

Bringing the Solar System to Life

An Educator's Reference Desk Lesson Plan

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Endorsed by: These lesson plans are the result of the work of the teachers who have attended the Columbia Education Center's Summer Workshop. CEC is a consortium of teacher from 14 western states dedicated to improving the quality of education in the rural, western, United States, and particularly the quality of math and science Education. CEC uses Big Sky Telegraph as the hub of their telecommunications network that allows the participating teachers to stay in contact with their trainers and peers that they have met at the Workshops.

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Grade Level(s): 2, 3

Subject(s):

. Science/Astronomy

Overview: The Solar System is a very abstract concept for primary age children. This activity was designed to show children the ideas of "revolution" and "rotation".

Purpose: This Science activity, part of a unit on the Solar System, uses role playing to demonstrate the universe and its connection to the sun.

Objectives:

As a result of this activity, students will be able to:

0. Make models to represent the planets in comparative size.
0. Use their models to demonstrate revolution and rotation of the planets around the sun.
0. Give definitions of "revolution", "rotation", and "orbit".

Materials:

0. one yellow punch ball
0. nine balloons of different colors
0. chalk or string to mark orbits

0. resource material to check orbits of the nine planets

Activities and Procedures:

0. Children will blow up a yellow punch ball to its fullest and balloons of nine different colors to sizes representing the nine planets.
0. Take the class outside or go into the gym inside. Have nine paths marked on ground or floor with string or chalk.
0. Have one student hold each balloon. Another student will hold the yellow punch ball which represents the sun.
0. The "sun" stands in the middle of a circle. The other children take their places on the marked paths. Teacher will need to give each child the name of his/her planet and direct him/her to the correct place.
0. Begin the experiment by having children walk in their path or "orbit" around the sun. Stress that the planets never leave their own orbits. This travel around the sun is called "revolution". This term should now be introduced.
0. After the children have orbited the sun once, bring in the added concept of "rotation". While moving around the sun, the children should also start to spin around like tops. (Caution them against becoming dizzy.) This demonstrates "rotation". Tell children that it takes one year for the earth to revolve around the sun, and it takes one day for the earth to rotate on its own axis.
0. Point out that "rotation" or spinning on one's own axis takes much less time than going all the way around the sun, "revolution."
0. Give all children in the class a chance to try the experiment.

Tying it all Together:

After returning to the classroom, demonstrate the principle just learned with the globe. Let someone spin the globe and walk around a "sun" to show "rotation" and "revolution". For children who have trouble keeping "rotation" and "revolution" straight, here is a tip: the middle sound of "rotation" has the same vowel sound as "day" and it takes the earth one day to rotate. This same type of activity can be used to show the relationship between the moon and the earth. Role play is an excellent way to teach primary children and makes these abstract concepts come to life.