

Sky Science

Name:

Date:

What Can We Learn About the Movements of Objects (Sun, Stars, Planets, Moon) in the Sky by Observing Them?



Discover: Making a Sun Clock

Question

How can a simple sun clock track the time of day?

In this activity, you will build your own simple **sundial**.

Materials

- a sunny day
- pencil
- print-out of the Sun Clock diagram
- clock or watch

Instructions

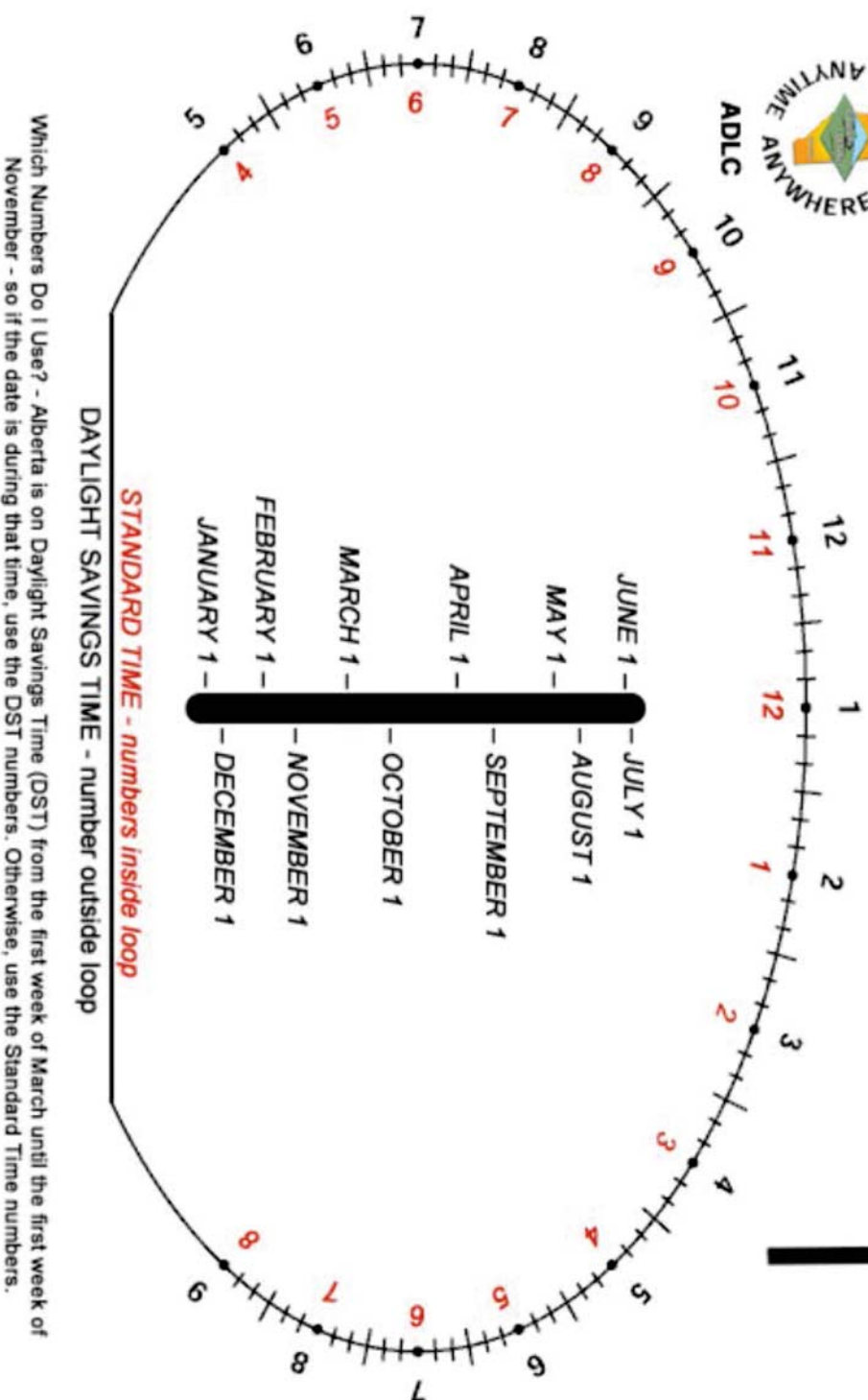
- 1 Print a copy of the **Sun Clock Diagram**.
- 2 You must locate geographic north before you can use your **Sun Clock Diagram**.
 - Go out the night before you do this activity and look for the **North Star**. (You learned how to do this earlier in the unit.)
 - Mark an arrow on the ground that points toward the **North Star**. That's geographic **North**. If you cannot go out the night before, ask a parent to help you find which way is **North**.
- 3 On the next day that is sunny, position your **Sun Clock Diagram** with the geographic north arrow (in the top right-hand corner of the diagram) pointing in the same direction that you marked on the ground (toward geographic north).
- 4 Stand a pencil upright on the line in the middle of the **Sun Clock Diagram** on today's date. For example, if you are doing this activity on April 1, put the pencil at that point on the line. Look where the pencil shadow is - that is the time of day according to the **Sun Clock Diagram**. Record your observation in the **Sun Clock Sketch Chart** provided at the end of this document. In addition, record in the chart the actual time of day using a watch or clock.

- 5 Leave your sun clock in that location, or if you must take it inside, return it to the exact spot when you use it again.
- 6 Repeat steps 4 and 5 four times, about once every hour.
- 7 For the next two days, use your sun clock to repeat steps 4 to 6 at the same times as you did on the first day.

Sun Clock Diagram

Place this diagram on a flat surface with the arrow pointing to geographic north. Stand a pencil on the dark line in middle of the diagram on the correct date. Wherever the pencil shadow falls on the curved circle is the time of day.

Geographic North



Which Numbers Do I Use? - Alberta is on Daylight Savings Time (DST) from the first week of March until the first week of November - so if the date is during that time, use the DST numbers. Otherwise, use the Standard Time numbers.

Sun Clock Sketch Chart

To insert sketches or images, click on an image space in the chart below, browse to the location of the image, click on the name of the image to select it, then click **Open**.

| Time of Day (using a clock or watch) | Sketch of Sun Clock (where the shadow fell on the clock) | | |
|---|---|-------|-------|
| | Day 1 | Day 2 | Day 3 |
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