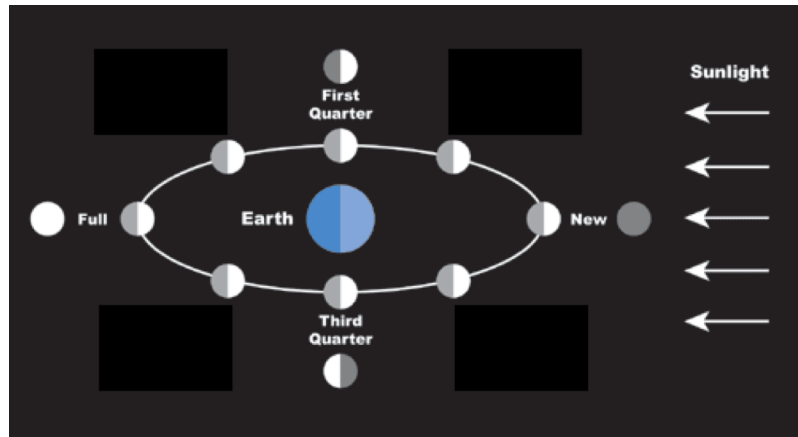


Predicting the Phases of the Moon

As the Moon moves in its orbit around the Earth, we see different parts of the Moon illuminated - the Moon appears to pass through a sequence of *phases*.

Throughout human history, people have used the phases of the Moon to keep track of time. The origin of the word *month* comes from the root word for the Moon. The orbit of the Moon around the Earth is responsible many natural phenomena including the ocean's tides.



[NASA](#)

The table shows the dates for the different phases of the Moon during 2017. Examine these data and compare with the figure showing the orientation of the Earth, Moon, and Sun. Discuss with your partner whether you have any questions or observe any patterns. Using the data in the table and the attached calendar, answer the following questions.

New Moon	First Quarter	Full Moon	Third Quarter
	January 5	January 12	January 19
January 27	February 3	February 10	February 18
February 26	March 5	March 12	March 20
March 27	April 3	April 10	April 19
April 26	May 2	May 10	May 18
May 25	June 1	June 9	June 17
June 23	June 30	July 8	July 16
July 23	July 30	August 7	August 14

1. How many days were there between the January 12 Full Moon and the February 10 Full Moon?
2. How many days were there between the February 10 Full Moon and the March 12 Full Moon?
3. How many days were there between the March 12 Full Moon and the April 10 Full Moon?
4. How many days were there between the April 10 Full Moon and the May 10 Full Moon?
5. How many days were there between the May 10 Full Moon and the June 9 Full Moon?
6. How many days were there between the June 9 Full Moon and the July 8 Full Moon?
7. How many days were there between the July 8 Full Moon and the August 7 Full Moon?
8. How often does a Full Moon occur (how many days)?
9. Predict when the next Full Moon will occur:
10. How many days does it take to complete an entire sequence of lunar phases?
11. Why are there two First Quarter Moons in the month of June?

2017

January

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

February

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

March

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

April

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

May

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

June

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

July

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

August

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

September

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

October

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

November

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

December

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						