



Spacin' out the System

Task: Students make several models of the solar system to learn the positions of the planets in the solar system as well as relative distances and sizes.

MODEL #1-Position of Planets

□**Challenge:** Make a model that displays the following attributes of the planets: what they look like, their names and their position within the solar system.

Materials

1. 12" X 18" black construction paper
2. Clear tape
3. Yellow construction paper for sun
4. A copy of the planets for each person
5. A ruler
6. Crayons or colored pencils
7. Scissors
8. Glue
9. Computer (Labels)
10. You will need to decide which circle is the correct planet by measuring its diameter (the full measurement from one side to the other going directly through the middle of the circle).

Mercury: $\frac{3}{4}$ "

Venus: $1\frac{1}{4}$ "□

Earth: $1\frac{3}{8}$ "□

Mars: 1"□

Jupiter: $4\frac{3}{4}$ "□

Saturn: $3\frac{5}{8}$ ", with rings $7\frac{3}{4}$ "□

Uranus: $1\frac{3}{4}$ ", with rings $2\frac{3}{4}$ "□

Neptune: $1\frac{1}{2}$ ", with rings $2\frac{3}{4}$ "□

Pluto: $\frac{1}{2}$ "

* Create a sun using a semicircle with a radius of 6" and a diameter measurement of 12".

Directions

Step 1: Measure and decide which circle is which planet.

TEACHER CHECK-POINT Color the planets as accurately as you can. (You may use any resource to help you.)

Step 2: Measure and cut out a semicircular sun. Sun should be the full length (diameter of 12") of the long black paper. Then the sun will need to have a radius of 6". **TEACHER CHECK-POINT**

Glue the sun to left side of the paper. You may need to glue two black pieces of paper (at their lengths-12" sides) together as well to give yourself enough room to get all the planets glued down.

Step 3: Cut out planets and glue to paper. It's a good idea to cut out the inner planets (look this up if you don't know...don't guess). **TEACHER CHECK-POINT** Then move to the outer planets and glue those down.

Step 4: Add labels. As a group create planet labels in a word document. You will need the name of each planet (spelled correctly and capitalized) along with a label for both the inner planets and the outer planets.

Step 5: As a group you need to come up with an acronym to remember the planets in order. Write the acronym on the back of your paper with a white crayon or a glued piece of paper. ***It needs to make sense*** **TEACHER CHECK-POINT**

My example:

My (Mercury) **Very** (Venus) **Excited** (Earth) **Mother** (Mars) **Just** (Jupiter) **Served** (Saturn) **Us** (Uranus) **Nine** (Neptune) **Pizzas** (Pluto)

MODEL #2-Distance Model

Challenge: Create a Model of the Planets that shows their relative distance from the sun. You can always give yourself an extra challenge by changing the scale-just remember, if you change one measurement, you need to change them all!

Materials

Any supplies that you think will help to build this model. Remember this isn't about how the planet's look, it's about

their distance from the sun. Be creative

Directions

Planets will need to be the following relative-distance from the sun and in the correct order:

Mercury: 1"

Venus: $1\frac{1}{2}$ "

Earth: 2"

Mars: 3"

Jupiter: $11\frac{1}{2}$ "

Saturn: 19"

Uranus: 38"

Neptune: 60"

Pluto: 79"

MODEL #3-Size Model

Challenge: As a whole group construct a relative-size model of the planets in relationship to each other.

Materials/Directions

1. This big model is best made one planet at a time. If you are not sure how to make a perfect circle...look it up and let's talk. Come to teacher to get your choice planet to create. First come, first served. **TEACHER CHECK-POINT**

2. The dimensions of each planet's **diameters** are:

Mercury: $1\frac{1}{2}$ "

Venus: $3\frac{3}{4}$ "

Earth: $3\frac{7}{8}$ "

□Mars: 2"

Jupiter: $44\frac{1}{4}$ "

□Saturn: $37\frac{1}{8}$ "

Uranus: 16"

Neptune: $15\frac{1}{4}$ "

□Pluto: $\frac{3}{4}$ "