**Title:**  Relative Size Model Solar System

**Date:** Q3 Week#2 January 9-13, 2017

**Grade**: Planet Data Sheet – one per group/planet 100pt QUIZ/CLASS grade

Planet Model – one per group/planet 100 pt TEST grade (rubric provided)

Solar System Data Table – one per student (to be completed during presentations) 50 pt TEST grade

**Standard:** 6.3 Develop and use models to determine scale properties of objects in the solar system.

**Key Content Vocabulary**: Solar System, Mercury, Venus, Earth, Mars, Asteroid Belt, Ceres, Jupiter, Saturn, Uranus, Neptune, Astronomical Unit, Terrestrial planet, Gaseous planet

**Time:** Five 50 minute class periods (1 week, including time for student presentations and teacher closure)

**Abstract:** In this 5 day project based lesson (PBL, hands on), students work in cooperative groups to create a collaborative relative size model of the solar system. Each student group is assigned a planet and responsible for research and construction of their planet. The teacher’s role in this unit to *facilitate* student research, discussion, and presentations. Strong time management is the key to this unit’s success.

**Materials:**

* + Bulletin board paper (for the gaseous planets)
  + Construction paper (for the terrestrial planets)
  + Oil Pastels (chalk or crayons work too, but my students love using the oil pastels, and they provide bright color for their planets.)
  + Chalk and string (for making the circle for their planets.)
  + Student personal devices or computers to access NASA.gov planet profile pages.

**Procedures:**

**Day1**: Student will work in groups for the entire week. There will be 8 groups (one for each planet). The first day is focused on research. Student groups are assigned a planet. They are to complete the Data Sheet provided (1 per group.) Students are to turn in the data sheet daily. They ARE NOT TO GO HOME. Students who want to work on the project (research) are to take notes on paper and bring to class. Students are to be become the expert on their planet and should be looking for cool facts and new information about their planet to include in their presentation (Friday).

**Day2**: The goal for today is that all groups at least begin construction of the planets, and finish all research. The teacher’s role is facilitating students getting all research complete and beginning the construct of the planet. The main focus is pushing students to meet the time constraints.

**Day 3**: The third day is totally dedicated to the completion of the planet models. All research should be complete at this point. Students are given a diameter for their planet model. They will use classroom supplies to create their planet model based on the given measurements.

*\*There is flex space here if more time is needed to complete planets. Giving them more time to finish on Thursday and presentations on Friday.*

**Day 4 & 5**: These days are for student presentations. Because students are responsible for data on all 8 planets, they will complete the SOLAR SYSTEM DATA TABLE during student presentations. Students should be given time to ask questions of the presenters to get all of the accurate data. The teacher’s role in these lessons is to fill in any missing information and ensure all students are recording data. The teacher will be responsible for adding information about the asteroid belt, Ceres, and Pluto during closing discussions.