

# Space and Planet Science

(Grades 3 – 5)

## Our Solar System

<b>State Standards</b>	<p>This Lesson Plan will address several state standards. This activity will address standard <u>ES.1.5</u> to help the students understand and explain the relationship between planetary systems, stars, multiple-star systems, clusters, galaxies, and galactic groups in the universe.</p> <p>For Standard <u>6.3.1</u> the students will compare and contrast the size, composition, and surface features of the planets that comprise the solar system, as well as the objects orbiting them. Explain that the planets, except Pluto, move around the sun in nearly circular orbits.</p> <p>From doing this activity, the kids will address standard <u>6.3.4</u> and be able to explain that we live on a planet which appears at present to be the only body in the solar system capable of supporting life.</p>
<b>Objectives</b>	<p>Students will learn different terms and aspects of our Solar System. They will then build a model of the Solar System using simple materials to represent the eight planets of our Solar System and Sun.</p> <ul style="list-style-type: none"><li>• Given a diagram of the Solar System and an explanation of several aspects and terms, the students will be able to build their own Solar System with the materials given by you (the teacher).</li><li>• Given definitions of important terms of the Solar System from the book and you (the teacher), the students will be able to understand different concepts.</li></ul> <p><b>This activity should take approximately 60 minutes to complete.</b></p>
<b>Materials</b>	<ul style="list-style-type: none"><li>• Different sized Styrofoam balls (at least one for each student)</li><li>• Toothpicks</li><li>• Markers</li><li>• Blank labels with scissors (optional)</li></ul>
<b>Procedures</b>	<ol style="list-style-type: none"><li>1. First you will show the class a video clip on the computer from “Twitvid.com” that will go along with the activity, called The Known Universe (by AMNH): <a href="http://www.twitvid.com/D31D1">http://www.twitvid.com/D31D1</a> - this will allow the students to grasp how large our universe really is and how the planets of our solar system relate to it.</li><li>2. You will then discuss the importance of our Solar System and why the students need to learn about it. You will go over important terms that the students will need to know in order to understand what they are learning. Some of these important terms include: orbit, galaxies, satellites, sun, moons, and planets.</li><li>3. To begin this activity, you should provide each student with one large Styrofoam ball, at least eight smaller Styrofoam balls, a handful of toothpicks (eight or more), several different colored markers, and blank labels if the students want to label the name of each planet.</li><li>4. After handing out all of their materials, the students may begin to color</li></ol>

their Styrofoam balls each a different color to differentiate between each planet and the Sun (represented with the larger Styrofoam ball). For example, the Sun can be colored yellow, the Earth colored blue, etc.

5. After this is finished, you will have the students insert a toothpick into each smaller Styrofoam ball by poking the toothpicks into the sides of the balls; this will allow the “planets” to be connected to the “Sun” and for the students to understand the concept that the planets orbit around the Sun.
6. Each planet can now be connected to the sun by inserting the opposite end of the toothpick (different end from smaller balls) into the larger Styrofoam ball. All eight should be lined up and spaced out evenly along the side of the Sun.
7. If there is enough time, you may have them use the blank labels and cut them with the scissors provided into small enough pieces to fit on the planets and Sun. They can then write the name of each planet on the label, along with numbering them in order from closest to the Sun to farthest away from the Sun.
8. You should then explain to the students that their models only represent the fact that the planets orbit around the Sun, it does not show correct representation of how far away each planet is from the Sun. You should also explain that Pluto was once the ninth “planet”, but it was recently discovered to be a dwarf planet.
9. Lastly, follow up questions may then be asked and discussed, such as, how large they think the universe really is, why it is important to know the planets and study our solar system, why the planets of our solar system orbit the Sun, etc.