

Modeling the Distances between Planets

Area of Study

Mathematics

Teacher

Michael K. Wilson and Jennifer LaPoma

Grade Level

6th

Duration of Instruction

2 class periods

Objective

Students will be able to create a model of the distance between planets

Students will be able to convert units

Standards

- 5.6.A.B.D: Earth, Moon, Sun System; Solar System, Stars

Rationale Statement

With a simple model in the school yard, students will construct an accurate model of the distances between planets.

Procedures

- Put students in groups of 3
- Ask students: how far away do you think the sun is? (entertain student responses) Build on student's prior knowledge that the sun is the nearest star to our earth.
- To put in perspective the 93 million miles (150 million Kilometers), students will convert inches to feet as a warm up.
- We'll call the average distance from Sun to the Earth 1 Astronomical Unit (AU).
- Ask how to convert any given distance from the Sun in million of miles to AU and from AU to million of miles.
- Do examples with Neptune and Venus.
- Give out worksheet for students to work in groups to fill out.
- Ask students: what unit of measurement can we use to model the information on worksheet.

- After agreeing on 1 meter to represent 1 AU , students will convert AU to meters for our purpose.
- Escort students to school yard to model the distances.
- Students will work in groups to do the model.
- Wrap up lesson in school yard by discussing the significance of making models such as these.

Materials

- Meter stick
- Tape measure
- Table of the planets, their distance from the sun, AU and meters.
- Labels of all the planets
- calculators

Assessment

The students will be evaluated according to their ability to:

1. Completion of worksheet
2. Full participation and completion of model in school yard

Name: _____

Date: _____

Average distance from Sun to the Earth is called 1 Astronomical Unit (AU)

For our model, we will make 1 AU = _____

Planet	Distance from the sun in millions of miles	Astronomical Units (AU) from Sun	1 AU = _____	
Mercury				
Venus				
Earth				
Mars				
Jupiter				
Saturn				
Uranus				
Neptune				