

## **BUILDING A 3D SOLAR SYSTEM**

*Written by Susan Odere*

### **CLASS DESCRIPTION**

In this class, students will stimulate building their own solar system for better understanding.

**TOTAL CLASS TIME:** 2 Hours

### **CLASS OUTCOME**

By the end of this class, students will build a 3D solar system

## **INTRODUCTION**

### **Making a Solar System Model**

In this space science class, kids will learn that planets orbit the sun. Building a model of the solar system, including the sun, eight planets and Pluto, reinforces this concept and provides children with a hands-on approach to learning the names and sequence of the planets. Depending on the age of the students, a model of the solar system can be detailed and accurate or simple to illustrate relative distances of the planets from the sun.



## **MATERIALS NEEDED**

- Foam Balls: size: 6", 5", 4", 3", 2.5" (2), 2", 1.5", 1"
- Paint: yellow, orange, red, lemon ice, green, Caribbean blue, burgundy, dark blue, white, light orange
- 14" Metal Macrame Ring Fishing line Chenille Stems: red, orange, black
- Paintbrush
- Straight Pins
- Scissors
- Wire Cutter
- Glue Gun

### **DIRECTIONS**

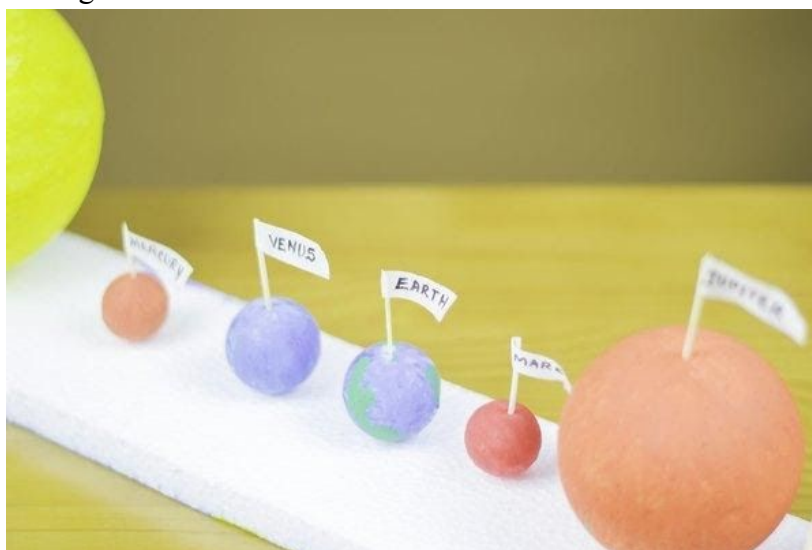
1. Paint the planets as indicated. Allow to dry. Ball Size and Color: 6" Sun Yellow/Orange Swirl 5" Jupiter Orange/Red Spot 4" Saturn Lemon Ice 3" Neptune Orange 2.5" Venus Green 2.5" Earth Caribbean Blue 2" Mars Burgundy/Yellow Swirl 1.5" Uranus Dark Blue/White Swirl 1.5" Mercury Light Orange
2. Cut the metal ring with the wire cutter. Bend the ring into a long stretched spiral shape.
3. Cut lengths of fishing line about 22" long. Tie the lengths of fishing line around the metal ring evenly spaced. Tie a pin to the end of each line. Glue the sun to the line at the center of the spiral. Glue the planets to the lines around the sun.
4. Tie lengths of fishing line from four spots around the top of the metal ring for the hanger. Hold the lines up and slide them around the ring to balance the mobile. Once the mobile is balanced place a dot of glue on each of the lines to keep them in place.
5. Trim any fishing line ends from the planets and place a dot of glue to secure each planet in place.

### **ALTERNATIVE PRACTICAL PROCEDURE**

**STEP 1:** Write "Sun" and the name of each planet on a strip of masking tape, then set it set aside. Cut nine bamboo skewers in the following lengths: 2.5 inches, 4 inches, 5 inches, 6 inches, 7 inches, 8 inches, 10 inches, 11.5 inches and 14 inches. Lay them in order of their lengths for easy identification.



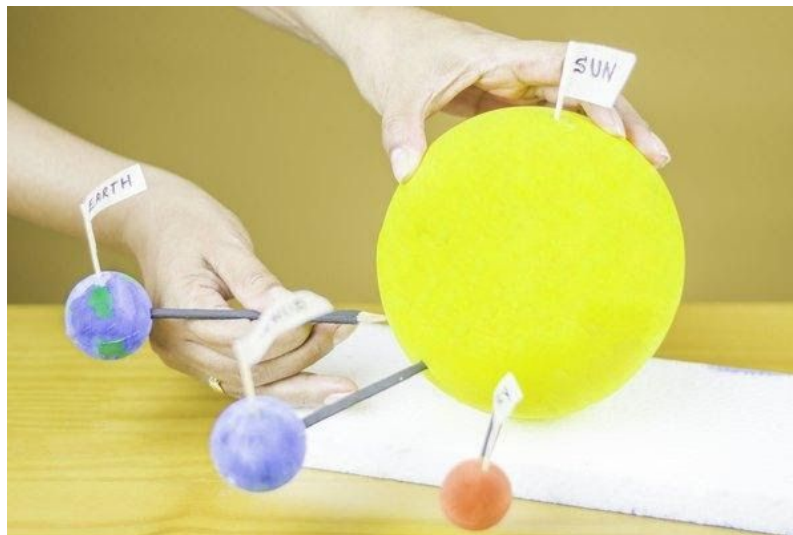
**STEP 2:** Affix the labeled strip marked "Sun" to the largest plastic foam ball and a labeled strip to each of the smaller balls to identify the planets. If desired, paint each ball and let dry before attaching a label.



**STEP 3:** Insert the 2.5-inch skewer into the ball marked "Sun." Gently attach the ball marked "Mercury" into the free end of the skewer.



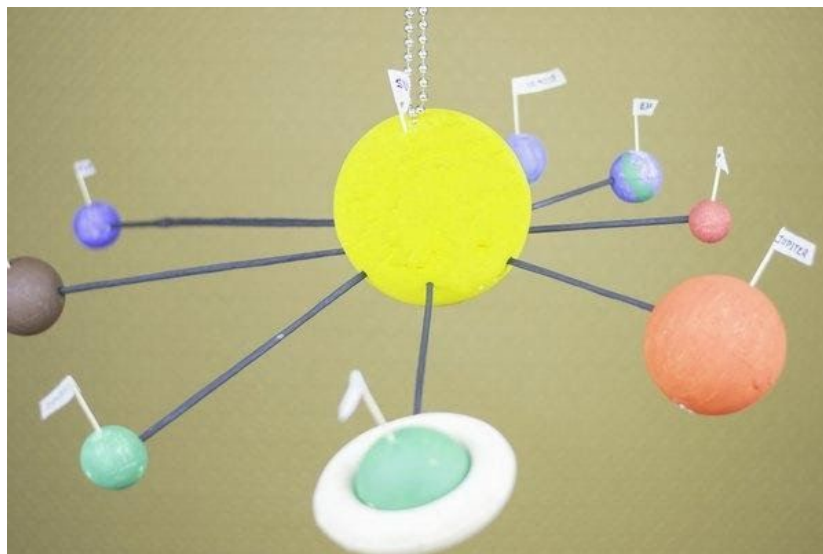
**STEP 4:** Insert the next-longest skewer into the sun, and attach the ball marked "Venus" into the other end. Insert the third skewer into the sun, and attach the "Earth" ball to the other end.



**STEP 5:** Repeat the process outlined in Step 4 for each skewer, keeping the proper planetary order: Mars, Jupiter, Saturn, Uranus, Neptune and Pluto.



**STEP 6:** Secure string to the center ball (the sun) to hang, if desired.



## REFERENCE

<https://sciencing.com/make-model-solar-system-5382914.html>