

MAISA and the REMC Association of Michigan Best Practices in Technology Integration Plan

Title: Journey Into Space

Subject(s): Science

Intended Grade Level(s): 3, 4, 5

Description:

In this unit technology and curriculum are totally woven together. The concepts taught in this subject area unit are enhanced by the use of technology. Because of this integration, students are eager to learn and participate in the multi-facets of this unit.

Students keep a space journal in which important information for the unit is written. It includes definitions of terms, a report on their favorite planet, and data they collected on the planets while doing research or computer activities, as well as other activities throughout the unit.

Curriculum Benchmarks:

MI.MAT.III.1.E.2. Organize data using concrete objects, pictures, tallies, tables, charts, diagrams and graphs.

MI.SCI.I.1.E.1. Generate reasonable questions about the world based on observation.

MI.SCI.I.1.E.2. Develop solutions to unfamiliar problems through reasoning, observation and/or experiment.

MI.SCI.I.1.E.5. Develop strategies and skills for information gathering and problem solving.

MI.SCI.II.1.E.2 Show how science concepts can be interpreted through creative expression such as language arts and fine arts.

MI.SCI.II.1.E.3. Describe ways in which technology is used in everyday life.

MI.SCI.V.4.E.1. Describe the sun, moon, and earth.

Materials/Hardware/Software:

The technologies used in this unit were multimedia computers and a large TV monitor for presentations.

The following software titles were used to carry out the objectives:

Authoring

Kid Pix (used for creating a presentation)

ClarisWorks (to graph the distances of the planets)

Print Shop (to create a calendar depicting the change in the phases of the moon)

Research

Netscape Navigator (used to research planets on the World Wide Web and visit NASA's websites)

Groliers Multimedia Encyclopedia CD

Curriculum-based

Planetary Taxi CD (used to learn planet facts and distances)

Space Shuttle CD (used to learn about US space missions)

Activities/Procedures:

The main goal of this unit is to acquaint the students with the various members of the solar system, as well as to increase their interest in space exploration. This is accomplished through the following activities:

1. A general introduction to the solar system is done through the use of pictures and posters. A great source for actual photos of the planets, as well as other valuable information and activities, is available by writing NASA, and requesting a teacher's packet. These are available for different ability levels so be sure to specify which grade level you teach when requesting information.

The address is:

NASA

John F. Kennedy Space Center

Kennedy Space Center, Florida 32899

I have found NASA to be very prompt in replying to my requests.

2. Students write a letter to NASA requesting information. (See address above.) This is a good way to incorporate letter writing into your curriculum as well. I have used two different methods for mailing these:
 - a. Students address and send their own letters. This method allows them the excitement of receiving the packet in the mailbox at home. However, the packets arrive over a period of time, which inhibits the use of its contents in class.
 - b. The letters are turned in to the teacher and sent in one envelope to NASA. Send a cover letter, including the number of students. (I usually ask for a 2 or 3 extra copies to allow for new students who

might arrive during the teaching of this unit or other unforeseen circumstances.) All materials then arrive at the school boxed together, which allows you the opportunity to pass out and use materials at your discretion.

3. Students make a cover for their journal on the computer. Allow students to suggest appropriate titles and pictures for classmates to use in constructing their covers. (I try to use poster board, or similar heavier material, and then laminate it.)
4. Students will develop a journal which is maintained during the course of this unit. Some suggestions for its contents include vocabulary words and definitions, travel brochure, planet report, key concepts, and plans for a space craft or space station. Portions of this work, such as vocabulary words, planet report and key concepts may be compiled using electronic media.
5. Students will prepare a compilation of facts about the sun using various research materials. Students are divided into groups of 4. Through the use of encyclopedias, CD ROM, books, and internet access, each group compiles several interesting facts about the sun. Student groups share these facts with the rest of the class. The teacher then summarizes the facts on one sheet which is then placed in each student's journal.
6. Students will study the phases of the moon through the use of a calendar on which to record the visual appearance of the moon each night. This calendar is maintained throughout the unit. This can also become part of the journal.
7. Students will select one of the planets, research it and write a report. The final draft is to be written in their space journal. They will also research what the planet looks like and create a picture in their journal. This report and picture will be shared with others in the class.
8. Students will plan and construct a travel brochure to their planet. The brochure is to include pictures, a map, and brief, interesting facts about the planet. This becomes part of the journal. This can be accomplished by using a standard 8 1/2 x 11 piece of paper and folding it into thirds. The back side is left blank so that it can be glued in the journal.
9. Students will construct a spreadsheet to graph the planets' distances from the sun in order to visualize ever increasing distances between planets.
- 10.

11. Students will create a slide show depicting, through drawings and voice, the prominent features of each planet. Students will also write a cinquain poem to describe their planet. This will become another page in the show.

I have found the following websites to be very helpful and appropriate for gathering information for both teacher and students. Each of these sites will lead you to many other sites as well.

<http://athena.wednet.edu>

<http://www.nasa.gov>

<http://www.wlu.edu/~omcguire/earthx.html#gosky>

<http://nyelabs.kcts.org/>

This is the site for Bill Nye the Science Guy's Nye Labs Online. Clicking on "Episode Guides" will bring you to sites which include his experiments, facts, and book suggestions on various subjects relevant to space science. Clicking on "WebSearch" will take you to various planetary science sites available on the Web.

Assessment/Evaluation:

Students will be evaluated on the content of their completed journal, as well as their presentation, through their slide show, of the solar system.

Follow-up Activities:

Students will compile their work into a "space" journal that contains many of the assignments and projects worked on during this unit. They will also present their slide show to their classmates as well as other classes.

Name: Adriann Hulst
School: Dutton Christian School
Address: 6729 Hanna Lake Ave.
Caledonia, MI 49316