

## Lesson 1: My Place in Space

**Purpose: To deepen student understanding about their place in space, starting with their bedroom and extending out to the Milky Way.**

### Standards

#### NCTE/IRA Standards for English Language Arts

**Standard 1-** Students read a wide range of print and non-print texts...to build an understanding of themselves [and] acquire new information.

**Standard 5-** Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.

**Standard 12-** Students use spoken, written, and visual information to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information).

#### National Science Education Standards

##### Science as Inquiry – Content Standard A

1. Abilities necessary to do scientific inquiry.
2. Understanding about scientific inquiry.

##### Science and Technology – Content Standard E

Abilities to distinguish between natural objects and objects made by humans - Some objects occur in nature while others are designed and made by people.

### Overview

Your students probably know their address well enough that they can write it down without hesitating. But what about their global and universal addresses? Just like their home addresses, your students can write to describe their place in the universe. Pictures taken by robotic spacecraft and telescopes are helping us better understand our place in the universe. In this activity, students will learn the difference between natural and artificial satellites and use images taken by robotic spacecraft and telescopes to gain an understanding of their place in space.

### Understandings

1. Our knowledge and understanding of our Earth and Solar System changes

and/or expands as new discoveries are made.

2. Robots gather different information (data) depending on their design and use.
3. 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.

### Materials

1. Me on the Map, Joan Sweeney, ISBN 0-590-10705-4
2. My Place in Space, Robin and Sally Hirst, ISBN 0-531-07030-1
3. Black construction paper 12” x 18”, cut in half lengthwise, 2 strips per student
4. Copies of drawing and image sheets for each student (templates included)
5. Glue or glue sticks
6. Pencils
7. Markers, crayons, colored pencils, etc...
8. Ribbon, string or yarn, 27” lengths one per student
9. Index cards, 1 per student

### Supplemental Materials

1. A Spacecraft Tour of the Solar System—Slide Show by the Lunar and Planetary Institute  
[http://www.lpi.usra.edu/publications/slidesets/ss\\_tour/ss\\_tour\\_index.shtml](http://www.lpi.usra.edu/publications/slidesets/ss_tour/ss_tour_index.shtml)
2. Me and My Place in Space, Joan Sweeney, ISBN 0-517-88590-5
3. There’s No Place Like Space, Tish Rabe, ISBN 0-679-89115-3

## Time

Two 20-minute sessions to read and discuss books

Five 30-minute sessions to cover the 5-step writing process listed below:

1. Pre-Writing Process
2. Drafting
3. Revising
4. Edit
5. Publishing (Final Draft)

## Directions

1. Read and discuss the two books.

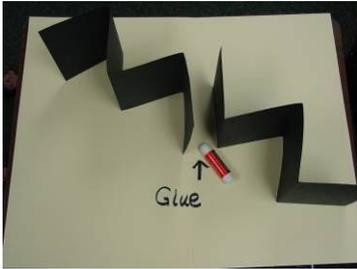
*In the discussion, you may wish to ask your students what satellites are. There are two types of satellites, natural and artificial. Natural satellites, like the Moon (satellite of the Earth) and the Earth (satellite of the Sun), occur naturally and are not built by humans. Artificial satellites are built and placed in their locations by humans.*

2. Have students write a friendly letter to a friend or relative, explaining where they live. Follow the 5-step writing process. *You may wish to create your universal address as a class first. Include the following: room number, building, street, town, county, state, country, continent, planet, Solar System, Orion arm of Milky Way galaxy, galaxy, and universe. The students may wish to write their letter with their room and home address.*
3. Show the students the drawing and image sheets.  
*While showing the students the drawing and image sheets, you may wish to discuss how each drawing made by the students will help describe their place in space.*

*Also, discuss how the images of the U.S. and North America were not taken by humans, but by robotic spacecraft placed into orbit around the Earth and how the galaxy and universe images were taken by robotic telescopes.*

4. Have the students color a map of their room, on the “My Space” block, a picture of their house on the “My House” block, and a picture of themselves on the “Me” block. Have the students design a book cover with the words “My Place in Space by *child’s name*” on the index card.
5. Have students cut out all of the images and illustrations. *You may wish to find local images of your town/city and state. NASA has satellite images of your city/town and state at <http://worldwind.arc.nasa.gov/bluemarble/>. The Earth image was taken by the Apollo 17 astronauts. There are no true images of the Solar System, of course, because we cannot send spacecraft out far enough to take such a picture. The galaxy image used in this lesson is the Andromeda galaxy. It was chosen because, like the Solar System, we cannot take a picture of our own galaxy and the Andromeda galaxy is very similar to our own Milky Way galaxy. The picture of the “universe” is the Ultra-Deep Field image taken by the Hubble Space Telescope. This picture shows a tiny fraction of the entire universe, but helps represent the hierarchal structure of the large-scale universe – the universe contains galaxies and galaxy clusters.*

6. Accordion book construction can be done before hand or with the students depending on teacher preference. Fold each construction paper strip in fourths accordion style. Then glue the last panel of the first strip to the first panel of the second strip.



7. Have the students paste all the images to the panels of accordion book. *Images*

*should go sequentially from the smallest scale, me, to the largest scale, the Hubble Ultra Deep Field.*

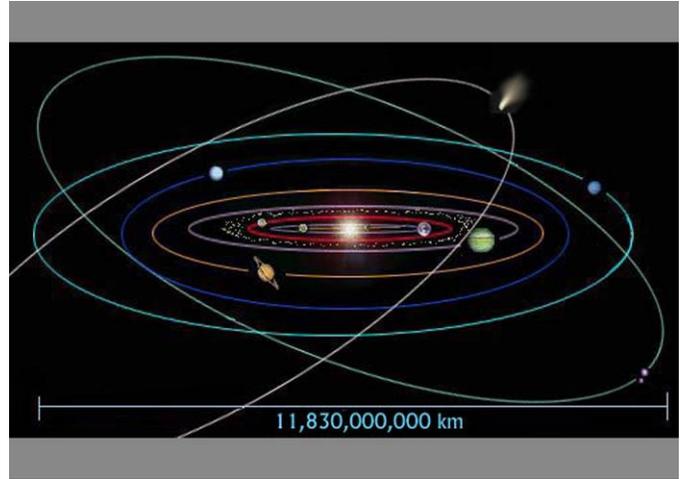
8. Punch hole in the right side of cover and thread ribbon, string or yarn through to secure book closed.



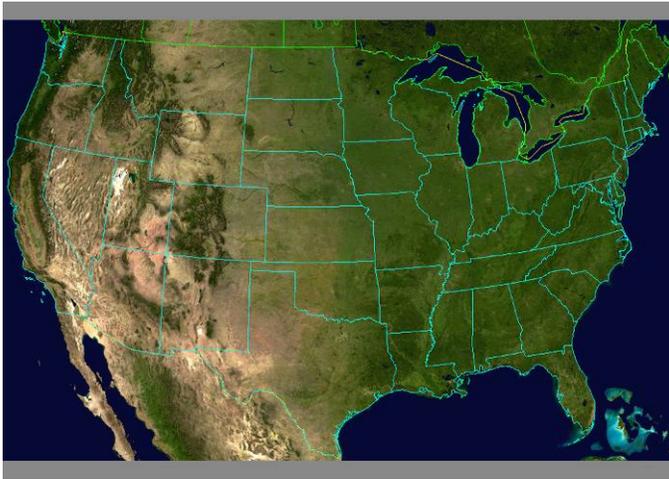
9. Take home book and share with family.



Galaxy



Solar System



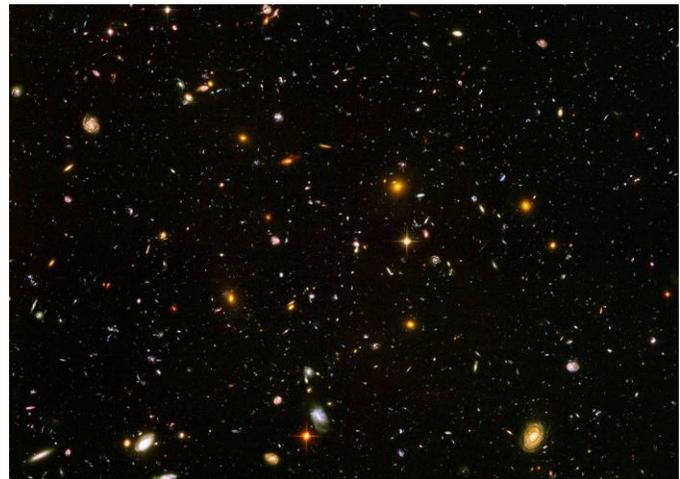
Country



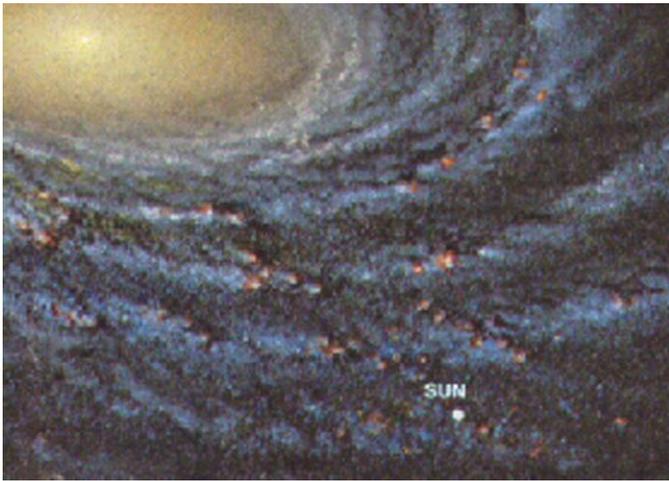
Continent



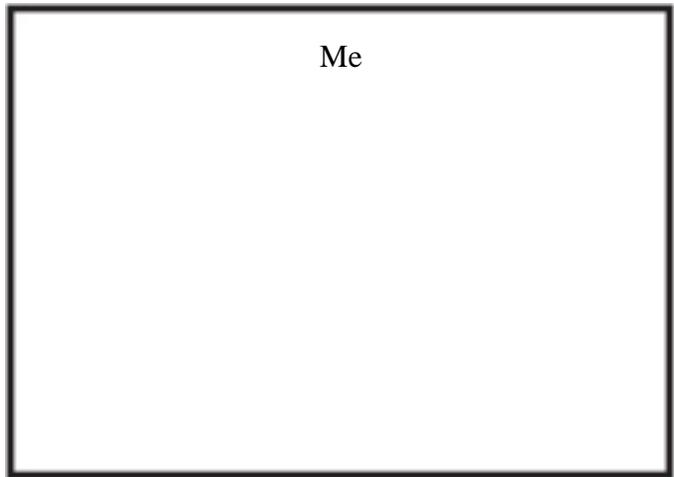
Planet



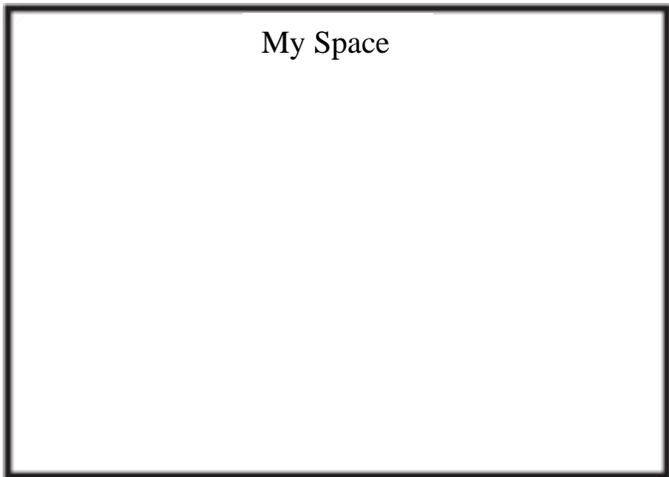
Universe



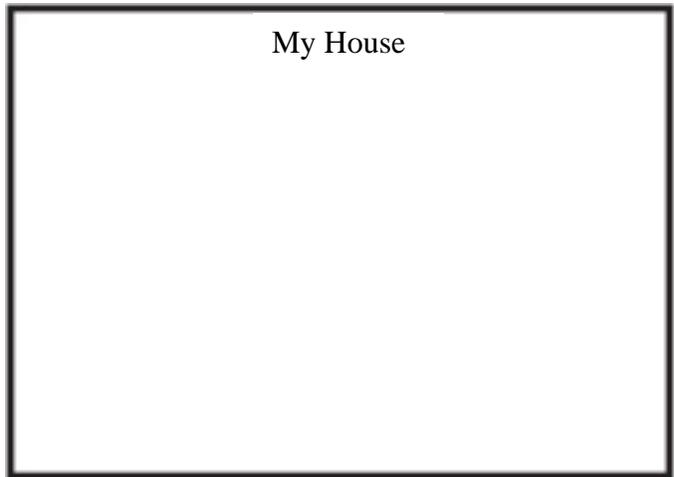
Orion Arm of Milky Way



Me



My Space



My House



City/Town (Tucson)



State (Arizona)