

THE STANDARD

Observable Patterns of the Sky

Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.



ESS1.B • Earth and the Solar System

"The orbits of Earth around the sun and of the moon around Earth, together with the rotation of Earth about an axis between its North and South poles, cause observable patterns. These include day and night; daily changes in the length and direction of shadows; and different positions of the sun, moon, and stars at different times of the day, month, and year."

This whole standard lives in one move: 5th graders take real sky data and turn it into a graph that makes a pattern jump out. They measure how a shadow shrinks and stretches through a day. They chart how many hours of daylight a date gets. They list which stars show up in which months. Once it is graphed, the pattern is impossible to miss. The sky is not random. **It repeats.**



Analyzing and Interpreting Data

"Represent data in graphical displays (bar graphs, pictographs and/or pie charts) to reveal patterns that indicate relationships."

5th graders are ready to graph, and this standard expects it. They are not just told a pattern exists. They build the bar graph or pictograph themselves, then read it to spot the repeat. **The skill is turning a messy list of measurements into a picture that shows the trend at a glance.**



Patterns

"Similarities and differences in patterns can be used to sort, classify, communicate and analyze simple rates of change for natural phenomena."

This is the big idea 5th graders carry out the door: the sky changes on a schedule. Shadows change length all day, the same way, every day. Daylight stretches and shrinks across the year, the same way, every year. **Once you see the repeat, you can predict what comes next.**