

# NIGHT Box

## Objectives

Students will learn the following:

- > Difference between stars, planets, and moons
  - > What is a constellation
  - > Moon phases
  - > Light pollution
  - > Basics of night hiking
  - > Different nocturnal animals
  - > Hands-on activities (Star compass, flashlight activities, night hike, etc.)
  - > Global Feature & National Park Spotlight
  - > Empathy around being blind
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## Materials

The materials included in the box are:

- > Star gazing resource cards
  - > Multiple settings headlamp
  - > Emergency hand crank and solar powered flashlight
  - > Glow-in-the-dark carabiner
  - > LED strap
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## Discussion

You may want to use the following as a discussion guide with your child:

- > Why is it important to know how to navigate at night?
  - > Besides stars and planets, what are some other objects you may be able to see in the night sky?
  - > Why is it important to know the limitations of your gear, especially battery life?
  - > What does empathy mean to you and why is it important?
  - > What would be some of the challenges with limited access to electricity?
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## Evaluation

Test your child's newfound knowledge with the following questions:

- > What is the difference between stars, planets, and moons?
- > What is a constellation?
- > Name the two most important constellations for navigating at night in the northern hemisphere, and the most important one for navigating in the southern hemisphere.
- > Why is the North Star or the Southern Cross important for navigating at night?
- > What are some of the uses for a flashlight?
- > How do you optimize your night vision?
- > Name at least two phases of the moon.

## Vocabulary\*

\*provided by the Merriam-Webster Dictionary

**Echolocation** – A physiological process for locating distant or invisible objects (such as prey) by sound waves reflected back to the emitter (such as a bat) from the objects. CONTEXT: Since there may be very little light at night, many animals use echolocation to get around and find food.

**Fusion** – The union of atomic nuclei to form heavier nuclei resulting in the release of enormous quantities of energy when certain light elements unite. CONTEXT: Our nearest star - the sun - is powered by the process of fusion.

**Hemisphere** – Half of a spherical or roughly spherical body (such as a planet). CONTEXT: The northern or southern half of the Earth as divided by the equator and the eastern or western half as divided by a meridian.

**Mythology** – An allegorical narrative. CONTEXT: Many names for the constellations come from mythological figures.

**Nocturnal** – Of, relating to, or occurring in the night. CONTEXT: Many different animals only come out at night.

**Phase** – A particular appearance or state in a regularly recurring cycle of changes. CONTEXT: The moon goes through eight phases.

**Portable** – Capable of being carried or moved about. CONTEXT: All the items you take with you on a hike should be very portable.

**Reflection** – The return of light or sound waves from a surface. CONTEXT: Moonlight is the reflection of sunlight on the moon's surface.

**Satellite** – A celestial body orbiting another of larger size or a manufactured object or vehicle intended to orbit the earth, the moon, or another celestial body. CONTEXT: The moon is a satellite to the Earth. We also send up manmade objects to orbit the Earth, which we call satellites as well.

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