

Tripping Through Our Galaxy

Lesson Two:

Title: Move Like A Planet

Grade: 3rd

Subject: Planets and the Solar System

Topic of Lesson: Objects in space

Standards

Content Area: Science

Standard #: 4: Earth and Space Science: Students know and understand the processes and interaction of Earth's systems and the structure and dynamics of Earth and other objects in space.

Benchmark/Grade Level Expectancy: Recognizes objects in space and interaction with Earth's systems

- Label objects in the sky that can be viewed unaided
- Identify sun, moon, and stars
- Associate sun with daylight and stars with twilight/evening
- Identify the sun as a source of heat and light
- Describe the effects of sun's light and heat on living things
- Recognizes that earth's rotation causes the sun to appear differently throughout the day
- Recognize that objects in the sky have patterns of movement
- Identify the moon's appearance using quantitative labels
- Distinguish between fiction and fact regarding space exploration
- Recognize how aerospace design impacts space travel
- Identify ways in which basic needs can be met in space

Content Area: Physical Education

Standard #: 1: Students demonstrate competent skills in variety of physical activities and sports.

Benchmark/Grade Level Expectancy: Recognizes objects in space and interaction with Earth's systems

- demonstrating even rhythmic loco motor movements: walk, run, leap, hop, and jump and uneven rhythmic locomotive movements: gallop, slide and skip
- demonstrating dynamic and static balance, with control, on a variety of moving and stationary objects or equipment;
- demonstrating mature patterns in the fundamental manipulative skills: throw, catch, kick, trap, roll, dribble, strike and volley;
- developing patterns and combinations of movement into repeatable sequences;
- demonstrating the ability to change directions (dodge), transfer weight (feet to hands) and fall with control.

Content Area: Math

Standard #1 Students develop number sense and use numbers and relationships in problem-solving situation and communicate the reasoning used in solving these problems.

Benchmark/Grade Level Expectancy:

- construct and interpret number meanings through real-world experiences and the use of hands-on materials

- represent and use numbers in a variety of equivalent forms
- know the structure and properties of the real number system
- using number sense, including estimation and mental arithmetic, to determine the reasonableness of solutions

Overview

Objective: For the students to understand the location and difference of the inner and outer planets using math, physical education and science concepts.

Assessment Plan: This is an informal assessment. Assess the students as they are placing themselves on the orbit lines and start moving. In addition, verify that the math computation is correct for each student.

Learning Context: This is the second lesson about the planets and their placement, movement and differences..

Time Allotment: 40-50 minutes

Instructional Materials:

Teacher and Student Materials:

- Chair
- Planet cut outs
- Math worksheets
- Pencils
- Planet poster

Sequence of Procedures (This is where the teaching begins)

Opening

Gaining Attention: Teacher will direct the students' attention back to the KWL chart and will discuss what the students know about the planets. This will be done as a whole class to reinforce planet knowledge. Next, divide the student into two groups based on the planets they are doing their report on in class. Hand each student in group a picture of the planet they are working on for their report. Tell the students that the class is going outside to do an activity and explain the purpose of the activity. This should be done so the students think about what they might be doing outside.

Assessing Prior Knowledge: Discuss mathematically how to compute age and weight. The whole class discussion on planets will reinforce learning. Lastly, ask the students who have pictures to put themselves in order and see if they can get the planets in the right order.

State Purpose (Objective) of Lesson: To answer questions about the planets. Students to see that the planets do not move in a straight line around

the Sun and that the planets orbit in egg shape and not a circle. In addition they need to see how math ties into science.

Body

Teacher Input(s): Go over the mathematical section of the worksheets so the students know how to do each part. Once we have gone over each section let them loose on their worksheets. When each student is done go over the worksheets and talk about why you would be the age you are on the different planets or why you would weigh something different on a different planet. Teacher guides the large discussion. Once the whole class has discussed the inner and outer planets place the planet pictures on the board. Then go in to the asteroid belt that divides the planets. Discuss with the students how the planets orbit. Then show each student the orbit their planet makes and talk about which planets move faster or slower around the sun and where they should be in relation to the sun and the planets around them. Divide students into two groups. Each group will complete the exercise of physically being a planet outside. They will orbit the Sun as if they were the planet. This exercise enables the students to see and feel the difference of planet rotation.

Guided Practice(s): As the students are orbiting the sun discuss with them the movement of their planet and how it affects the speed of the planet.

Checks for Understanding: Reviewing the math worksheets using the document camera to display the math and results. Then they will write a short paragraph about the difference between their actual weights on Earth compared to other planets. Next have a class discussion about what was done outside. Talk about the shape of the orbit and the effects that has on the each planet. Class discussion will result in student understanding of concepts.

Assessment (Independent Practice)

This will be an informal class discussion assessment. Make sure they understand the math computation and differences, inner and outer planets and the orbit shape of the solar system and the affect it has on the planets.

Closure

Close the lesson by the reviewing what was done and verify the objective of the lesson was met.

Reteaching Activities:

There will be many other planet lessons throughout the unit. Discuss the orbits of the planets.

Extension Activities:

The centers will help in force the idea of how the planets orbit.

References:

Macmillan McGraw Hill

The Planets in Our Solar System. Branley, Franklyn. HarperTrophy, 1998.

http://www.spacegrant.hawaii.edu/class_acts/Weight.html

http://spacegrant.hawaii.edu/class_acts/HowOld.html

Planet pictures from the internet

