**Paper mache solar or planet system**

This project will take several days.

**OBJECTIVE:**

Create a model of a sun, Earth, and moon system or, if you are really ambitious, an entire solar system. An alternative for the Dam Builders is to make an Earth with movable continents to create a Pangea and present day Earth model.

**TERMS TO GO OVER:**

Solar system

**LAB MATERIALS:**

* 9-inch balloons
* 2 small foam ball (1 smaller than the other)
* Large quantities of newspaper (not shiny)
* Elmer’s glue
* Water
* Bin/table
* Styrofoam bowl per child
* Permanent marker
* Tempura paint
* Brushes
* Optional: foam sheets
* Optional: glow in the dark paint
* Small dowels
* String
* Paperclips

**GROUP LEADER/VOLUNTEER/TLC ROLE**

Help student not use too much glue, tear newspaper strips, and check to see if each layer covers the entire balloon. Make sure there are a sufficient number of paint layers. Optionally: make continent templates out of the foam sheets.

**SETUP PROCEDURE**

1. Tear (not cut) the newspapers into 1-2 inch wide strips.
2. Mix half and half of Elmer’s glue and water into each bin.
3. Blow up the 9-inch balloon (or water balloon, depending on which day you’re working on) and place into Styrofoam bowl

**LAB PROCEDURE**

1. Write your name on the bowl.
2. Dip a strip of newspaper into the bin of glue, making sure to get both sides covered.
3. Using your fingers, take off the excess glue so then the strip is merely wet, not white.
4. Place the strip on the balloon.
5. Repeat, placing each strip next to each other, and then in the opposite direction once the balloon is completely covered.
6. Set aside to dry overnight. (Teachers: when the balloons are half-dried, flip the balloons over so the other side can dry and doesn’t stick to the bowl.)
7. Repeat steps 2-6 for the next layer.
8. Repeat steps 2-7 for the other
9. After everything is dry, cut the balloon and pull it out.
10. Next, paint enough layers to cover the newsprint. (I suggest before painting to add the last layer of paper mache using white computer paper or the like.)

**Sun, Earth, and Moon System**

1. Paint the larger of the foam balls similar to the Earth (blue and green)
2. Paint half of the smaller of the foam balls with black paint and, optionally, the other side with glow-in-the-dark paint
3. Cut the dowels into 6in and 2ft pieces and paint black
4. On the Earth model, glue a penny to the south pole and paint white.
5. Glue about an 1.5in length string to the top of the Earth and Moon models
6. Tie the Earth and Moon models on opposite ends of the 6in dowel.
7. Next, tie one end of a 3in string to a paperclip and the other to one end of the 2ft dowel.
8. Insert the paperclip into the Sun model and orientate it so it won’t fall out
9. Next, tie a 5in or so string so to the middle of the 6in dowel and then adjust left or right to balance the Earth and Moon. Then attach the other end of the string to the opposite end of the 2ft dowel from the Sun
10. Then, cut a string approximately 3ft long, attach one end to a paperclip, and the other end to the middle of the 2ft dowel.
11. Adjust the string left or right to balance the dowel
12. TADA

**Pangea**

1. Start from step 9. Paint the paper mache blue.
2. Out of different colored foam sheets, cut out the continents.
3. With the hole of the balloon at the South Pole, outline the continents in the now position and also in the Pangea position.
4. Cut sticky-backed Velcro into small squares
5. Attach the soft side of the Velcro to the globe and the hard side to the foam continents (remember, you’ll need soft Velcro for both positions of the continents – some pieces overlap with past and present)
6. Once the continents are in position