

Using IT in... earth and space

Make an orrery.

You can use a **spreadsheet** to help you construct a model solar system - stretching from one end of the hall to the other. You put values for the distances of each planet into a spreadsheet. In one of the spreadsheet columns you enter a calculation

	A	B	C
1	Shadows		
2	Time	Shadow angle	Shadow length
3	10:00		
4	11:05		
5	12:00		
6	13:00		

which allows you to scale the planet's real distances from the sun down to the length of the hall. You enter the length of the hall and the computer will work out the correct scale for you. What problem do you face if you make an orrery a table?

IT: modelling

How do the planets compare?

There are many patterns in data on the planets. You might wonder if there is a pattern between the size of a planet and its distance from the sun, or if larger planets have more moons. A **database program** allows children to explore these patterns easily - in an enjoyably investigative way. You can collect data about each of the planets and type it into the database program. You can see if there is a pattern between the size of a planet and its distance from the sun. You use the computer to plot a scattergraph of size of the planets against distance. If there is a pattern, you will 'see' a line or curve through your scatterpoints. Can find other patterns: is there a pattern between the temperature on the planet and its distance from the sun? Can you explain why?

IT: Handling information

Do you know your planets?

You can play a 20-questions game on the planets - one person thinks of a planet, while the others have to ask questions to guess it. And you can then use a **branching database** program to enter these questions into the computer. This is an absorbing exercise which gets children to make careful observations about the planets.

IT: Handling information

Why is summer warmer than winter?

You can illustrate this difficult idea using a desk lamp (the sun) and a globe. You then use **temperature sensors** to record the temperatures at two positions - one with the sun at an angle and one with the sun directly overhead.

IT: Modelling

How does the moon change in shape?

You can keep a moon diary using a computer **drawing program**. You draw a grid of boxes like a calendar and then fill in the boxes using moon shapes. The program will allow you to copy shapes you have already drawn - so this gets easier as you work through a month. Once you have completed the grid, you could print it and create a game where the children have to arrange moon shapes into the correct sequence.

Several **CD-ROM** titles explain the phases of the moon fairly graphically. See under planets for recommendations.

IT: Modelling

Moon people

Use a **word processor** in a team exercise to make a newspaper front page about the day they landed on the moon. They may be able to illustrate their story with pictures they find in a CD-ROM, a 'clip-art' library or from the **Internet**.

IT: Communication

Do astronauts keep cool in shiny suits?

Use **temperature sensors** to compare the temperatures of astronauts dressed in fabric and in shiny foil suits. Get a desk lamp to shine on wrapped-up bottles. Ask the children: when the sun shines, will your astronauts warm up or cool down? How does the computer graph show you what happened? Do the suits protect them from the sun's heat rays? Which suit material protects best?

IT: Measuring



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