

# The Earth, Sun and Moon

Space Lesson 4

As a passenger in a car, travelling at a steady speed on a smooth road, you might glance out the window and watch the buildings or fence posts move past you: They appear to move but really you are moving. Why is it easy to see the buildings as moving objects?

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It seems that every day the Sun rises in the east crosses the sky and sets in the west; and at night the Moon and stars track across the sky. In fact it is you that is moving on the surface of the Earth and the Sun and stars stay still.



One day on Earth is the time it takes for our planet to spin once on its axis. As we spin around on "Roundabout Earth", everything beyond Earth seems to move past us. From midday today to midday tomorrow will be one day; 24 hours.

The Earth is held by gravitational forces, in orbit around the star in our system of planets; the Sun. The Latin name for the Sun is Sol: so, we get solar system, meaning the system of planets around Sol.

We can tell how long it takes Earth to complete one full orbit of the Sun by comparing our position with distant stars. This orbit takes 365 days, we call this a year.

1. Is this number of days accurate? Give a better answer.
2. How do we correct for the difference on the calendar?
3. How many planets are in the solar system?
4. Choose a planet in the solar system: Build a short report on this planet.
  - Include an image of your planet from the internet.
  - Find out how long its day is. (Spin once on its axis)
  - Find out how long its year is. (One orbit of the Sun)
  - Include four other facts about the planet that you find interesting.

Your report should be about one page in length (up to  $\frac{1}{3}$  of that could be the planet image).