

Lost in Space

Summary

Students create fact sheets reported by a spacecraft lost in the solar system. Using this information and data charts (provided), other teams try to locate the lost spacecraft based on the clues provided.

Time Frame

2 class periods of 45 minutes each

Group Size

Small Groups

Materials

Each Student Needs the Following:

- Charting the Planets (see link below)
- Student Scenario Card (see link below)
- Blank Answer Sheet (see link below)

Each Group of Students Needs the Following:

- 2 Scenario Templates (see link below)
- 2 Blank Answer Sheets (see link below)
- Calculator
- Reference Books

Background for Teachers

In this lesson, students will compare the physical characteristics of the planets. The students will examine variables such as calculating average orbital distances within the solar system and drawing conclusions based on their examination of variables.

Note to teacher: Mass and temperature are not included on the chart 'Charting the Planets.' Students will have to consult other reference materials for this information.

Intended Learning Outcomes

- Use reference sources.
- Make predictions based on evidence.
- Analyze data and draw conclusions.
- Seek and weigh evidence before drawing a conclusion.
- Provide evidence to support inferences.

Instructional Procedures

DAY #1:

Set the stage by telling the students that NASA has lost a spacecraft. Voyager 6 has disappeared. We have received data back, but a definite location is yet unknown. Students are to use what they know about the planets as well as reference materials to determine where Voyager 6 is.

Distribute the Charting the Planets reference page (attached below) to each student. Give the students time to look over this information about the planets to become familiar with it.

Distribute a sample scenario card to each student. (See the attached Student Scenario Card below.) This example includes a set of facts from Voyager 6 pinpointing its location on Uranus. [Do NOT tell the students that Voyager 6 is at Uranus. They should use their fact sheets to

figure this out.]

Instruct students to examine the facts in their scenario cards. Interpret and record the data given and draw conclusions from the data. Their findings should be recorded on the Blank Answer Sheet attached below. (Refer to the Student Scenario Card - Answer Sheet attached below for teacher reference.)

Instruct students to write a statement of conclusion based on the interpretation of the data. Have students orally present their conclusions to the class.

Discuss any differences in conclusions. Refer students to the Charting the Planets page and other reference materials to help them identify the correct conclusion.

Now invite the students to create their own scenarios of a lost spacecraft. They are to give clues leading another group to locate their spacecraft on a planet (other than Uranus.)

Have students work together in their group to create two scenario cards for other groups to decode. (See the Scenario Template attached below.)

Discuss the nature of the clues in the example to help guide their efforts.

They should also use reference materials to obtain accurate information about the planets they choose to describe.

DAY #2:

Distribute the scenario cards created by the students the previous day. Have the groups work together to try to decode the clues and determine the planets being described. They should use the Blank Answer Sheet attached below.

Once the scenarios have been solved, have them returned to the original authors to be checked.

Conclude by discussing the importance of accuracy and using reference materials wisely.

Also summarize key characteristics of each of the nine planets in our solar system.

Assessment Plan

Have students work in their groups to generate a list of characteristics about each planet.

These lists should initially be created without reference materials to encourage discussion and memory, but reference materials may be used to finalize lists. The focus is not on memorizing facts; rather, on helping students to describe and compare the planets.

Authors

[KIRSTIN REED](#)