

The Sun

Teacher notes:

Before this lesson students should be able to draw the positions of the sun and earth for the equinoxes and solstices.

Extensions:

- Graph the length of day.
- Change the location to Florida, or another southern state and complete the chart.
- Change the location to the southern hemisphere and complete the chart.
- Measure the length of the shadow of a meterstick at noon. Make predictions about the length of the shadow on the equinoxes and solstices.

Reasons for the Seasons by Journey North

<http://www.learner.org/jnorth/tm/ReasonsUnit.html>

There are 4 lessons on shadows, and length of the day.

Objectives:

- Know the position of the sun at sunrise and sunset during the equinox and solstice.
- Identify the longest day.
- Know where to locate the sun at its highest point.
- Identify the time of the year based on data, height of sun at noon and location of the sun in the sky at sunrise.

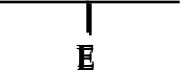
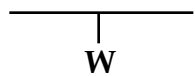
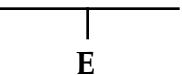
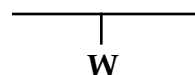
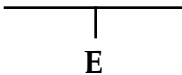
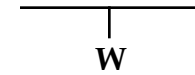
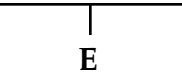
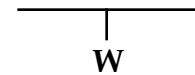
Solstice and Equinox

Set the landscape to ocean



1. When will the **sun set** tonight?
2. Where is it?
3. Move ahead 7 days -] (try that a few times) How is the position of the sun changing?
4. Return to today
5. When will the **sun rise** tomorrow?
6. Where?
7. Move ahead 7 days -] (try that a few times) How is the position of the sun changing?
8. Return to today
9. Where is the sun when it reaches its highest point today? How high did the sun get? (turn on the grid)
10. Move ahead 7 days -] (try that a few times) What's happening to the highest point?

Solstices and equinoxes are special because of where the sun rises and sets. Turn on the **Azimuthal Grid** and use the **altitude** to provide a **measurement for the highest point**.

Date	Sunrise Time	Direction	Sunset Time	Draw the location of the Sun	Highest point
March 21 Equinox					
June 21 Solstice					
Sept 23 Equinox					
Dec 22 Solstice					

Location _____