

## Strand 1

# Starry Starry Night – Overview

## Context

This strand enables teachers with no scientific background to teach a course in introductory stargazing during the day, even though no stars are visible. It is also an excellent introduction to stargazing for anyone with a beginner's interest in this subject.

The first five activities have been developed with ages 9 to 11 in mind. The next five activities are progressively more challenging and are intended for an older age group.

However, appropriate parts of these activities can be used with students of all ages. With a group of five-year-olds you may choose to focus on just recognising the Big Dipper or the Southern Cross, while a group of adults will eagerly devour all nine activities.

## Classroom Lead in

As you begin this strand the essential concept to communicate to the students is that you are going to teach them stargazing, but there is a catch ... you can't see the stars during the day.

Your students will learn how to find stars by themselves at night. To do this, they will learn to use a star wheel.

The steps are:

1. Learn to find north, south, east, west from landmarks using a street map.
2. Learn to find north/south from the stars themselves.
3. Make a star wheel.
4. Learn to find stars using the star wheel on charts and on the computer screen.
5. Find the stars in the night sky.

Things you might discuss with the students as a warm up to this strand:

- Why can't we go stargazing during the day?
- What happens to the stars during the day?
- Why can't we see stars during the day?
- What can we see in the sky during the day?
- What stars and constellations can you name?
- Why can't you stargaze every night?

Some of these questions are answered in the Science Background Knowledge section, on the next page.



## Science Background Knowledge

### ***Why don't we see stars during the day?***

This is actually a trick question. The Sun is a star and we can see it during the day. However, during the day we cannot see any other stars. Although we cannot see them they are in the sky all the same. Light from those stars is reaching your eyes even in the daytime. The reason you cannot see them is that the sky is lit up by the Sun. There is more light coming from the sky than coming from the stars.

*Did you know?* – During a total eclipse of the Sun the sky goes black and stars appear during the day.

### ***What shines brighter than the daytime sky?***

There are only three celestial bodies that are brighter than the light of the daytime sky. They are the Sun, the Moon, and Venus. Because they are brighter than the sky they can be seen during the day. (Venus can be a little hard to find during the day, but it is quite visible at times when it is some distance from the sun, provided you know exactly where to look. Always look from in the

shade and never attempt to find Venus during the day with binoculars – to do so would be to risk instant blindness to both eyes. See Activity 6 – *Planet Hit List* to find out where Venus is in the sky.)

So there is one daytime star, one daytime moon, and one daytime planet. The blue sky outshines all the rest.

*Did you know?* – Occasionally other celestial bodies burst through the blue sky. In 1054 AD a star in the constellation of Taurus exploded in a supernova explosion. At its brightest it outshone Venus and could be seen during the day for several weeks. It is now called the Crab Nebula and is so faint that it can be seen only in telescopes. In January 1910 a comet appeared that was so bright it could be seen during the day. This comet came to be known as the Daylight Comet. It was not Halley's Comet, but it appeared, coincidentally, just a few weeks before Halley's Comet and is sometimes confused with it. Another comet or supernova could break through at any time, but don't hold your breath.

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Published 6 Nov 2002