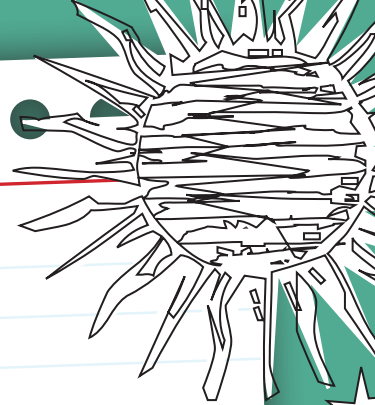


STARDOME OBSERVATORY & PLANETARIUM FACTS, RESOURCES AND ACTIVITIES ON...



RISING AND SETTING OF THE SUN

The position at which the Sun appears above the horizon changes a little every day.

In winter, the Sun rises north of east (and sets north of west). The day it rises in its northern-most position is the winter solstice.

In summer, the Sun rises south of east (and sets south of west). The day it rises in its southern-most position is the summer solstice.

The two days of the year the Sun is directly between these northern and southern points are the equinoxes—one in March and one in September (autumn and spring).

The calendars of some cultures, including Māori, are partly based on this cycle of annual 'Sun movement'. The Māori year starts at the time of the winter solstice and some iwi say the stars of Matariki appear in the sky to call for the Sun to return to the south after it has been in the north.



RISING POSITION OF THE SUN THROUGHOUT THE YEAR

Date	Sunrise azimuth (a compass bearing measured clockwise from due north; E is 90°)	Sunrise position relative to due east (a negative number is left/north of east; a positive number is right/south of east; E is 0)
22 January	116°	+26
22 February	104°	+14
22 March	90°	0
22 April	75°	-15
22 May	65°	-25
22 June	61°	-29
22 July	64°	-26
22 August	75°	-15
22 September	90°	0
22 October	103°	+13
22 November	116°	+26
22 December	121°	+31
22 January	116°	+26

SETTING POSITION OF THE SUN THROUGHOUT THE YEAR

Date	Sunset azimuth (a compass bearing measured clockwise from due north; W is 270°)	Sunset position relative to due west (a negative number is left/south of west; a positive number is right/north of west; W is 0)
22 January	244°	-26
22 February	257°	-13
22 March	270°	0
22 April	285°	+15
22 May	295°	+25
22 June	299°	+29
22 July	295°	+25
22 August	285°	+15
22 September	270°	0
22 October	256°	-14
22 November	244°	-26
22 December	239°	-31
22 January	244°	-26

DEFINITIONS

Solstice - most northern and southern limit of Sun's movement in the sky (June and December)

Equinox - When day and night are the same length (mid-March and mid-September)

Unfortunately you can't usually observe sunrise & sunset from school, so use the tables provided to make your own mural showing the horizon and the different positions of the sunrise (or sunset).

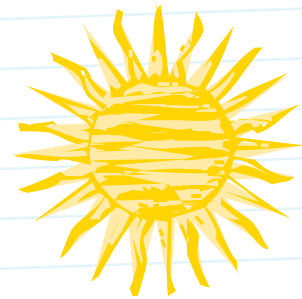
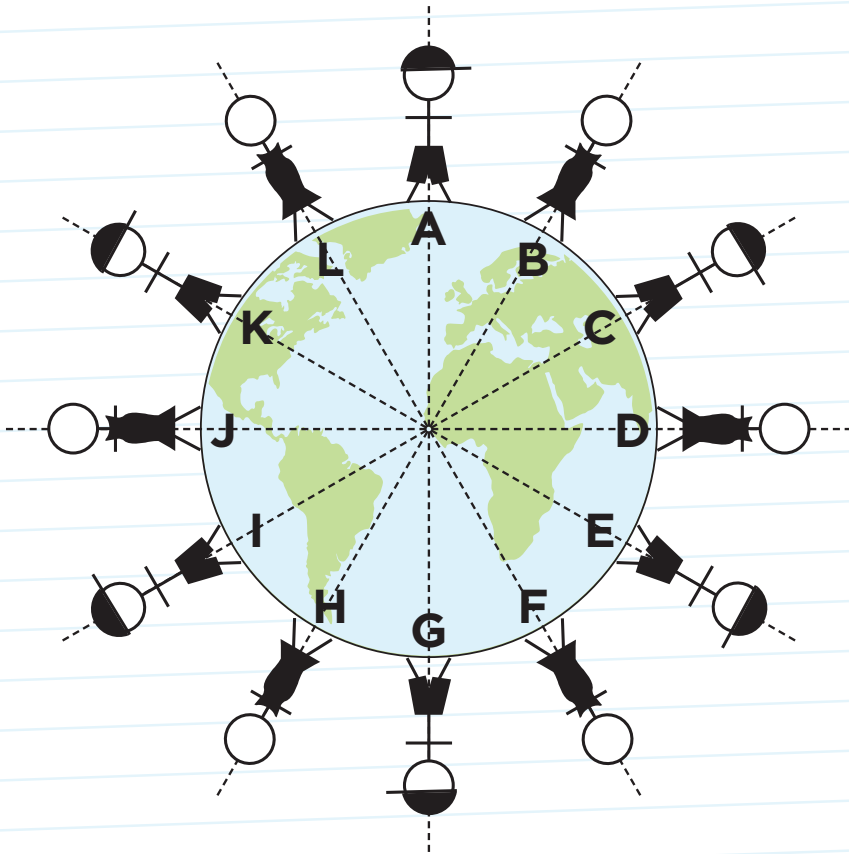
SCIENCE CONTENT/ CURRICULUM LINK

NATURE OF SCIENCE - INVESTIGATING IN SCIENCE
EXTEND THEIR EXPERIENCES AND PERSONAL EXPLANATIONS OF THE NATURAL WORLD THROUGH EXPLORATION.



STARDOME OBSERVATORY & PLANETARIUM

SUN AND SHADOWS



NOTE: The Earth, Sun and people are not to scale.

Questions to answer...

Discuss with a friend (you are allowed to draw on this picture!)

1. Agree which side is Earth's NIGHT side and shade it in.
2. Which people (A, B, C etc) currently have DAY time in this picture?
3. Which people in this picture can see the Sun?
4. Which person has the Sun directly overhead in this picture?
5. Which person is in the middle of the night?
6. Look at person F: would their shadow point towards E or G?
7. Look at person C: would their shadow point towards B or D?
8. Look at person D: would their shadow point towards C, E or J?
9. Which person is at the South Pole: A, D, G or J?
10. Which two people are standing on the equator?

Did you know...

...LIGHT FROM THE SUN TAKES MORE THAN 8 MINUTES TO REACH EARTH, 40 MINUTES TO REACH JUPITER AND 17 HOURS TO GET TO THE EDGE OF THE SOLAR SYSTEM.

