PREPARATION**

### **Brainstorming**

During the first step, there is going to be a free and general discussion about Mars to stimulate the students' interest about the topic.

The teacher, making use of the inquiry method, must provide the students with opportunities to explore, inquire and discover new learning about Mars.

- ✦ Define the topic
- ✦ Guide students plan where and how to gather data and information
- ✦ Gather together a variety of resources about Mars suitable to each group
- ✦ Hang up the worksheet called "Our Questions About Mars".
- ✦ Have students present findings through a tool (graph, charts, Powerpoint presentation, models and writing.....).

## **ACTIVITIES**

### **Step 1**

#### **CONDUCT RESEARCH**

**Students will watch a video and then they will write down questions about Mars**

- ✦ Tell students that they will watch the video called "Living on Mars with Paul Doherty"
- ✦ Discuss what was just shown or said. Replay the tape if necessary
- ✦ Have students write down the information in their journals

### **Step 2**

#### **REVIEW THE QUESTIONS FOR RESEARCH**

Focus students' attention on the questions they generated in the previous activity.

Explain that participants will be conducting research to try to find answers to those questions. As they go through the resources, they should write down new things that they learn about Mars in their journals.

### Step 3

#### USING PRESELECTED SITES ON THE INTERNET AND DOING YOUR OWN INTERNET SEARCH

Divide the class into groups: then ask each group to choose the topic of their search.

Allow time for students to do further research on Mars to discover any other facts that might prove useful to them in completing their assignment.

Tell students that they are going to compare Earth and Mars to find similarities between the two planets.

Students will learn about the scale and the distances from the Earth to the Moon and to Mars.

- ✦ Bookmark a list of websites about Mars (Symbaloo)
- ✦ Have students explore the selected sites with partners and record information related to their questions in their notebooks
- ✦ With the group, brainstorm a list of "key words" they could use to conduct a search on the Internet
- ✦ Discuss the importance of knowing the source of the information, and talk about the kinds of sites that are likely to have reliable information about Mars, such as NASA
- ✦ Allow participants to search on their own . Then, have students present their findings through a tool (graph, charts, Powerpoint presentation, models and writing)

### STEP 4

#### HOLD A SCIENCE CONFERENCE

When the groups have completed their works, have them choose one student from each group to present what they have learned about the Planet Mars. Explain to students that they will hold a science conference to share their knowledge of the Planet Mars with the students of the Second Year.