**Phases, Eclipses, and Tides**

**Key Concepts**

* [The changing relative positions of the moon, Earth, and sun cause the phases of the moon, eclipses, and tides.](https://www.pearsonsuccessnet.com/snpapp/iText/products/0-13-181247-5/ch1/ch1_s3_1.html#lnk020.5)
* [The phase of the moon you see depends on how much of the sunlit side of the moon faces Earth.](https://www.pearsonsuccessnet.com/snpapp/iText/products/0-13-181247-5/ch1/ch1_s3_2.html#lnk021.4)
* [When the moon’s shadow hits Earth or Earth’s shadow hits the moon, an eclipse occurs.](https://www.pearsonsuccessnet.com/snpapp/iText/products/0-13-181247-5/ch1/ch1_s3_3.html#lnk023.4)
* [A solar eclipse occurs when the moon passes directly between Earth and the sun, blocking sunlight from Earth.](https://www.pearsonsuccessnet.com/snpapp/iText/products/0-13-181247-5/ch1/ch1_s3_3.html#lnk024.1)
* [During a lunar eclipse, Earth blocks sunlight from reaching the moon.](https://www.pearsonsuccessnet.com/snpapp/iText/products/0-13-181247-5/ch1/ch1_s3_3.html#lnk025.1)
* [Tides are caused mainly by differences in how much the moon’s gravity pulls on different parts of Earth.](https://www.pearsonsuccessnet.com/snpapp/iText/products/0-13-181247-5/ch1/ch1_s3_4.html#lnk026.3)
* Side of the Earth closest to the moon and the side furthest have high tides.
* Two high tides and two low tides each day.
* Tidal cycle is about 25 hours because the moon revolves slightly in one day and tide has to “catch up”
* [The](https://www.pearsonsuccessnet.com/snpapp/iText/products/0-13-181247-5/ch1/ch1_s3_4.html#lnk026.3) sun’s gravitational pull also contributes to the tides causing spring and neap tides to occur

**You should be able to:**

* Describe what causes the phases of the moon.
* Identify and describe each phase of the moon in order.
* Describe what an eclipse is and why it occurs.
* Compare and contrast solar and lunar eclipses.
* Describe the effect of the moon on tides.
* Identify how often tides change and why.
* Compare and contrast spring and neap tides.

**Key Terms**

* [phases](https://www.pearsonsuccessnet.com/snpapp/iText/products/0-13-181247-5/ch1/ch1_s3_2.html#lnk021.3)
* [solar eclipse](https://www.pearsonsuccessnet.com/snpapp/iText/products/0-13-181247-5/ch1/ch1_s3_3.html#lnk023.4)
* [penumbra](https://www.pearsonsuccessnet.com/snpapp/iText/products/0-13-181247-5/ch1/ch1_s3_3.html#lnk024.1)
* [tide](https://www.pearsonsuccessnet.com/snpapp/iText/products/0-13-181247-5/ch1/ch1_s3_3.html#lnk024.2)
* [neap tide](https://www.pearsonsuccessnet.com/snpapp/iText/products/0-13-181247-5/ch1/ch1_s3_3.html#lnk024.3)
* [eclipse](https://www.pearsonsuccessnet.com/snpapp/iText/products/0-13-181247-5/ch1/ch1_s3_3.html#lnk025.1)
* [umbra](https://www.pearsonsuccessnet.com/snpapp/iText/products/0-13-181247-5/ch1/ch1_s3_4.html#lnk026.2)
* [lunar eclipse](https://www.pearsonsuccessnet.com/snpapp/iText/products/0-13-181247-5/ch1/ch1_s3_4.html#lnk027.1)
* [spring tide](https://www.pearsonsuccessnet.com/snpapp/iText/products/0-13-181247-5/ch1/ch1_s3_4.html#lnk027.3)
* waxing
* waning
* crescent
* gibbous