

# Models of the Solar System

## Apparatus

different models of the solar system, ideally including a pre-Copernican model with the Earth at the centre of the planet's and sun's orbits

Note that these are simple to make using wire and polystyrene balls.

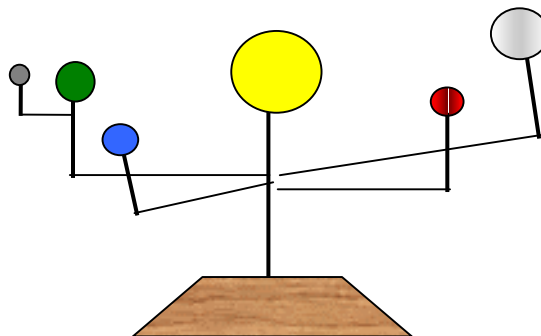
## Action

The students examine the models and note differences and similarities between them.

## The Physics

Our understanding of the motion of the planets has changed greatly over the last few hundred years. We no longer believe that the Earth is at the centre of the solar system with everything else orbiting around it. (It is interesting to note that while this is generally taken for granted these days, in 1981 Pope John Paul II set up a commission to "coordinate the research of theologians, scientists and historians which would help to further clarify the events which occurred between Galileo and the Church and, more generally, the Ptolemaic - Copernican controversy of the 16th and 17th centuries in which the Galileo affair is situated". Galileo seems to have been officially forgiven in 1992.)

We also know that the planets travel in elliptic orbits described by Kepler's laws, rather than in circular orbits. This has implications such as the varying velocity of the planets in their orbits.



## Accompanying sheet

### Models of the Solar System

Examine the different models,

How are they similar?

How are they different?

Describe how our knowledge of the orbits of the planets has evolved in time.