More Stars Above

Compare what eyes and telescopes can reveal.

SC.3.E.5.5 "Investigate that the number of stars that can be seen through telescopes is dramatically greater than those seen by the unaided eye."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline the sentences that explain how a telescope helps people see more stars. Circle the words that tell why some stars cannot be seen with unaided eyes.

Eyes, Light, and Telescopes

1. On a clear, dark night, your eyes can spot bright stars, faint stars, and a pale band called the Milky Way. In the best viewing places, a person may see about 6,000 stars across the whole sky, though only about half are above the horizon at one time. City lights, clouds, and moonlight hide many of them.

2. A telescope gathers more light than your eyes can gather. Its large mirror or lens sends that light to an eyepiece or camera. This helps it show stars that are too faint for unaided eyes. A telescope does not make new stars. It lets people detect stars that were already in space but were hidden from view because their light was weak.

3. Scientists place some telescopes on high mountains or in space, where Earth's air and city glow cause less trouble. With powerful telescopes, scientists have found that the universe holds far more stars than people can see without tools. When you compare the two views, the telescope view contains a dramatically greater number of visible stars.

2 ANSWER WITH EVIDENCE

Use the passage

1. About how many stars might a person see across the whole sky in the best viewing places?

2. Why are only about half of those stars above the horizon at one time?

3. How does a telescope help people see stars that unaided eyes cannot see?

4. What does comparing the telescope view with the unaided-eye view show?

3 YOUR TURN

Your own words

Write exactly two sentences for a classmate who thinks a telescope only makes stars look bigger. Explain how a telescope changes the number of stars a person can see, and include the word light.

ANSWER KEY

More Stars Above

GRADE 3 · SC.3.E.5.5

PART 1 · READ AND MARK

Underline the sentences that explain how a telescope helps people see more stars. Circle the words that tell why some stars cannot be seen with unaided eyes. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	About how many stars might a person see across the whole sky in the best viewing places?	**About 6,000 stars.**
2	Why are only about half of those stars above the horizon at one time?	**Only half of the whole sky is above the horizon at one time.**
3	How does a telescope help people see stars that unaided eyes cannot see?	**It gathers more light, helping people detect stars whose light is too faint for unaided eyes.**
4	What does comparing the telescope view with the unaided-eye view show?	**A telescope view shows a dramatically greater number of stars.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

A telescope gathers more light than my eyes, so it can show faint stars that I cannot see without it. It does not create stars, but it reveals a much larger number of stars already in space.

Accept equivalent wording that telescopes collect more light and reveal faint stars that unaided eyes cannot detect. For the open response, accept two sentences that correctly state that telescopes reveal many more existing stars and include the word light.