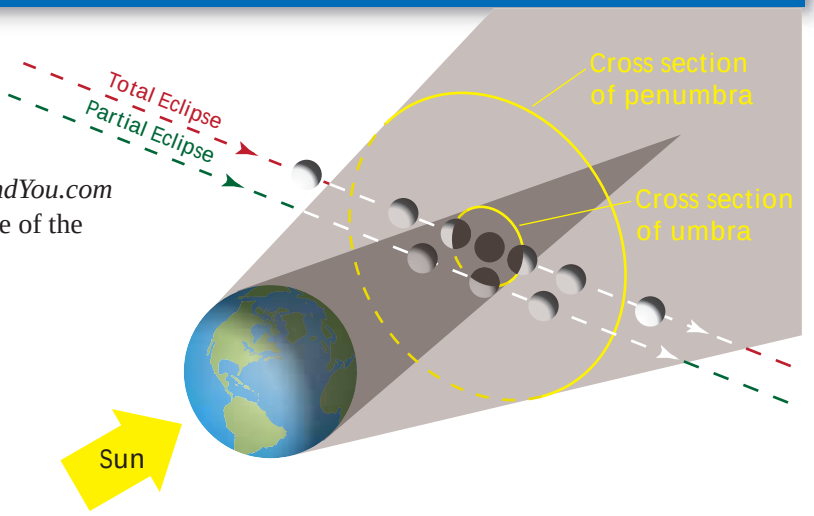
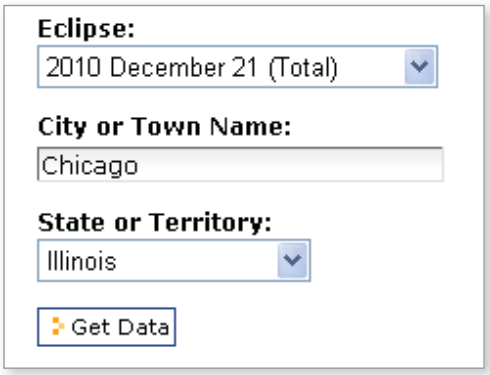
Math & Lunar Eclipses

PROJECT: Finding Patterns in Nature



1. Use the *Lunar Eclipse Computer** at *Math.andYou.com* to find information about the next total eclipse of the moon in your area.



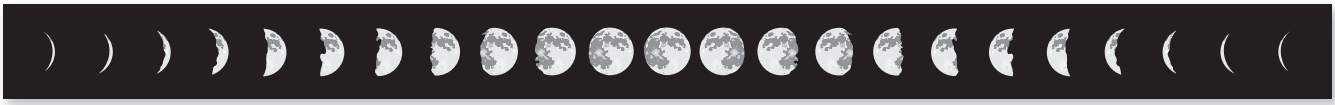
Begin by entering your location information in the calculator. Then, press "Get Data" to obtain the information, as shown below.

		h m	Moon's Azimuth o	Moon's Altitude o
Moonrise	2010 Dec 20	15:51	56.9	----
Moon enters penumbra	2010 Dec 20	23:27.7	169.3	71.5
Moon enters umbra	2010 Dec 21	00:32.3	212.5	69.1
Moon enters totality	2010 Dec 21	01:40.4	241.3	59.9
Middle of eclipse	2010 Dec 21	02:17.0	251.2	53.8
Moon leaves totality	2010 Dec 21	02:53.6	259.1	47.4
Moon leaves umbra	2010 Dec 21	04:01.7	271.0	35.1
Moon leaves penumbra	2010 Dec 21	05:06.1	280.6	23.5
Moonset	2010 Dec 21	07:32	302.1	----

2. How long does a total lunar eclipse last?

3. How often does a total lunar eclipse occur? Explain your reasoning.

4. How has the time between lunar eclipses or between full moons influenced life on Earth? Include a discussion of tides, folklore, calendars, literature, and language.



*Provided by U.S. Naval Observatory

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