

# Space: A Far-Out Challenge!

## Planetary Distance

### 8<sup>th</sup> Grade Earth Science

Name: \_\_\_\_\_ Hr \_\_\_\_\_

Learning Targets: I can distinguish between the inner and outer planets based on composition, size, and location.  
I can create a scale model based on planetary mass, size or distance.

Objective: To make a scale drawing of the 8 planets and 1 dwarf planet and compare their distances.

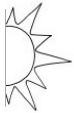
Materials: Meter stick, metric ruler, adding machine paper, tape, and colored pencils.

#### Procedure:

- Use the following chart with the planetary distances to help you make an accurate scale drawing. You will first need to convert AU to km (1 AU = 150,000,000 km), and then km to cm by **moving each decimal 8 places to the left.**  
(For example: 58,000,000 km = .58 cm on our scale drawing.)

Planet's Name	Distance from Sun (AU)	Distance from Sun (km)	Scale Distance (cm)
Mercury	0.39		.58 cm
Venus	0.72		
Earth	1.0		
Mars	1.5		
Jupiter	5.2		
Saturn	9.5		
Uranus	19.2		
Neptune	30.1		
Pluto	39.5		

- Lay out the piece of adding machine paper on your table and tape down the ends.
- On the far LEFT side of your paper, draw the Sun.



- Pick one spot on your Sun to make your measurements from and be sure to begin each measurement from that spot, not from the previous dot you make.
- Label** each planet when you are done drawing them.
- Challenge Question: How many years would it take you to travel from Earth to Mars if you were moving at 100 km/hr (62 miles/hr, an average speed limit)?