

# Nighttime Explorer

Twice a year, most of the United States move their clocks either forward or backward by an hour, known as daylight saving time. This event was created as a worldwide effort to save energy by using less artificial light. In celebration of the time of year where we “fall back an hour“ with daylight savings time and the nights get longer, we are going to explore the darkness and the animals, plants, and worldwide traditions that thrive at night.

How to earn the Nocturnal patch the Girl Scout way:

## Steps:

1. **Discover**—Discover nocturnal plants and animals.
2. **Connect**—Learn about the longest night of the year.
3. **Take Action**—Celebrate the night.

## Materials Needed:

In order to complete this patch, you'll need:

- Resources: You can either go online with an adult, ask a professional, or visit your public library.
- Optional: a flashlight, a white sheet, rope, a camera (See Step 3.)

## Step 1

## Discover nocturnal plants and animals.

There is a whole world that comes out after dark. Using your available resources, discover what it means to be nocturnal.

- What nocturnal animals live near us? Listen to what sounds they make. When you go outside at night, can you identify any of them?
- Learn about where nocturnal animals go during the day and what kinds of special characteristics help them thrive at night.
- Synchronous fireflies are a rare type of firefly found here in our own council during the summer. One species was found for the very first time in Allegheny National Forest in 2012.
  - What does it mean to be a synchronous firefly?
  - There are fifteen species of fireflies in our state. Can you spot the difference between them?

Animals aren't the only nocturnal species.

- Try to spot a plant that blooms only at night.
- Some plants reflect the moonlight by having silvery or leaves. What plants do you see outside that have these? Observe the plant during the day and again at night and see how it reflects the moon.
- Design a moon garden featuring all your favorite night bloomers.

The land isn't the only place with plants that prefer nighttime.

- Learn about bioluminescent algae and how it glows at night.

## Step 2

# Learn about the longest night of the year.

Using your available resources, learn about the earth's tilt and why the length of daylight changes during the year.

- Which places have some of the longest nights in winter?
- How does the number of daylight hours in summer and winter change, depending on where you live?

In many places that have extreme changes of daylight during the year, the longest and shortest days of the year are often celebrated.

- With the help of an adult, explore either your local library or online to discover traditions from around the world that celebrate the longest night of the year.

## Step 3

# Celebrate the night.

Be a citizen scientist! There are over 160,000 species of moths around the world and 131 have been found in Pennsylvania.

- Create a moth observation site by hanging a white sheet up outside. Leave a light shining on as much of it as possible and step back and watch all the different moths and bugs the light will attract.
- How many species can you identify? Take it a step further and photograph your findings and submit it to the Butterflies and Moths of North American citizen scientist project:

<https://www.butterfliesandmoths.org/>

You could also celebrate the nighttime with your friends and family by planning your own festival to celebrate the dark nights. Examples of activities include playing night games, making shadow puppets, or cooking a meal around a fire.



## All done? CONGRATULATIONS!

You've completed all the necessary steps to earn the Nocturnal patch.

After completing the activities from each step, visit or call a Girl Scouts Western Pennsylvania retail shop at 800-248-3355 to purchase your patch.\* A patch may be worn on the back of a vest, sash or tunic.

\*Patch shown may be substituted with similar patch, based on availability.