The Solar System

Grade Level: 6
Strand: Understanding Earth and Space Systems
Topic: Space

Specific Expectation:

- Describe the physical characteristics of components of the solar system
  -The sun and the planets.
- Describe the relative distance, size and surface of the sun and planets.
- Describe, using a model, the features of the solar system.
- Describe using models, how the earth's rotation causes the cycle of day and night, and how the earth's revolution causes the cycle of the seasons.

Materials Needed

Solar System PowerPoint Presentation

The Teacher's Example

- 10 assorted sized Styrofoam balls for the shapes of the planets
- One hanger
- String
- Paint
- Glitter
- Push pins
- Scissors
- Black and yellow construction paper
- Styrofoam stars
- Pipe cleaners

For the Children

- Template of the planets or have the children create their own planets out of assorted colors of construction paper
- A ball of string
- Hangers
- Paint, crayons, pencil crayons or markers
- Scissors
- Whole punch
- Poster of the solar system

Procedure

- The lesson would be used for a basic introduction of the solar system.
- Begin with a lesson introducing the Sun, Earth and the names of the planets.
- Proceed by displaying the model you have created and point to the planets. Review with the students the order and placement of each planet. To help with the placement of the planets, remember the sequence **M**y **V**ery **E**xcited **M**other **J**ust **S**erved **U**s **N**ine **P**izzas

- Introduce each plant one at a time and review the names again, the relative distance, surface and size of each planet.
- Distribute the templates of the planets. Instruct the children to color or paint each of the planets.
- After the children have finished coloring have them label each of the planets.
- Each child is given a hanger and string to tie their planets to the hanger.
- If needed, the children can look at the poster provided or the teacher's model to arrange their planets in the correct order on their hanger.
- The children's names can be written on a piece of tape and attached to the top of the hanger.
- When the students are finished, the models can be hung up around the classroom.

Scientific Principle

The universe is made up of billions of galaxies. Each galaxy is made up of hundreds of billions of stars. Many of these stars have planets rotating around them. The group of planets spinning around a star is called a solar system. Our sun is a star located in a galaxy called the Milky Way; it has nine planets revolving around it. These nine planets are what make up our solar system. The order of the planets, starting with the planet closest to the sun: Mercury, Venus, Earth, Jupiter, Saturn, Uranus, Neptune and Pluto. Each planet rotates and revolves around the sun; this is called orbiting the sun. Similar to the planets, the sun also spins and rotates. It takes 27 days for the sun and planets to complete one single rotation. All planets and the sun in the solar system spin on their axes. The earth rotates one time, every 24 hours. The part of the Earth, during this rotation, that is facing the Sun experiences day time, while the portion facing away from the Sun experiences night. This is why night and day occurs. The reason we have seasons is a result of tilt from the Earth's axis. This tilt is what gives us the four seasons of the year. Since the axis is tilted, different parts of the world are oriented towards the Sun at opposite times of the year. Summer is warmer than winter because the Sun's rays hit the Earth's surface at a more direct angle than during the winter. During the winter, the Earth is rotated and tilted away from the sun. Therefore, the seasons are due to the Earth's tilt.

References

- http://www.uvm.edu/~vbharath/planetorder.html
- http://www.nasa.gov/lb/audience/forkids/activities/A_Planet_Cutouts.html
- Spinning Through Space The Space by Furniss
- First Facts About the Solar System by Michael Teitelbaum
- Space by Valerie Wyatt and Matthew Fernandes
- Discover Stars and Planets by Toni Eugene

Opportunities and Other Considerations

- Research each planet and group presentations
- Constellations
- Life on other planets
- Eclipse
- Stars

Glossary

Universe – (YOO-nuh-vuhrs): All the stars, galaxies, solar systems, and interstellar space.

Star – (STAHR): A ball of gas that is visible in the night sky. Our sun is a medium-size star.

Planets – (PLAN-uht): A body in orbit around a star that is not large enough to glow with its own light.

Solar System – (SO-luhr-SIS-tuhm): A star, such as our sun, and the planets, asteroids, moons, and comets that are held by gravity around the sun.

Milky Way – The sun is on the edge of a galaxy of a hundred billion stars that we call the Milky Way. The Milky Way is only one of the millions of galaxies in the universe. The Milky Way is 100,000 light years in diameter.

Orbit – (AHR-buht): The path of a planet or other object around a larger object, such as the sun.

Galaxy – (GAL-uhk-see): A large grouping of solar systems, stars, and interstellar space. These are billions of galaxies in our universe.

“Just as your family is made up of separate people

Who are related, the solar system is made up of different

objects that are related to the Sun.”