



Lesson Plan

Nocturnal Nature

Summary

1. Subject(s): Exploring the nocturnal world
2. Objective: Students will observe and learn about different nocturnal insects in celebration of National Moth Week.

Key Vocabulary

- Habitat - place or environment where a plant or animal naturally or normally lives and grows
- Adaptation - a behavioral or physical characteristic that helps an organism survive in the environment
- Nocturnal - active during the night
- Life Cycle - developmental change in the form or structure of an animal (such as a butterfly or a frog) occurring subsequent to birth or hatching

Activities that you can do at home or in your backyard:

- Mothing Sheet set-up Guide, Sound Mapping, Moth Mask, Life cycle
- [Moth Coloring Pages](#)



Mothing Sheet

Have you ever noticed how bugs including moths are attracted to a porch light? Grab an old, white sheet and hang it up near a light! You can use rope or clothespins to hang up your sheet. As the sun sets, turn on your porch light and watch all of the insects that start congregating. You may find cicadas, crane flies, and beetles in addition to moths. You can use the App “iNaturalist” or the kid-friendly version: “Seek” by iNaturalist.org to help with identification. If you want to get really fancy, use a black light set-up!

Entomologists aren’t sure why moths are attracted to light. One theory is that lights at night blind moths by swamping the light receptors in their eyes and disorienting them. Other theories involve confusing man-made lights for the Moon. Here is a great resource for more information on mothing - NationalMothWeek.org

Questions for activity wrap up:

What moths or other insects landed on your moth sheet? What characteristics do these insects have and why do you think they have these specific adaptations?

What other animals might be out at night?

Did the insects remind you of anything?

What do you think moths eat?



Sound Mapping

Sound Mapping is an engaging activity focused on using your sense of hearing. After the sun has set, pick a safe spot in your backyard to sit, or inside with a window open. We will listen for nocturnal wildlife as well as any non-natural sounds of your neighborhood such as people or cars. Some sounds you might hear include: cicadas, katydids, flying squirrels, and birds.

Counting Sounds: Sit or stand in a spot in your back yard or inside by an open window. Close your eyes and “open your ears.” For every sound you hear, hold up a finger. Stress the importance of remaining silent during this activity. After a couple of minutes open your eyes and then discuss the different sounds they heard.

Sound Mapping: Sound Mapping is an engaging activity focused on using your sense of hearing. To play, use a piece of paper with an ‘X’ marked in the center, and with the date and time in the corner. The paper is a sound map and the X represents where you are sitting. When you hear a sound, make a mark on the paper to represent the sound. Your mark can be a simple design, such as a few wavy lines representing a gust of wind, or a musical note indicating a singing bird. Making simple marks keeps the focus on listening rather than on drawing. If you are unsure of the source of the sound, draw a question mark. The location of the mark should indicate the direction and distance of the sound from your seat. Close your eyes while listening. To help increase hearing ability, you can make “fox” ears by cupping your hands behind your ears. This hand position will create a greater surface area to capture sounds. Then cup the hands in front of the ears (palms facing backwards) to hear the sounds from behind them more easily. Listen for urban sounds and sounds of nature. This activity can be done daily or weekly, compare your maps as you go!

After you have shared your maps, ask these questions:

What sounds were the most familiar to you? What sound had you never heard before? Do you know what made the sound?

What sound did you like best? Why?

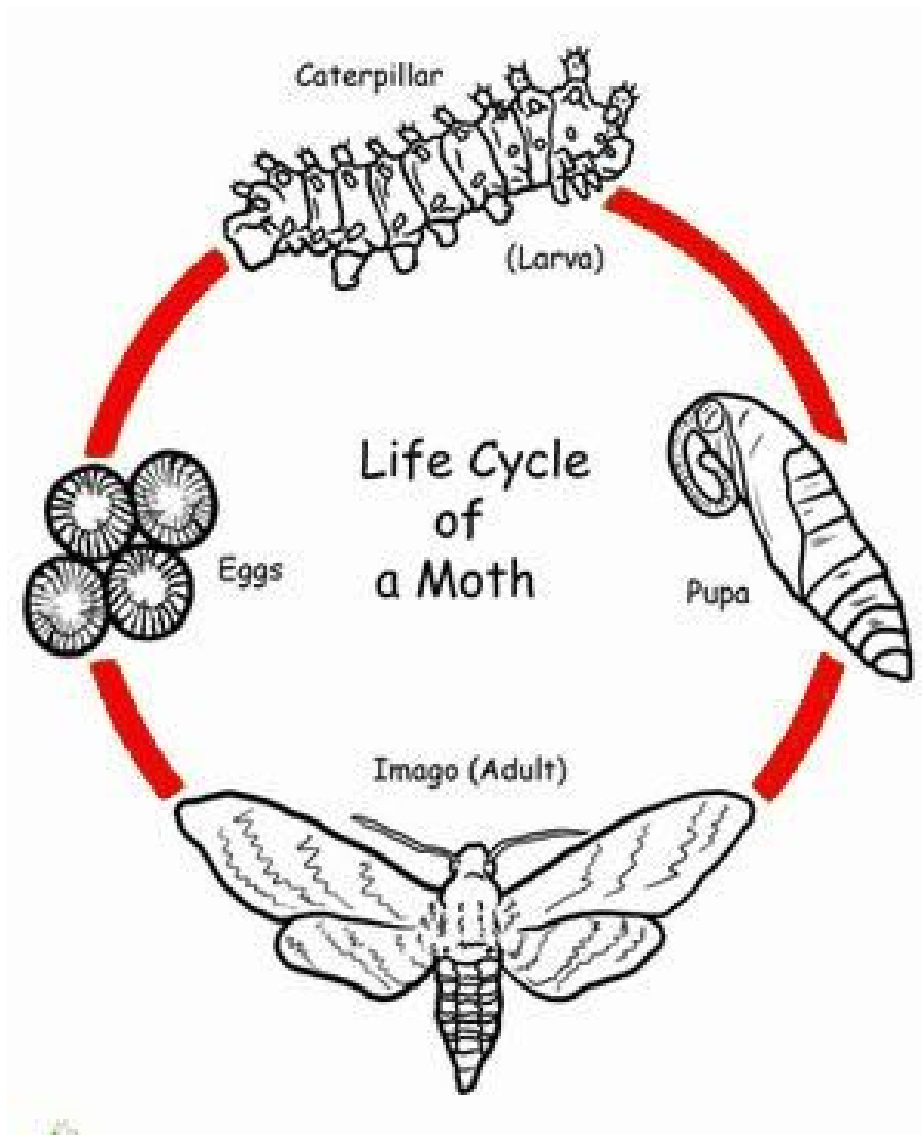
How do animals use their sense of hearing? How does the shape of an ear impact hearing?

What animals do you think have really good hearing? Why do insects make noise at night?



Moth Life Cycle

Moths undergo complete metamorphosis. Color in their 4 stages of their life cycle below.



Source: pestwiki.com

Make your own moth mask!

1. Color your moth mask however you'd like! Use the colors and patterns of a real moth, or use your creativity and make up our own moth!
2. Use scissors to cut out the eye hole openings and the outline of the moth.
3. Attach a popsicle stick to the back using glue or tape. Another option is to cut small holes on the sides using a hole puncher and pull a string through the mask and tie the string around your head.



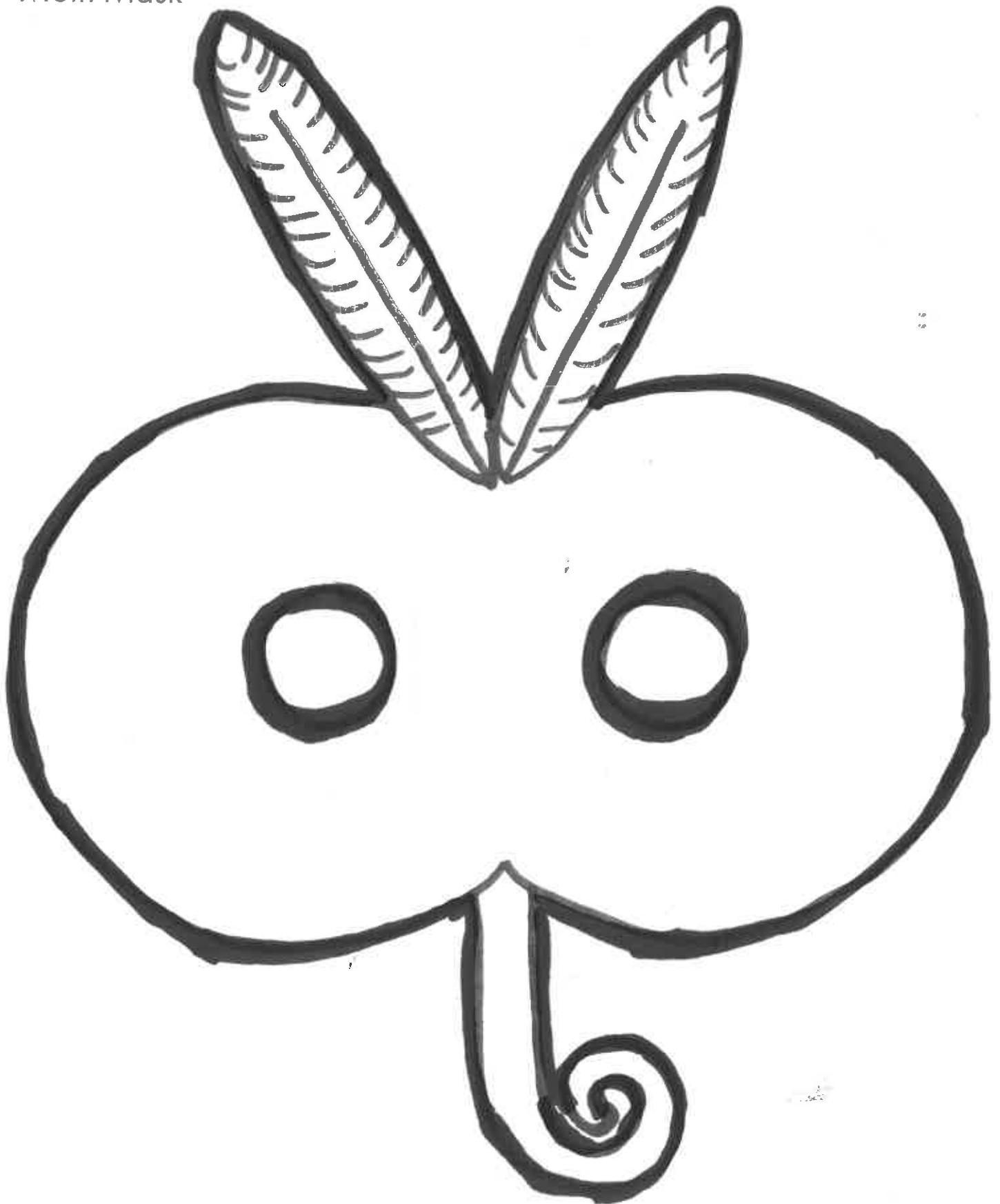
Moth Facts:

- Scientists estimate there are more than 160,000 moth species in the world, compared to only 17,500 butterfly species.
- Their colors and patterns are either dazzling or so cryptic that they define camouflage. Moths can be as small as a pinhead or as large as an adult's hand.
- Most moths are nocturnal, but some fly in daylight like butterflies.
- Moths are in the order: Lepidoptera
- Some suck nectar with a proboscis moth part. Others don't eat at all in their adult stage, such as the Luna Moth.
- They can have antennae that are filiform, pectinate, or bipectinate (resemble a feather, like your mask).

Source: nationalmothweek.org



Moth Mask



Silkworm Moth #2

