

Title: Planetary Mobile

Grade Ranges:

X K-4

5-8

9-12

Subject Tag:

Science: Stars and Planets

Synopsis:

As an independent lesson or part of a science unit, students will become familiar with the names of the nine planets in the solar system. A mechanical model can be used prior to this project to demonstrate rotation and revolution of the planets. To better understand the size and positions of the planets, students will construct mobiles using construction paper cut-outs of the planets suspended with yarn from a hanger.

Keywords:

rotation, orbit, revolving, planets, sun, solar system, planetary models

Body:

1. Supply students with precut templates made of cardboard or poster board with the following diameters: sun (6 in.); Saturn and Jupiter (4.25 in.); Uranus and Neptune (3.75 in.); Earth and Venus (3 in.); Mercury and Mars (2 in.); Pluto (1 in.).
2. Supply the students with multi-colored construction paper, scissors, yarn, glue or tape, markers or crayons, and one hanger.
3. Display a chart with the planets listed in order from the sun, and the size template that should be used. Instruct the students to use the correct template to outline a circle for the sun and each planet on a variety of colored construction paper. Emphasize that the sizes are relative according to scale and not exact.
4. When they have cut out all the shapes, students should label them, attach them to a piece of yarn and suspend them from the hanger in the right order from the sun.
5. In closing, emphasize that this is a model, and that the planets do not line up in a straight line in space.

Related Links:

The Solar System

<http://www.germantown.k12.il.us/html/solsys.htm>

This is a very colorful and visually active site for elementary students. It has information about the planets as well as excellent graphics and pictures.

Windows to the Universe, at the University Corporation for Atmospheric Research (UCAR).

<http://www.windows.ucar.edu/tour/link=/windows3.html>

This site has information on each planet and comparative information of all the planets in the forms of tables. The information is offered on three levels: beginner, intermediate, and advanced.

Features:

- ___ Contains special education tips
- ___ Quick Activity (less than 30 minutes; story starter)
- ___ Requires Internet access for students to complete

Objectives:

After completing this lesson, students will gain a better understanding of the positions and sizes of the planets through construction of a model. They will be able to label the planets with the correct names and arrange them in the correct order from the sun.

Standards:

NY: 4.1 Physical Setting: The earth and celestial phenomena can be described by principles of relative motion and perspective.

NYC: S3b. Objects in the sky, such as Sun, Moon, planets, and other objects that can be observed and described; and the importance of the Sun to provide the light and heat necessary for survival. **S4a.** Big ideas and unifying concepts, such as order and organization; models, form and function; change and constancy; and cause and effect. **S8c.** A design, such as building a model or scientific apparatus.

CT: 10. The Universe: Students will understand that the Earth is a unique, dynamic member of the solar system, located in a galaxy within a changing universe.

NJ: 5.1: All students will learn to identify systems of interacting components and understand how their interactions combine to produce overall behavior of the system. **5.11:** All students will gain an understanding of the origin, evolution, and structure of the universe.

Prerequisite Skills:

1. Students must be familiar with the concept that the planets and sun are part of the solar system
2. Students must be familiar with the concepts of rotation and revolution as they pertain to the movement of the planets

Time Required:

30-45 minutes

Technology and Materials Needed:

1. precut round templates from multi-colored construction paper
2. yarn, glue or tape, scissors, colored markers or crayons
3. one hanger per student
4. chart with instructions

Assessment Criteria:

1. Check for accuracy in following directions, cutting the correct number and size of circles, and labeling with planet names.
2. Check for degree of completion and accuracy in attaching the circles to the hanger in order.

Recommended Lesson Plan Review Date:

NA

Review Comments:

NA