Walk of the Planets

The Thousand-Yard Model of the Solar System
or, The Earth as a Peppercorn
Modified by Harold Williams

This walk is based on Guy Ottewell of Furman University's pamphlet entitled *The Thousand-Yard Model or, The Earth as a Peppercorn*. I have changed only a few of the token objects in the solar system so that they are all edible, though some are not particularly palatable.

- Sun---any ball of diameter 8 inches
- Mercury---a millet seed from bird or hamster food (about a pinhead in size, 0.03 inch $=$ 1/32 inch)
- Venus---a peppercorn, diameter 0.08 inch (I use green peppercorns to contrast with the black peppercorns of Earth, plus the green peppercorns are immature and a little smaller on average. You can peal off the outer layer to make it a little smaller while calling attention to the fact that Venus is only a little smaller than Earth.)
- Earth---a peppercorn, diameter 0.08 inch
- Mars---a second bird-food seed of pinhead size. It is nice if you pick a red one. If it is slightly larger than Mercury accuracy will be preserved. Currently, I use mustard seeds which are larger than the parakeet bird food seed that I use for Mercury.
- Jupiter---a chocolate-covered cherry. I am particularly proud of my substitution here for Ottewell's chestnut, pecan or gooseberry of diameter 0.9 inches.
- Saturn---a corn nut of around 0.7 inch. Ottewell suggests a filbert (hazelnut) or acorn. I couldn't find any when I went shopping for likely planets in the grocery store.
- Uranus---a Spanish peanut of around 0.3 inches. American peanuts are too large.
- Neptune---another Spanish peanut.
- Pluto---a poppy seed. Actually you should cut the poppy seed with a knife and use the smallest piece if you really want accuracy.

Now you have the scale size of the planets correct, 0.01 inch equals a 1,000 miles. So it is time to pace out the planets distances from the sun.

- Place the Sun down.
- 10 paces and put down Mercury. 3.2Lm from the sun.
- 9 paces and put down Venus. 5.9 Lm from the sun.
- 7 paces and put down Earth. 8.3 Lm from the sun.
- 14 paces and put down Mars. 12.4 Lm from the sun.
- 95 paces and put down Jupiter. 42.6 Lm from the sun.
- 112 paces and put down Saturn. 1 Lh and 18 Lm from the sun.
- 249 paces and put down Uranus. 2 Lh and 37 Lm from the sun.
- 281 paces and put down Neptune. 4 Lh and 7 Lm from the sun.
- 241 paces and put down Pluto. 5 Lh and 23 Lm from the sun.

Lm is a Light minute; Lh is a Light hour.

While you take this walk it is fun if you will sing *The Family of the Sun* a folk song sung to the tune of the *Farmer in the Dale*}. When you place each token object sing the relevant stanza on that planet. Then talk a little bit about each planet's properties, or have the groups that did reports on their planet give their report on the walk.

Out to Uranus is half of the walk; you may want to fold the walk back on itself if your school yard is small and you do not have 1,000 yards in a straight line. If you fold it at Uranus, you will need only 500 yards.

If you want to add the asteroids, most but not all, are between the orbit of Mars and Jupiter. To represent their mass, which is really very little, blow some dust off of your palm or rub a little skin off of your palm. The asteroids have a total mass of 1/400 Pluto's or 1/2000 of the Earth's Moon.

If you are a bit of a cut up take a bite out of the chocolate covered cherry and show your class the big red spot. You might also mention that the cherry center is about the right size for the metallic hydrogen core of Jupiter. Stress to them that hydrogen, even when it becomes solid under pressure, is an insulator until it is under very extreme pressure; then it becomes a metal. The metallic core of Jupiter is the reason it produces so much radio static, since electric currents can flow in a metal but not an insulator.

The nearest star from the Sun is 4,000 miles away on this scale. Ask the students how often they think two 8-inch balls 4,000 miles apart will run into each other. This will impress on them why stars do not run into each other very often in the life of the galaxy.