

Name \_\_\_\_\_

## Tides: The Dance of Earth and Moon

### Short Answer Key

1. There are two high tides and two low tides each day in coastal regions because of the Moon's gravitational pull. The Moon's gravity creates a tidal bulge on the side of Earth facing the Moon and another on the side facing away. As Earth rotates on its axis, locations on its surface pass through these tidal bulges, resulting in two high tides and two low tides approximately 12 hours and 25 minutes apart.
2. Spring tides occur during the new moon and full moon phases when the Sun, Earth, and Moon are aligned. Their gravitational pulls combine, leading to higher high tides and lower low tides. Neap tides happen during the first and third quarter moon phases when the Sun and Moon are at right angles to each other. Their gravitational pulls partially cancel out, resulting in lower high tides and higher low tides.
3. Some coastal regions experience king tides when the Moon is closest to Earth in its elliptical orbit. King tides are higher-than-average high tides that occur during specific times of the year. They are influenced by the Moon's proximity to Earth and can result in exceptionally high tidal ranges.

