

Knowledge box 2



Geography Plus: Little Blue Planet

These knowledge boxes provide background information for teachers to help develop knowledge for teaching about *Little Blue Planet*. For lots more useful sources of information, along with recommended storybooks for pupils' reading, have a look at the **Useful information: weblinks, storybooks and references** sheet. Make sure you have a look at the 'Notes' on the PowerPoints as well; they offer useful snippets of information and questions for your pupils.

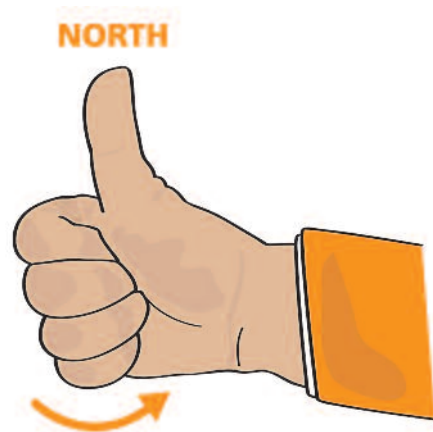
Lesson 3: Why do stars only come out at night?

Your pupils can visualise how planet Earth rotates by holding out their right fist in a 'thumbs up'. Tell them to imagine that their thumb points north and their fingers are curling in the direction of the Earth's rotation. Because of this, we say that Earth rotates in a right-handed manner.

(Iowa State University, 2010. For more information see www.polaris.iastate.edu/NorthStar/Unit3/unit3_sub1.htm)

Earth rotates about an imaginary line that passes through the North and South Poles, called the axis of rotation. One rotation of Earth takes a few minutes less than a full day – 23 hours, 56 minutes 04.09053 seconds to be exact. This is called the sidereal period, which means the period relative to stars. The sidereal period is not exactly equal to a day because by the time the Earth has rotated once, it has also moved a little in its orbit around the sun, so it has to keep rotating for about another four minutes before the sun seems to be back in the same place in the sky that it was in exactly a day before.

(Butterworth and Palmer, 1997. For more information see http://imagine.gsfc.nasa.gov/docs/ask_astro/answers/970401c.html)



For convenience, we measure a day as 24 hours and then regain the 'lost day' every four years as part of our leap year.

The moon has no light of its own but reflects light from the sun. As the moon travels around the Earth on its 29½ day journey, different parts of it are lit up by the sun. We call these different views the 'phases' of the moon.

We see the most stars in the sky from the darkest places on the Earth, where there is the least light pollution. The thousands of stars once visible to the naked eye are now obscured by the glare of industrial light and the haze of pollution. This is particularly true in the USA and Europe, where light researchers estimate that a child born today in either region has only a one in ten chance of witnessing a truly dark sky.

(Ruiz, 2008. For more information see www.forbes.com/2008/06/17/stars-travel-galaxy-forbeslife-cx_rr_0617travel.html)