

# Journey Through Outer Space



WNY/Eisenhower/PDS Grant Project

2008/2009

Julie Arrigo and Rachel Broth

Public School Number 5

First Grade

## Overview

As our first graders go through the year, they are always intrigued by events and actions that take place in the sky. They ask questions about the moon, the earth, and the Sun. They ask about spaceships and rocket ships and stars. By exposing them to all the wonders of our solar system, we hope to answer their questions about space throughout our two month space odyssey.

To understand outer space, we will first expose the students to information about our planet Earth. We will use the globe to have them gain an understanding of what a planet is. We hope that our students will gain a better understanding of their place in our world and space, giving them strong foundations for further scientific investigation.

In addition to our science goals, we have many technological goals for our students. Because of our ever expanding technology-based world, it is important for our students to develop an understanding of how to use technology at an early age. The knowledge they gain now will be with them throughout their lives. We hope to introduce the students to computers and let them become comfortable with logging on, accessing information through a database, and using basic technological vocabulary. By the end of first grade, they will be able to log on to the West New York website, find an address bar, perform a Google image search, copy and paste an image from Google to Microsoft Word, navigate through WebQuests, and create and edit a Microsoft Word Document.

Over the course of two months, the students will meet for forty minutes, three days a week during their science block. They will have four computers available in their classroom. They will also be visiting the computer lab once a week for two months. Each student will be able to use their own computer while in the lab.

## Objectives

### Technology

#### Students will be able to:

- Identify keys on a keyboard; achieve correct standard finger placement on a keyboard.
- Use their provided user ids and passwords to independently logon to the district computers.
- Grasp and execute the concept of double-clicking to open a program (Internet Explorer, Microsoft Word).
- Open an Internet Explorer browser window and surf to a search engine; sort through search engine results.
- Perform a Google Image Search; copy and paste an image from Google to Microsoft Word.
- Navigate through WebQuests.
- Create and edit a Microsoft Word Document.

### Science

#### Students will be able to:

- Identify and locate the planets.
- Define and identify specific space vocabulary such as the sun, planet, star, moon.
- Identify the order of the planets from the sun.
- Complete a paper diagram of outer space.

# New Jersey Core Curriculum Content Standards

## Technology Literacy

TEC. K-4.8.1.A.2- Use basic features of an operating system.

TEC. K-4.8.1.A.3- Input and access text and data, using appropriate keyboarding techniques or other input devices.

TEC. K-4.8.1.A.8 –Use a graphic organizer.

TEC. K-4.8.1.A.9- Use basic computer icons.

TEC. K-4.8.1.B.1- Discuss the common uses of computer applications and identify their advantages and disadvantages.

TEC. K-4.8.1.B.3- Practice appropriate Internet etiquette.

TEC. K-4.8.1.B.5- Recognize the need for accessing and using information.

TEC. K-4.8.1.B.6- Identify and use web browsers, search engines, and directories to obtain information to solve real world problems.

TEC. K-4.8.1.B.7- Locate specific information by searching a database.

TEC. K-4.8.1.B.9- Solve problems individually and/or collaboratively using computer applications.

TEC. K-4.8.1.B.10- Identify basic hardware problems and solve simple problems.

## Science

SCI.K-2.5.9.A.1- Recognize that the sun supplies light and heat to the Earth.

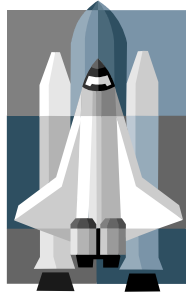
SCI.K-2.5.9.A.2.- Observe the patterns of day and night and the movements of the shadows of objects on the earth during the course of a day.

SCI.K-2.5.9.B.1-Recognize that the sun can only be seen during the day, but the moon can be seen sometimes at night and sometimes during the day.

SCI.K-2.5.9.C.1-Observe that the stars are many, scattered, and different in brightness.

SCI.K-2.5.9.C.2-Observe that the position of the stars, with respect to each other, is unchanging.

## Lesson 1: What is Outer Space?



**Objectives:** Students will participate in creating a KWL chart. (What they “know”, what they “want” to know, and what they “learned”).

Students will complete a journal entry of creative writing using correct grammar and complete sentences.

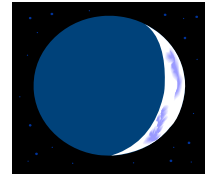
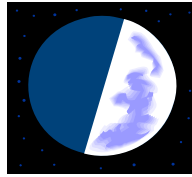
Students will create and cut and paste astronauts as they begin their “space exploration”.

**Materials:** chart paper, astronaut template, face picture of each student, computer, NASA website information, journal

- Procedures:**
1. The teacher will create a KWL chart with the class. (What do you know about space shuttle launches? What do you want to know about space shuttle launches?)
  2. The teacher will tell the students that they are going to take a space journey as they study astronauts, planets, the sun, moon, and the stars
  3. The students will create and draw an astronaut from a template, using their own picture to cut and paste as the face.
  4. The teacher will show a space clip of a space shuttle launch from the NASA website.
  5. Each student will write down a description of the launch and describe how they would feel if they were on the space shuttle.

**Assessment:** The students will be assessed on their participation in creating the KWL chart and on their journal entry using the 1<sup>st</sup> grade writing rubric. The teacher will be better able to develop the unit based on the students’ previous knowledge, misconceptions, and interests.

## Lesson Plan 2: Different Phases of the Moon



**Objectives:** Students will find the birthday moon for his/her birthday this year by looking on a website.

Students will create a moon card showing what the moon looked like on their birthday.

Students will classify the moon according to different phases.

**Materials:** Teacher resource- <http://btc.montana.edu.ceres/html/birthday1.htm>, moon worksheets, computer, moon calendar found at <http://www.google.com/moon>.

**Procedures:**

1. Help the children look up their birthdays this year on the moon calendar and have them draw what their moon will look like on that day on their moon card.
2. As children are waiting to use the computer, have them create moon phase booklets by pasting images of the moon from each day of the current month on the appropriate page.
3. When students are finished, have them place their moon card on the moon graph at the front of the room.
4. As a large group, discuss patterns.

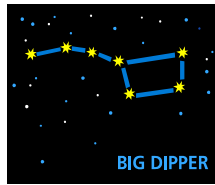
**Assessment:** Students will be assessed on their moon phase booklets:

Excellent- Student classified moon images under correct phases.

Good: Student classified most of the moon images under the correct phases.

Do over/Additional instruction: Student did not classify the images under the correct phases of the moon.

## Lesson 3: Constellations



**Objectives:** Students will learn about star patterns as the teacher reads “Zoo in the Sky” aloud to the class.

Students will be able to identify various constellations.

Students will create their own constellation and write a description to go along with their drawing.

**Materials:** Book- *Zoo in the Sky*, black construction paper, white crayons, glue, various size beads, sequins, or glitter, flashlights, star shape cutouts

- Procedures:**
1. Read *Zoo in the Sky*, by Jacqueline Mitton, aloud to the class, noting different constellations and their stories.
  2. Ask for student volunteers and direct each one to stand on one of the star shape cutouts that have been arranged on the floor in the shape of a specific constellation.
  3. Have each of the volunteers hold a flashlight and turn it on, pointing the flashlight straight up to the ceiling.
  4. Ask the rest of the class, the “stargazers,” to look up and name the constellation that appears on the ceiling.
  5. Students will return to their seats, and match up star patterns with their constellation (see attached activity sheets). These cards can be used as a matching game, or students can glue them on a piece of construction paper to make constellation booklets.
  6. Students will then create their own constellation at their seats using the materials provided. They will then write a short story or description to go along with their constellation.

**Assessment:** Students can be assessed on the matching of their constellation cards and written description.

## Lesson Plan 4: Modeling the Distance Between the Planets



**Objectives:** Students will demonstrate an understanding of the order of the planets.

Students will demonstrate an understanding of the relative distances of the planets from the sun.

**Materials:** 12" square of yellow construction paper, nine images of the planets on index cards (could use the images found in the students' space journals), display area (wall or poster board), 9 clothespins, clothesline, ruler

**Procedure:**

1. Have a student attach the sun image to one end of the display area.
2. Pin the clothesline from the sun to the other end of the display area.
3. Have students come up to the display and clip the planets onto the clothesline one at a time, using the following measurements. (Assist students in measuring the distances.)

Mercury 1"  
Venus 1.5"  
Mars 2"  
Earth 3"  
Jupiter 11.5"  
Saturn 19"  
Uranus 38"  
Neptune 60"  
Pluto 79"

4. Using the model, have the children complete the worksheet.

**Evaluation:** [www.aaa.com](http://www.aaa.com) [Worksheet](#)

## Lesson Plan 5: Keyboards and Typing



**Objective** Students will be able to correctly identify the keys on a keyboard.

Students will be able to accurately place fingers on appropriate keys.

**Materials** Computer (in lab)

**Procedure** 1. Upon arrival in the computer lab, teacher will ask students what the function, usage and importance of keyboards are.

2. Teacher will introduce important buttons to students and discussing their functions (enter, space bar, tab, caps lock, shift), Teacher will call out buttons and have students place finger on appropriate button.

3. To further their keyboard skills, students will be taught the "ASDF JKL;" approach to correct finger placement and will practice aligning their fingers on their computer.

**Assessment** To assess, teacher will call out keyboard buttons and students will locate them on their computer and point to them. To take this one step further, students will type a dictated sentence. (The cat is black.) To assess mastery of finger placement, students will be told to align their fingers and teacher(s) will walk around the room to visually assess. Teacher will also use a technology lesson rubric.

## Lesson Six: Copying and Pasting Images



**Objective** Students will be able to copy an image from Google image search tool into a word processing document.

**Materials** Internet access, access to Microsoft Word

- Procedure**
1. Teacher will model using the image searching function of Google to obtain images of superheroes and other items of interest.
  2. Teacher will revisit the use of double-clicking to open programs, opening MS Word, etc.
  3. Teacher will also give a mini-lesson on the copy/paste functions of a computer in the computer lab.
  4. With the help of the teacher, students will print their image.

### **Assessment/Activity**

As an assessment/activity, students will be expected to open Internet Explorer, browse to [www.google.com](http://www.google.com), use the search as an Image Search, search for "planets", copy a picture of their choice and paste it into a blank word document. The final word document, with clipart included is what is necessary for an acceptable product. Teacher will use a technology lesson rubric.

## Assessments

### Student Self-Assessment K - 2

Name \_\_\_\_\_ Date \_\_\_\_\_

My sentence(s) described  
outer space.



I used correct spelling of the  
words that I know how to spell.



My sentence made sense.



I edited for correct use of  
capital letters and punctuation.



My picture matched my sentence.



I published my sentence(s)  
and picture.



## Writing Assessment K - 2

Name \_\_\_\_\_ Date \_\_\_\_\_

Sentence(s) described the astronomy picture.



Words were spelled correctly.



A storyboard was completed.



Punctuation and capitalization were used correctly.







Picture matched the definition.



Sentence(s) and picture were published.



## Technology Lesson Rubric

Category				
Identifies components of technology	Student is able to identify and work with each of the technology components presented independently.	Student is able to identify most of the technology components, although is in need of teacher help.	Student has trouble listing any technology components, but can complete one or two with help.	Student cannot identify any technology components presented.
Participates in Discussion	Student always participates in topic discussion, offering ideas, prior knowledge and stories to enrich lesson.	Student, upon request, offers some ideas to contribute to classroom discussion.	Student is unwilling to participate in classroom discussion but offers minimal information with teacher guidance.	Student will not participate in classroom discussions.
Completes Assessment/ Activity	Student successfully and independently completes all aspects of the lesson's final activity/ assessment.	Student successfully and independently completes all but one or two of the final assessment/ activity aspects.	Student completes about half of the assessment/ activity.	Student completes less than half or none of the assessment/ activity.

## Self Evaluation: Julie Arrigo

As this project comes to a close, I feel as though I have been successful with teaching my students and myself about the solar system through technology! In the beginning I was a bit apprehensive about the amount of time and work we would have to put into this, but it was well worth it. I was surprised how quickly my first graders picked up on logging onto the computer and navigating the web. For the most part, they all could navigate independently. However, when it came time to type a sentence or two, it took the children much longer and some got frustrated. In the end, they were all able to complete their typed reports.

I feel that we were very fortunate to have the new computer lab at our school. It allowed all of the students to be on the computer at one time and made my life as the instructor much easier.

I am so proud of the students in rooms 109 and 110. They have become great experts in our solar system. Their projects and reports were out of this world! I am also very grateful to have been able to share this fun success with my colleague and friend, Rachel Broth.

## Self Evaluation- Rachel Broth

The knowledge and experience I've gained from working on the Eisenhower Grant has been invaluable. I feel it has been a great success for both me and my students. I felt a little overwhelmed at first, believing it would be difficult to teach first graders how to navigate through new technology. I was also concerned with the amount of work that went into planning the science curriculum. But, after Julie and I started to plan how we were going to approach it, I realized with some time and planning, our project was possible.

Overall, I feel that this project achieved what we set out for. Our students feel more confident using a computer. They can find websites using the address bar, they can perform Google image searches, navigate through a WebQuest, and type in a Microsoft Word document. In addition, they can identify and locate the planets in order from the sun and understand Earth's place and motion in the solar system. Our students really enjoyed working on their "planet project". They learned how to research and write a paragraph based on information researched from the web.

I think the Eisenhower grant went smoothly. The only thing I would change in the future is trying not to do too much with the students. I wanted them to learn as much as possible about space and technology and I had too many goals and objectives. Focusing on fewer objectives would let us really develop the focused skills better. I hope to have the opportunity to participate in this grant again. I am also thankful to have had the opportunity to collaborate with my friend and colleague, Julie Arrigo. It made this project easier and fun.

## **Bibliography**

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- The Moon Book, Gail Gibbons, First Scholastic Printing, 1998
- Our Solar System, Bill Nagelkerke, Learning Media Limited, 2008
- Our Stars, Anne Rockwell, First Scholastic Printing, 1999
- Planet Earth/Inside Out, Gail Gibbons, William Morrow, 1995
- Zoo in the Sky, Jacqueline Mitton, 2003

## **Webliography**

[www.amazing-space.stsci.edu](http://www.amazing-space.stsci.edu)

[www.kidsastronomy.com](http://www.kidsastronomy.com)

[www.kidzsearch.com](http://www.kidzsearch.com)

[www.nasa.com](http://www.nasa.com)

[www.space.com](http://www.space.com)

[www.google.com/moon](http://www.google.com/moon)

[www.btc.montana.edu.ceres/html/birthday.htm](http://www.btc.montana.edu.ceres/html/birthday.htm)

<a href="#">Introduction</a>
<a href="#">Task</a>
<a href="#">Evaluation</a>
<a href="#">Conclusion</a>
<a href="#">Home</a>

# Exploring Our Solar System

A First Grade WebQuest

By:

Mrs. Arrigo & Ms. Broth



## Introduction

You are on your way to our solar system. You are going to become an astronaut and find out all you can about your assigned planet. You will look up and find important information about your planet. During your journey you will complete a graphic organizer about your planet. Pay lots of attention to how your planet looks because after you write or type your report, you are going to make or draw your planet!

Get Ready to BLAST OFF! Click on the picture to watch a video about your planet.

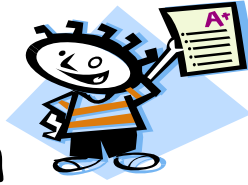


## The Task

Congratulations you have just gotten a job at NASA as an astronaut! They want you to explore your planet in our solar system. Now that you are officially NASA Astronauts you will have to find out all the information you can about your planet. You will research information about their size, distance from the sun, temperature, what they look like, whether they have water or not, and moons or not. During your journey you will be sure to write down your information on your [graphic organizer](#) so it will be easy for you to write your report.



# Evaluation



## Research Report : Rubric for Assessing Students' Planet Report

Teacher Name: \_\_\_\_\_

Student Name: \_\_\_\_\_

CATEGORY	4 Excellent	3 Good	2 Developing	1 Beginning
Introduction	Concise, well-written introduction	Summarizes report	Gives too little information	Disorganized, no information is in order
Research	All appropriate topics covered well Also includes interesting facts	Covers most of the topics/questions	Covers some of the topics/questions	Does not cover all topics/questions
Presentation	Very neat handwriting or typed correctly	Mostly neat handwriting	legible writing with some illustrations	Messy, can not read
Spelling and Grammar	Spelling and grammar are perfect	Only one or two errors	A few errors	Many spelling and grammatical errors
Timeliness	Project handed in on time	Project handed in a day late	Project handed in a few days late	Project handed in a week late

## Conclusion



Congratulations! You have completed the webquest! You are now an expert explorer of your planet! Begin working on your hands-on project!



