

## Daily Moon Phases

As the Moon circles Earth, the portion of the Moon you see changes a little every day. These phases are shown below. Every 29 to 30 days, the phases begin all over again.

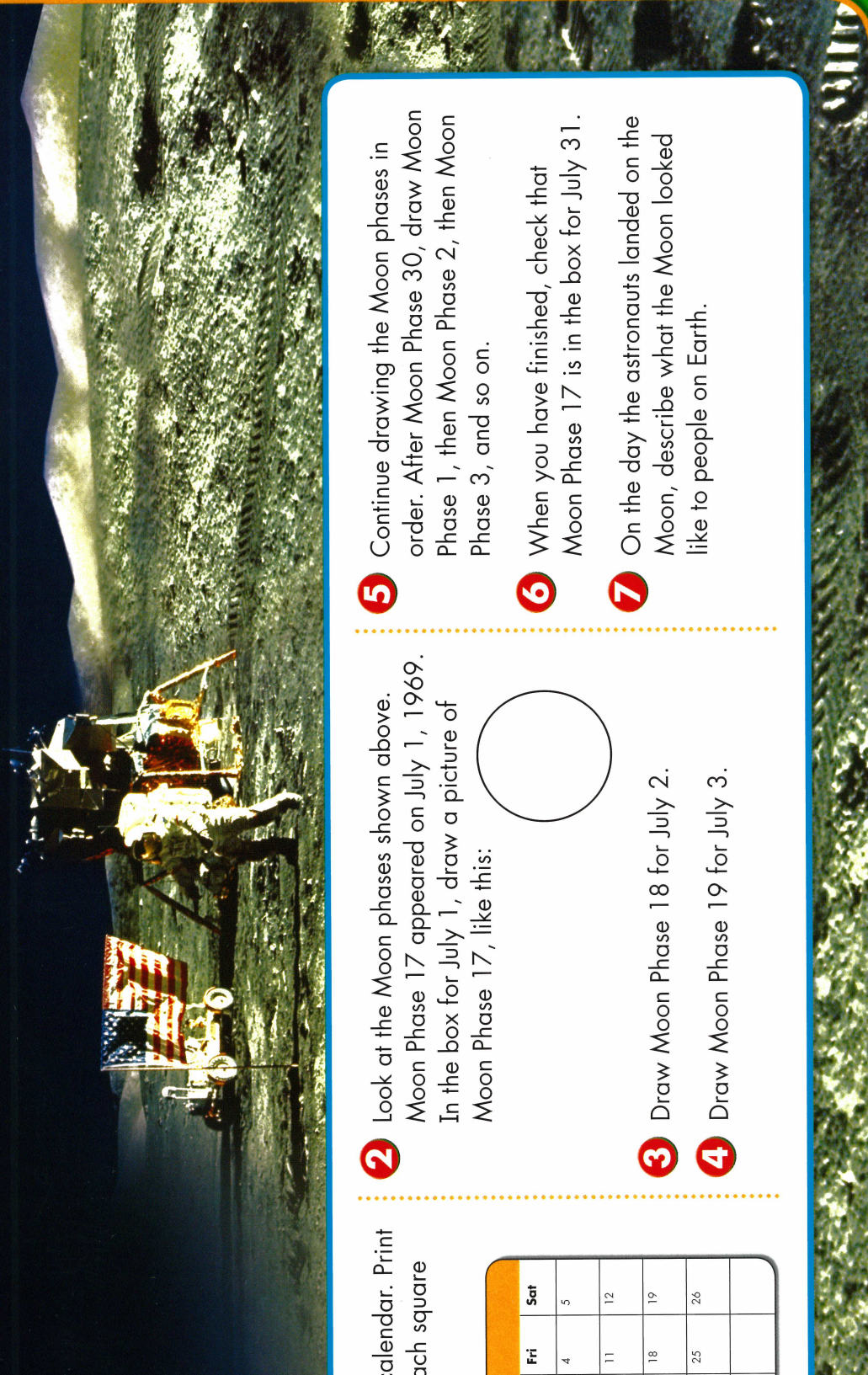


## Did You Know?

Calendars that show the Moon phases are helpful to people who fish in Florida waters. The Moon phases are related to the rise and fall of the ocean tides. During the Full Moon and the New Moon, the high tides are higher and the low tides are lower.

## Landing on the Moon

The Apollo 11 spacecraft was launched from Kennedy Space Center in Florida. It carried the first astronauts to the Moon. They landed on the Moon on July 20, 1969. What did the Moon look like that day to people on Earth? You will find out in the Activity below.



## Make a Moon Phase Calendar

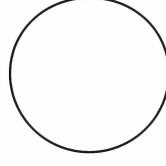
### What You Need



- 1 Make a large copy of this calendar. Print the dates in the corner of each square as shown.

JULY, 1969						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
		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		

- 2 Look at the Moon phases shown above. Moon Phase 17 appeared on July 1, 1969. In the box for July 1, draw a picture of Moon Phase 17, like this:



- 3 Draw Moon Phase 18 for July 2.
- 4 Draw Moon Phase 19 for July 3.

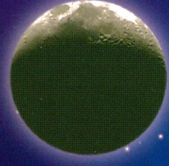
- 5 Continue drawing the Moon phases in order. After Moon Phase 30, draw Moon Phase 1, then Moon Phase 2, then Moon Phase 3, and so on.
- 6 When you have finished, check that Moon Phase 17 is in the box for July 31.
- 7 On the day the astronauts landed on the Moon, describe what the Moon looked like to people on Earth.



## Moon Phases

The Moon does not make its own light. You can see the Moon because it reflects sunlight. As the Moon, Earth, and Sun change positions, you see different portions of the Moon, or no Moon at all. These portions of the Moon are called phases.

Here are some important Moon phases. There are about 29.5 days from one New Moon to the next.



New Moon



1st Quarter



Full Moon



3rd Quarter

## Show What You Know!

Solve each problem. In 1–3, use the lunar calendar shown.

- How many days are in the first 6 months?
- How many days are in all 12 months?
- The familiar January-to-December calendar has 365 days. How many more days is this than in the lunar calendar?
- How long is the shortest month in the January-to-December calendar? How long are the longest months in the January-to-December calendar?

**5 Think It Through** Look at the Moon phases pictured.

- There are the same number of days between each of the phases shown. About how many days are there from 1st Quarter to Full Moon? Explain.
- There are more phases than just these four. Draw a different picture of the Moon that you have seen in the sky.

## Lunar Calendars

Moon phases are related to a type of calendar called a **lunar calendar**. In a lunar calendar, the months are either 29 or 30 days long. This is as close as possible to the time from one New Moon to the next.

Here is a sample lunar calendar for a year.

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

How many days are in the first 4 months of this lunar calendar?

Two of the months have 29 days.

$$2 \times 29 = 58$$

Two of the months have 30 days.

$$2 \times 30 = 60$$

Add to find the total.

$$58 + 60 = 118$$

There are 118 days in the first 4 months.

