Lesson 5: Space Survey

Purpose: To demonstrate public opinion about space exploration and the use of robotics in space exploration.

Standards

NCTE/IRA Standards for English Language Arts
Standard 7- Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources (e.g., print and non-print texts, artifacts, people) to communicate their discoveries in ways that suit their purpose and audience.

National Science Education Standards
Science as Inquiry – Content Standard A
1. Abilities necessary to do scientific inquiry.
2. Understanding about scientific inquiry.
Science in Personal and Social Perspectives – Content Standard F
Science and technology in local challenges – new ideas and invention often affect other people; sometimes the effects are good and sometimes they are bad.

Principles and Standards for School Mathematics
Data Analysis and Probability
Formulate questions that can be addressed with data, and collect, organize, and display relevant data to answer them.

Overview
We have gained a great deal of knowledge from decades of robotic exploration and currently, robotic exploration is paving the way for human exploration of Mars. The knowledge gained from the process of developing missions to space and the information sent back from these missions has been invaluable to humans. However, many people believe that the money spent on these space missions should have been spent for Earthly needs like curing illnesses and fighting world hunger. This lesson will introduce your students to different opinions about space exploration and give them an opportunity to strengthen their data analysis skills.

Understandings
1. Robots gather different information (data) depending on their design and use.
2. Combining the information (data) gathered by a variety of robots gives us a broader and more in-depth understanding of our Earth and Solar System.
3. Our knowledge and understanding of our Earth and Solar System changes and/or expands as new discoveries are made.

Materials
1. Copies of “Space Survey” enough for each child to interview 4-5 adults.
2. Butcher paper

Supplemental Materials
1. NASA’s Vision for Space Exploration Web Site (http://www.nasa.gov/missions/solar_system/explore_main.html)

Time
Thirty minutes class time to introduce activity
Data collection time at teacher discretion
Forty-five minutes for data compilation and analysis

Directions
1. Discuss with the class that people all have different views and ideas. Share with them what a survey is and how it can be useful.
2. Decide as a group how many people each student will be surveying.
3. As a group, decide what the last two questions should be on the survey.
4. Set a date for all surveys to be returned and tallied.
5. Once surveys have been collected help show the students how to tally the results. 
   *This can be done on a class chart or broken up in some other manner.*
   *Students can work in groups.*

6. Students create a graph or pie chart to show survey results.

**For Younger Students**

For younger students you may want to just survey them and work through the process of posting the results. The students could then come up with two questions of their own or use the ones provided to survey their parents. Then work them through the process of tallying the results and creating a graph or pie chart.

**Extension**

Create survey for other topics in your school.
Space Survey

What do you, your family, friends and neighbors think about space? Should our government spend a lot of money and get to Mars as quickly as we can? Or are there more important things to spend money on in our country? Find out by taking a survey.

First you will want to find someone to survey. Then ask the person each of the questions below (write in two other questions of your own or ones that your classmates have chosen) and use tally marks under “Yes” or “No”. Record the next person’s answers in the same places. When you have finished, add up your tallies to get your results. Share your findings with your class.

<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>YES</th>
<th>NO</th>
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</thead>
<tbody>
<tr>
<td>1. Was sending a human to the Moon a good thing?</td>
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<tr>
<td>2. Should NASA build a base on the Moon before going to Mars?</td>
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<tr>
<td>3. Do you think NASA should send astronauts to Mars?</td>
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<td>4.</td>
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