

Sunrise and Sunset

Background: At some point in your life you have probably seen a sunrise or sunset. As you know, in a sunrise or sunset the sun itself is not actually moving, but instead Earth is moving relative to the sun. Earth is continually rotating on its axis. As Earth rotates, different parts of Earth come into daylight and other parts fall into darkness.

Have you ever noticed that sunrises and sunsets occur at different times throughout the course of the year? For example, if you live in a northern place such as Canada or Alaska, sunset occurs after 9:00 pm in the evening in June. But, in December sunset occurs in mid to late afternoon. The time of sunrises also varies. The time between sunrise and sunset is the amount of daylight. Therefore, the amount of total daylight also fluctuates. Sometimes the amount of daylight varies greatly throughout the course of a year depending on your location on Earth.

Directions:

1. In this activity you will take a look at the times of sunrises and sunsets throughout the course of the year at three different locations on Earth: Fairbanks, Alaska; Des Moines, Iowa and Quito, Ecuador. Locate these places on a globe.
2. Calculate the amount of daylight for each of the cities. Your teacher will show you how to calculate the hours and minutes of daylight using the sunrise and sunset times provided.
3. After you have completed the amount of daylight calculations for each of the three locations, take a few minutes to look at the information you just computed. Compare the amount of daylight between the months at a given location. Also, compare the amount of daylight between the different locations.
4. Answer the questions below on a separate piece of paper.

Questions:

1. Which location had the longest days and the shortest days during the course of the year?
2. Which location had days that had a relatively constant amount of daylight throughout the year?
3. Explain why the days in Alaska and Iowa were longer in June than in December.
4. Explain why the days in Ecuador were a more constant length than those in Alaska.

Sunrise and Sunset

Fairbanks, Alaska

DATE	SUNRISE (am)	SUNSET (pm)	LENGTH OF DAYLIGHT
Jan 15	10:26	3:36	
Feb 15	8:49	5:22	
March 15	7:09	6:52	
April 15	5:16	8:28	
May 15	3:28	10:09	
June 15	2:02	11:42	
July 15	2:53	10:58	
Aug 15	4:38	9:10	
Sept 15	6:13	7:17	
Oct 15	7:44	5:28	
Nov 15	9:27	3:44	
Dec 15	10:52	2:41	

Des Moines, Iowa

DATE	SUNRISE (am)	SUNSET (pm)	LENGTH OF DAYLIGHT
Jan 15	7:39	5:09	
Feb 15	7:10	5:48	
March 15	6:26	6:21	
April 15	5:35	6:55	
May 15	4:55	7:27	
June 15	4:40	7:50	
July 15	4:53	7:47	
Aug 15	5:23	7:14	
Sept 15	5:55	6:24	
Oct 15	6:27	5:33	
Nov 15	7:03	4:54	
Dec 15	7:34	4:45	

Quito, Ecuador

DATE	SUNRISE	SUNSET	LENGTH OF DAYLIGHT
Jan 15	6:06	6:13	
Feb 15	6:11	6:18	
March 15	6:06	6:12	
April 15	5:57	6:03	
May 15	5:53	6:00	
June 15	5:57	6:04	
July 15	6:02	6:10	
Aug 15	6:01	6:08	
Sept 15	5:52	5:58	
Oct 15	5:43	5:49	
Nov 15	5:41	5:48	
Dec 15	5:51	5:59	