

# Planet Making

*How to teach students about solar systems and planet habitability*

## INTRODUCTION

In order to encourage interest in the search of habitable planets in our galaxy and beyond, the students will be split up into different groups that will make their own planets in solar systems that have different types of stars. In making their planets, they will have to consider the effect of the star type (thinking about the color of the light and heat), the tilt of the axis, the number of moons, and the geography of the planet. When completed, they will then compare planets in the solar system and choose which planet is most likely to support human life. If there is enough time, then the most habitable planets of each solar system will be compared and the most likely to support life will be chosen by instructors and students.

## MATERIALS

1. 3-4in Styrofoam half sphere (or one ball halved)
2. Black large paper plates
3. White paint (optional)
4. Toothpicks
5. Smaller Styrofoam balls
6. Markers
7. 5x7 card (postcard)
8. Pencils
9. Clay
10. Glue sticks
11. Cotton Balls (optional, for clouds)

## PREPERATION

1. Glue the Styrofoam half sphere flat-side down to the black paper plate.
  - a. (Optional) You can add stars to the plate to make it more space themed by using a paint

brush or your finger to fling white paint onto it. Paint must dry before you glue the Styrofoam half sphere.

2. Add postcard markings to the 5 x 7 card (you can find pre-made blank postcards as well)
3. Print out the Mission Pack (available on UAA Planetarium website)

## PROCEDURE

1. Split students into groups with different stars. The stars will have information about their features and what planets in their solar system would look like.
2. They are then given their supplies (Styrofoam balls as the base planet, markers to draw continents and other details, toothpick to denote the axis, etc.)
3. Students will make their planets, deciding on:
  - a. Day, month, and year lengths
  - b. Geography (water, craters, rivers, mountains)
  - c. Moons and rings
  - d. Axis tilt
  - e. Weather
4. If time allows, students may choose to make a postcard for their planet that has all the information on the back.
5. Habitability can be compared to decide which planet in the solar system would make the best colony for humanity
6. If time allows, all of the most habitable planets from each solar system can be compared and discussed.