Moon Watch

Use observations to find patterns in the Moon's appearance and location.

E.5.8B.1 "Analyze and interpret data from observations and research (e.g., from NASA, NOAA, or the USGS) to explain patterns in the location, movement, and appearance of the moon throughout a month and over the course of a year."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Circle the two days in the table when the Moon looked alike and was in the same place at sunset. Underline a sentence in the passage that helps explain why this pattern repeats.

Checking the Moon at Sunset

1 A class in the Northern Hemisphere checked the Moon at sunset over a 30-day stretch. They used a NASA Moon phase guide to help name the shapes they saw. The table shows five of their observations. A Moon marked "not seen" had not vanished. It was too close to the bright Sun to spot.

CLASS OBSERVATIONS AT SUNSET

Day	Moon's appearance	Moon's location at sunset
1	First quarter	High in the sky
8	Full	Rising near the eastern horizon
15	Last quarter	Below the horizon
23	New, not seen	Too close to the Sun to spot
30	First quarter	High in the sky

2 At sunset, a first-quarter Moon can be high in the sky, while a full Moon rises near the eastern horizon. About a week later, a last-quarter Moon is below the horizon at sunset. It rises later, around midnight. As the Moon travels around Earth, our view of its sunlit half changes. This makes the repeating shapes called phases.

3 The pattern continues through the year, but the Moon does not follow the same path across the sky in every season. In the Northern Hemisphere, a full Moon often crosses higher in the sky on winter nights than on summer nights. Its shapes repeat about every 29.5 days, so a full Moon can fall on a different calendar date each month.

2 ANSWER WITH EVIDENCE

Use the passage

1. Compare days 1 and 30. What pattern do the observations show, and about how long did it take to repeat?

2. How did the Moon's appearance and location at sunset change from day 1 to day 8?

3. On which day, 8 or 15, would the class need to wait until later at night to see the Moon? Use the observations to explain.

4. How can the location of a full Moon change between winter and summer, even though its shapes keep repeating?

3 YOUR TURN

Your own words

Predict the Moon's appearance and location at sunset on day 37. Explain your prediction using at least two rows of the table and the repeating pattern described in the passage.

ANSWER KEY

Moon Watch

GRADE 5 · E.5.8B.1

PART 1 · READ AND MARK

Circle the two days in the table when the Moon looked alike and was in the same place at sunset. Underline a sentence in the passage that helps explain why this pattern repeats. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Compare days 1 and 30. What pattern do the observations show, and about how long did it take to repeat?	**The Moon was first quarter and high in the sky at sunset on both days. That pattern repeated after 29 days.**
2	How did the Moon's appearance and location at sunset change from day 1 to day 8?	**It changed from first quarter high in the sky to full and rising near the eastern horizon.**
3	On which day, 8 or 15, would the class need to wait until later at night to see the Moon? Use the observations to explain.	**Day 15. The last-quarter Moon was below the horizon at sunset and would rise later, around midnight.**
4	How can the location of a full Moon change between winter and summer, even though its shapes keep repeating?	**In the Northern Hemisphere, a full Moon often crosses higher in winter than in summer. Its phases still repeat about every 29.5 days.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

On day 37, I predict a full Moon rising near the eastern horizon at sunset. Day 30 matches day 1, when the Moon was first quarter and high in the sky. Seven days after day 1, the table shows a full Moon on day 8, so I expect that pattern to repeat seven days after day 30.

Accept predictions that use the roughly 29.5-day cycle to connect day 37 with day 8. Locations are approximate and may vary with the time and place of observation.