

Night Walk Outline

Big Idea

Night time has a multitude of sensory opportunities.

Essential Questions

- How do the adaptations of nocturnal and diurnal animals differ?
- Why are humans less comfortable outside at night?
- How do our senses help humans and animals understand the world around us?

Vocabulary

- Bioluminescence—light created by living organisms
- Constellation—a group of stars visible from Earth that forms a distinctive pattern and has a name linked to its shape
- Crepuscular—plants and animals that are open or active at dusk and dawn when light level is low
- Diurnal—plants and animals that are open or active at daytime rather than at night
- Echolocation—locating an object using sound waves. Used by bats to catch prey and navigate
- Nocturnal—plants and animals that are open or awake at nighttime as opposed to the daytime
- Pupil—The part of the eye that lets in light. Night vision develops as the pupil opens to allow more light to enter.
- Rod and Cone cells—Light detecting cells in the eye. Rods only detect light and motion, while cones are specialized cells that detect color.
- Triboluminescence—light created from friction as with quartz
- Waning—the term used to describe a moon that is becoming full
- Waxing—the term used to describe a moon that is becoming new

Activities

(this is not a program outline but a list of activities that can be used depending on evening conditions)

- Introduction
- Activities To Be Done While Walking
 - Walking to the Trail
 - Preparing to Walk on the Trail
 - Pass It Back

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- Stationary Activities That Can Be Done With Or Without Light
 - Nocturnal Animal Discussion
 - Owl Calling
 - Bat Detectors
- Stationary Activities That Require Some Light
 - Night Animal Charades
 - Solo Sit
 - Bat and Moth Game
- Stationary Activities That Require Low Light or Darkness
 - People and the Dark (Alternative to Solo Sit)
 - Rods and Cones
 - Night Vision Candle Activity
 - Triboluminescence Activities
 - Sound Matching
 - Sky Watching

Night Walk Activities



Lead In

LESSON INTRODUCTION

5 Minutes

Gather the entire class in the Dining Hall or other prearranged meeting place. Have the students sit with their lesson groups, and make sure there is at least one adult per lesson group.

Procedures

Tell the students that they are about to begin exploring the Smokies at a very special time—night time. The night walk is similar in some ways to other programs at Tremont, but it will seem very different because it will be dark. They will not be using flashlights, but will let their night vision develop and discover how much they really can see. Even though they might feel uncomfortable in the dark, they should know that the Tremont naturalists plan to keep everyone safe. The night walk is often a favorite activity for many students, especially for those that focus on the sights and sounds and smells of nature instead of on their friends.

In order to keep everyone safe and make sure everyone has a good chance to learn, there are two rules: stay in a single-file line and stay quiet. While walking, they won't always see the Tremont naturalist, but they will be able to see the person right in front of them. In front of that person should be another classmate, then another and another, all the way up to the naturalist at the start of the line. The teacher or chaperone will bring up the rear. There will be times during the walk when they will be able to talk or ask questions, but most of the time it's best to be quiet. A silent night walk group is much more likely to hear owls and to have a good time.

Wrap Up

Call one lesson group at a time to line up at the door and head out. Check as they are leaving to make sure that each group has an adult and no students have flashlights.



LESSON PROCEDURES

50 Minutes

A night hike does not follow any set formula at Tremont. Groups will vary in their interests and ability levels, and nights will vary in their darkness, weather, and active wildlife. In general, the walk itself will be no longer than $\frac{1}{4}$ of a mile, and will usually be much shorter. Following is a list of activities.

Night Walk Activities



ACTIVITIES TO BE DONE WHILE WALKING

WALKING TO THE TRAIL

10 Minutes

Lead In

As soon as your group has separated from the entire class and is away from the doorway, ask them to bunch up so you can talk to them. Tell them you know it's dark, and this is a great opportunity to explore using their other senses besides sight. As the group walks toward the trail, you have several tasks for them. Have the students return to their single-file line with the teacher at the rear.

Procedures

Tell the students that for the first few minutes, you want them to focus on the sense of touch. Ask them to notice what they feel beneath their feet, what the temperature is like, and if they brush against any branches or plants. Is there a breeze? What else do they feel? Tell them not to say these things aloud while they're walking, but that you'll stop soon and give them a chance to share.

Stop after a few minutes, have the students bunch up again, and let one student at a time tell what he or she felt. Repeat this process next with the sense of sight (they should see more now that their eyes are adjusted to the light), then with sound, and then with smell.

Wrap Up

The last task should bring you to the trailhead. Ask the students if what they saw, felt, heard, and smelled was similar to what they might experience in the daytime. Was there anything that could only be encountered at night?



PREPARING TO WALK ON THE TRAIL

5 Minutes

Lead In

Tell the students that they are about to walk into the woods. If there have been any issues with staying in line or staying quiet, now is the time to address these—make sure the students know it's a matter of their safety.

Procedures

Explain that in the woods, there are more obstacles than they have encountered so far. For the group to travel over and around these obstacles, each student should take care of him or herself as well as the other people in the group. To take care of themselves, students need to take their time, think about each step, and pick up their feet when they walk. To take care of each other, they should NOT hold onto one another. Instead, they should warn the person right behind them about any rocks or roots. This is the only reason they should talk, and they should do so

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in a low voice.

Wrap Up

Ask a student to review the best way to walk on the trail in the dark, in case anyone missed it. Play it up as an opportunity for adventure, and ask the group if they are ready to walk into the woods.

PASS IT BACK

Lead In

Find something natural that can be picked up and passed down the line. (Do not pick anything living.) Think of a fun or unique name for it.

Procedures

Pass the object down the line of hikers, each person whispering the name he or she has heard in the ear of the person behind. For example, a sweet gum ball may be passed along as a “porcupine egg.”

Wrap Up

The next time the group stops, find out if all the objects made it to the end of the line with their original names. What new names did objects acquire?



STATIONARY ACTIVITIES THAT CAN BE DONE WITH OR WITHOUT LIGHT NOCTURNAL ANIMAL DISCUSSION

10 Minutes

Lead In

While walking down the trail, ask the students to think about which animals might be around, but not to say anything until the next time you stop.

Procedures

Stop and gather the group in a wide spot in the trail. Have the students stand or sit in a circle and ask each student to tell one animal they think might be out at night in the Smoky Mountains. Make sure each student has a chance to speak before anyone is allowed to take another turn.

Ask the students to tell you the word that refers to animals active at night. (nocturnal) Explain that many of the animals they have just mentioned (for example, mice, bats, moths, lightning bugs, beavers, owls and a few other birds like whip-poor-wills, and some salamanders such as hellbenders) are truly nocturnal. Most animals we think of as nocturnal, like coyotes, bobcats, foxes, raccoons, possums, katydids, and deer, are really not active all through the night. Instead, they are most active early in the morning and late in the evening, or at dawn and dusk. These animals are called crepuscular. Some other crepuscular animals are fish and songbirds. Animals that are most active in the daytime are called diurnal.

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Wrap Up

Ask the students what adaptations might be useful for nocturnal or crepuscular animals. Some examples might be good night vision, other strong senses, the ability to travel quietly, a warmer body covering, or camouflage to hide while they sleep in the daytime.



OWL CALLING

10 Minutes

Lead In

Ask the students why it would be useful for nocturnal animals to have a strong sense of hearing. (They may be listening for predators or prey, or they might communicate by calling.) Ask them which nocturnal or crepuscular animals might find each other by calling. (Frogs, katydids, coyotes, or owls)

Procedures

Show the students how to strengthen their hearing by cupping their hands behind their ears, and explain that many animals' ears are designed this way to help gather sound. Have the group sit silently for thirty seconds or so, listening to the sounds of the evening. Tell them that while there are several different kinds of animals that communicate by calling at night, owls are the easiest to imitate and the most likely to answer a human. Have the students stay silent and point their newly enlarged ears in different directions to listen for answers as you call. Use an "Identifyer" or imitate the calls yourself, telling the group about the owl you are calling. Make sure to leave some time in between calls to let the students hear any owls that answer. The Barred Owl is a good one to let the group try calling after they've heard your call. Tell them that the way to remember is that it sounds like it's saying "Who cooks for you?" Have the group call together on the count of three, then listen.

Wrap Up

If an owl does answer, take a few minutes to listen to it. Call a few times to carry on the conversation and watch to see if it comes nearer. If no owls answer, don't act too disappointed or the students will be, too. Pass around the owl skull replica and feathers for them to look at and touch, and if it's light out show them the pictures of owls on the "Owls of Tremont" sheet.



BAT DETECTORS

10 Minutes

Lead In

While at the edge of the woods or in the field, tell the students to keep an eye open for bats. Once you've spotted them, have the group sit in a circle.

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Procedures

If it's still light out, show the bat pictures on the "Bats of Tremont" sheet. Ask the students what they already know about bats: Are they birds? (no, they're mammals) What do they eat? (In the Smokies, insects. Bats in other parts of the world may eat fruit or blood from livestock.) Where do they spend the day? (In caves, old buildings, hollow trees, or even in the branches of trees) What do they do in the winter? (Many hibernate in caves, barns, or hollow trees, and some migrate.) How do they find their food? (By echolocation, making sounds and listening to hear them bounce back.) Why can't humans hear the sounds bats make? (The sounds are too high-pitched.)

Tell the students that you have an instrument called an ultrasound detector. It can detect sound waves that are out of our range of hearing and lower the pitch so we can hear them. Have the students stay very still, as the detector will pick up rustling clothes and whispering. Point the detector at the closest bat and turn the volume all the way up. Move the frequency dial until you pick up a sound like a fast clicking or popping—that's the bat. Listen as the clicking speeds up—the bat is nearing its prey, so the time between making sounds is shorter and shorter. Sometimes there will be a buzz as the bat catches and eats the insect.

Wrap Up

Show the students how to change frequency and let them try using the bat detector. While one student uses it, the others should be watching the bats to see how their flight correlates with their sounds.



STATIONARY ACTIVITIES THAT REQUIRE SOME LIGHT

Night Animal Charades

20 Minutes

Lead In

Come to a spot where you can gather the group together.

Procedures

Divide the group into small groups of 2 or 3 people. Explain that they will be handed a card on which is written something they have to act out. The card will be something related to nature. Each member of the group must participate.

- Hand out the charades cards.
- Give the groups a few moments to 'get their act together.'
- Let one group at a time perform while the other students watch. Once a group is done acting, they will freeze in position and the other students will guess what they portrayed.

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Wrap Up

Ask the group how they determined what was being portrayed. (i.e., actions, behaviors, etc.) Did it make them think of their subject in a different way?



Solo Sit

15 Minutes

Lead In

Ask the students what they have noticed so far about being outside in the evening as compared to the daytime. Tell them that people often leave the woods as the day ends, but because this group is lucky enough to experience it at this special time, you're going to let them each have a little time to themselves.

Procedures

Explain that for the next five to ten minutes, they will each have a special spot. Their spot should be far enough away from anyone else's that nobody is tempted to talk. In the special spot, they can write, draw, think, or just sit still in nature. They can sit or lie down, but should not be walking around, throwing things, or otherwise disturbing their friends or the wildlife. Set boundaries and let each student find a spot, or assign a spot to each. Establish a signal, such as a whistle, that will let them know when to return.

Wrap Up

Blow the whistle and count heads to make sure the whole group has returned. Gather in a circle and let the students share their experiences from the solo sit.



Bat and Moth Game

10 Minutes

Lead In

Gather students into a large circle. Explain that bats use something called echolocation in order to find their prey. The bat emits a high frequency sound that bounces off an object such as a moth, mosquito, or flying beetle. Using one student as the bat and one as the moth they will demonstrate how the bat uses sound to catch its prey.

Procedures

Blindfold one student in the middle of the circle. Have this student think of a sound to make (EEK, hubba hubba, etc.). Now choose a student to be a moth. This student also needs to think of a sound to make and must answer with this sound each time the bat uses his or her sound (like Marco Polo). The remaining students in the circle have a very important job. They are the habitat. If the bat or moth come too close to the edge of the circle, they should whisper "Habitat" so the bat and moth do not exit the circle.

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For students who may have trouble catching their first moth, add additional students into the circle for the bat to catch. If students continue to have a hard time catching their moth after a few minutes, start counting down from 10 to sunrise when the bat must return to its shelter.

Repeat game with different students acting as the bat and moth. The students could play this for hours so be careful not to spend too much time playing this game. Depending on the size of the group, you may not be able to let all of the students be a bat or a moth.

Wrap Up

Ask the students what it was like being a bat. How about a moth? Was it always easy for the bat? Tell them that most bats catch and eat over half their body weight in insects every night. Are they better adapted at echolocation than humans? If there are bats in the sky, have the students look at the way they move, quickly darting and maneuvering to catch the insects. What other adaptations do bats have besides echolocation?



STATIONARY ACTIVITIES THAT REQUIRE LOW LIGHT OR DARKNESS

People and the Dark (alternative to solo sit)

10 Minutes

Lead In

Find a very wide flat spot where everyone can sit down in a circle. Ask the students if humans are nocturnal animals. (No, we can choose to come outside at night but function much better in the daytime.) Then why do we at Tremont take school groups outside at night? (To experience the woods at a different time, to see that it's not really as scary as they think it is.)

Procedures

Tell the group that sometimes schools that go on night walks here just can't settle down. They talk and giggle and play around, and it's not because they're trying to misbehave, it's because they're scared or uncomfortable in the dark. Is it OK to be afraid in the woods at night? (Sure. It's normal, and most people feel it.) Why are humans uncomfortable in the dark? (We depend on our sense of sight; we don't spend much time in the dark; we worry about nocturnal predators in the woods; we imagine that scary things from stories or movies or TV are out there to get us.) Most of our fears are from our imaginations: none of the nocturnal predators in the Smokies are out to get us, and the characters we remember from movies and stories just aren't real. If we realize that, the same big brains that get us so worked up can also help us to not be so afraid. Night in the Smokies is a peaceful time, and it would be a shame not to enjoy it because of things we don't even need to worry about.

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Wrap Up

If the group isn't already seated in a circle, ask them to do so. Make sure everyone has a spot in the circle, then have them all stretch their legs toward the center. Explain that for the next minute, everyone is going to get the chance to experience night in the woods. Have the group lie back so that the circle looks like spokes in a wheel, and ask them to stay silent. They can look up through the trees towards the sky, listen for night sounds, and remember that there's nothing here to hurt them. Judge your group and stay down for thirty seconds to a few minutes before letting them sit back up when they're ready. If you have another stationary activity planned, the students can stay lying down if they'd like.



Rods and Cones

15 Minutes

Lead In

Ask the students how much their night vision has developed since they first came outside for the evening. Can they see the silhouettes of trees? How about their friends' faces, or light-colored lettering on someone's clothing? They can probably see much more clearly and in much more detail than when they stepped out the door a while ago, but can they see in color? Explain that humans have two kinds of light-receptor cells in our eyes: rods and cones. Rods show light from dark and can sense motion, while cone cells are for color vision. Which type do they think require more light to work? (Cones) Which are more instrumental in night vision? (Rods)

Procedures

- **Rods—The Disappearing Head Trick (needs near-darkness)**
Ask the students to remind you what rod cells do. (They detect light from dark and sense motion.) Tell them that in the eye, cone cells, which don't work well in the dark, are packed closely together in the center of the retina, while rod cells are arranged in a ring surrounding the cone cells. Because of this, staring straight ahead at things in the dark makes it very hard to see them. Take a few steps back from the group, standing in shadow if there's still a good amount of light, and tell them to stare straight at your head without moving their eyes. After a few seconds, it should look like your head has disappeared.

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- Cones—Pick one of the following three activities:
 - Guessing Colors of Paper
Ask the students to remind you what cone cells do. (They see colors but don't work well in the dark.) Tell them that you are going to test their cone cells by holding up pieces of colored paper for them to guess what color each piece is. Hold up each piece of paper and have the group come to a consensus before telling them what color it really is, as written on the back. Before taking your papers out with a group, look at the writing on the back to be sure you can read it in the dark.
 - Guessing Colors of Crayons
Ask the students to remind you what cone cells do. (They see colors but don't see well in the dark.) Tell them you're going to test their cone cells by handing them each an unwrapped crayon and a scrap of paper. They should decide what color they think their crayon is, then use the crayon to write that color on their paper. Collect the crayons, but tell them to keep their paper until you return to the Dining Hall so they can see what color the crayon really was.
 - Guessing Colors of Balloons
Ask the students to remind you what cone cells do. (They see colors but don't see well in the dark.) Tell them you're going to test their cone cells by having them guess the colors of balloons. Hold up one balloon at a time and have the group come to a consensus as to its color, then stretch it over the end of a low-powered flashlight and turn on the flashlight to reveal the color.

Wrap Up

Ask the students to think of animals that they know are colorblind. (Dogs) What are their wild relatives? (Wolves, foxes, and coyotes) These animals are all nocturnal—what light-recepting cells might be most common in their eyes? (Rods)



Night Vision Candle Activity

10 Minutes

*This should not be one of the first few activities in the night hike, because the students need time for their night vision to develop.

Lead In

Stop at a wide, flat place in the trail and have the group sit down in a circle. Ask them what they've noticed about their vision and how it's

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changed while they've been out in the dark. Tell them that whether or not they've noticed it, their eyes have been adjusting to the lack of light, and that they are about to participate in an experiment that will show them how human eyes develop night vision.

Procedures

Clear out a spot for the candle, making sure it's flat enough and free of dead leaves and other debris that could catch fire from the candle flame. Have each student cover one eye and leave the other one open to watch the candle as you tell a story. The story could be a constellation myth or one of the night awareness stories like "How the Stars Came to Be," "Nighttime Imagination," or "The Ghost in the Bedroom," or you could just talk about the mechanics of night vision as the students watch the flame. For this activity to really work, your story or discussion should last at least five minutes. Once the story is over, blow out the candle. Have the students look around first with the eye that was uncovered and then with the eye that they had covered.

Wrap Up

The students should be able to see well with the eye that was covered and should have greatly reduced vision in the one that was exposed to the candlelight. Ask them why this has occurred, and they should be able to answer that one eye is used to the dark, while the other is used to the light. You can expand this knowledge by explaining that the pupil of the eye gathers light. When light is abundant, the pupil contracts to avoid burning the eye, but in the dark the pupil grows larger to let in as much ambient light as possible. In the eye that watched the candle, then, the pupil shrank. When you blew out the candle, the pupil was too small to let in enough light to see in the dark woods. The other eye, though, in complete darkness, widened so that it was easier to see. This is how night vision develops.



Triboluminescence Activities

15 Minutes

Lead In

Stop in a wide, flat area where the group can stand or sit in a circle. Explain to the students that one reason for going outside after dark is the chance to see and experience the woods in different ways. Ask them what differences they have noticed already; answers will probably include cooler temperatures, different animals, and the obvious lack of light. Tell them that there are other things, too—plants are in a different phase of photosynthesis, dew (or frost) is beginning to cover surfaces, and stars are visible. Also visible now is another phenomenon known as triboluminescence.

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Procedures

- **Quartz Activity:** Tell the students that triboluminescence is the light produced by breaking or rubbing certain things. Friction adds energy to the material and excites the electrons in its atoms. When the electrons lose that energy, light is given off. It is a weak light, but easily visible in a dark place. One common mineral that exhibits triboluminescence is quartz. Take the two pieces of quartz and rub them together so all the students can see the resulting sparks, and depending on time, pass them around the circle so everyone can have a try.
- **Lifesaver Activity:** Explain to the group that although quartz is common around Tremont, you trust them to leave it where they find it during their visit to the National Park. On the other hand, there is something else hard, white, common, and triboluminescent that you will give them to keep. Pass out lifesavers, cautioning the students to remain silent and hold the object you give them until everyone has one. Once everyone is ready, have the whole group chew on the lifesavers with mouths open to see the sparks.

Wrap Up

Admire the light brought to you by triboluminescence. Tell the students that triboluminescence happens all the time, but is only visible after dark. It's easy to see and enjoy if they will only make the effort, just like anything else outdoors at night.



Sound Matching

5 Minutes

Lead In

Ask the group how nocturnal animals find each other in the dark. (Some mark territories with scent or use pheromones, some see each other, and many call to communicate.)

Procedures

Give each student a film can and tell them that everyone's can makes a noise when shaken. Each can has a partner that makes the same sound. When you give the signal, the students need to shake their film cans and try to find their partners. When a student finds his or her partner, the pair should sit down, so that when everyone is sitting down, you'll know they're all done.

Wrap Up

Have each pair shake their film cans to make sure everyone got the right partner. Ask the students how it felt to search for another member of their species in the dark. What made it easy or difficult?

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Lead In

Sky Watching

15-20 Minutes

Circle the group in an open area where everyone can see the sky. While still standing, establish landmarks that will help the group communicate where things are in the sky. Point out directions as compared to a clock: tell them which direction is 12:00, then ask which would be 6:00, 9:00, etc. Once everyone is oriented, have the group lie down.

Procedures

Give the students a moment just to look up at the sky, and ask them what they see. Depending on cloud cover and moon phase, the sky over Walker Valley will vary night to night and season to season. Some things you may see include:

- **An arm of the Milky Way:** Our galaxy is spiral-shaped and appears to us as a bright cloud stretching across the sky. In many places, light from human sources fills the night sky to such a degree that the Milky Way is not visible. Ask the students how the night sky over Tremont compares with the one over their own homes, and discuss light pollution's causes and effects.
- **The Moon:** It is always lit up on one side, just like the Earth. Its phases are caused by the angle between the moon and us viewing it on Earth. A waxing moon is lit on the right, and a waning moon is lit on the left. A full moon rises just as the sun sets, but when in other phases the moon rises at other times of the day or night. The moon and stars both seem to move across the sky in the same direction as the sun, from east to west, because of the Earth's rotation.
- **Planets:** You can tell the difference between a star and a planet because a star will twinkle and a planet will have a steady glow. Because of the variation in their orbits, planets will be seen at different times of night during different times of year.
- **Colored stars:** Some stars have a slight tint visible to the naked eye, caused by their temperatures. Blue stars are the hottest, followed by white, then yellow, and red stars are the coolest.
- **Meteors:** Also called a "shooting star" or a "falling star," a meteor is a piece of rock, ice, or dust entering Earth's atmosphere. It streaks across the sky very quickly and usually burns up before hitting the ground. Astronomers call a stray piece of rock, dust, or ice in the solar system that has not entered Earth's atmosphere a meteoroid, a meteor that hits the ground a meteorite, and a very bright meteor a fireball. There is a chance of seeing a few meteors on any clear dark night, and occasionally the Earth passes

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through a greater concentration of meteoroids, resulting in a meteor shower.

- **Satellites:** There are many man-made objects in orbit around our planet. Global Positioning Systems (GPS), satellite TV, and satellite phones are a few of the ways we use these objects. The International Space Station is a satellite. In the night sky, satellites look like small, slowly moving stars.
- **Airplanes:** Move faster than satellites but slower than meteors, look very big and sometimes colorful.
- **Constellations:** Throughout time, people of many cultures have seen characters from stories and myths in the sky. Have the students create their own dot-to-dot pictures and describe them to the group.
- **Summer Constellations:** The Big Dipper, Leo, and Cygnus are all easily seen in the summer.
- **Winter Constellations:** Orion, Cassiopeia, Taurus, and the Pleiades are all easily seen in the winter.

CONSTELLATION STORIES

ORION

Greek legend tells us that Diana, goddess of both the moon and hunting, fell in love with Orion, the bravest hunter of ancient times. She began to neglect her duty of driving the moon chariot across the sky at night to light it up, in order that she might go down to Earth to hunt with Orion. When her brother Apollo heard of this neglect, he decided to do away with Orion. He shone his golden rays so blindingly on Orion one day while he was swimming, that he appeared only as a faint dot in the waves. He then challenged Diana to hit the tiny target with her bow and arrow. Diana, not knowing what the target was, shot so accurately that her arrow hit Orion and killed him. When she found his body on the shore that evening, she realized what had happened. After trying in vain to bring Orion back to life, she put his body in her moon chariot and drove high across the sky where it was darkest. She put the body of her beloved Orion in the sky and suddenly the sky became bright with stars that outlined his body, jeweled belt, and glittering sword. At his foot to keep him company she placed his two favorite hunting dogs. Canis Major is one of the dogs at Orion's feet and is there to help chase Taurus the bull across the heavens.

THE BIG AND LITTLE DIPPER

The Big Dipper is one of the most easily-recognized constellations,

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and most cultures have a story about it. The official names of the Big and Little Dippers are Ursa Major and Ursa Minor, the Big and Little Bears, from the following Greek story. Zeus fell in love with a human woman named Callisto, who was a traveler and a huntress. His wife Hera was jealous, and turned Callisto into a large bear. Zeus couldn't change her back. Meanwhile, Callisto's son Arcas was getting worried because she hadn't come home from hunting. He set out to find her, and in a forest one day met a huge bear that charged right for him. Not knowing it was his mother, Arcas fitted an arrow to his bow and was about to kill the bear, when Zeus stepped in and changed Arcas into a smaller bear. Then Zeus grabbed both bears by the tails, swung them around, and threw them into the sky where they would be safe and immortal.

The Cherokee Big Dipper legend also tells of a giant bear, but this one is being chased by hunters across the sky. Other people have seen a plow, a chariot, and of course a long-handled pot or dipper. To find the North Star, Polaris, find the two stars that form the end of the dipper's bowl and follow an imaginary line outward about five times the distance between the two stars.

CASSIOPEIA

Cassiopeia was a beautiful queen that would always boast of her beauty. The maidens who attended King Neptune in his underwater kingdom learned that she made a boast that she was far more beautiful than any of them. They demanded King Neptune to punish her. Cassiopeia was placed in the heavens to be punished rather than honored. She swings every half night around the North Star. She is upside down in the chair in which she is seated, hanging on for dear life in a position most humiliating for a queen of old who was so proud of her beauty.

PLEIADES

The Cherokee legend of the Pleiades begins with eight brothers who wanted to become the best stickball players ever. They practiced all day, every day, and stopped helping the family with hunting and getting food. Their mother was angry that they played all day instead of doing their chores. One day they returned home late in the evening from practice and asked their mother for dinner. She told them to look in the pot over the fire, but when they opened the pot, all that was there was boiling water, a stick, and a ball. The next day, the same thing happened. The boys' mother told them they didn't deserve to eat until they stopped playing all the time and started helping the family again, and the boys were so upset that they ran out of the house and far into the woods.

They built a campfire and began dancing around it, asking the Great

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Spirit to help them get revenge on their mother. As they danced and chanted, the Great Spirit heard them and began lifting them into the sky, higher and higher. Frightened, the youngest looked down and stopped dancing long enough that he fell to the ground and left a deep hole from which a white pine tree sprouted. His seven brothers danced faster and faster, rising farther and farther from their home and everything they knew. Their mother went to find them early the next day before sunrise, and all she found was a huge white pine tree that looked like it was stretching its needles toward seven new stars in the sky. The boys never returned home.

LEO THE LION

The curving line of stars known as the sickle forms the head and mane of Leo, the Lion. Leo's main star, Regulus, is the faintest of the first magnitude stars. It was always a star of great importance to the ancient astronomers, who considered it to be the ruler over all other stars. Its duty was to keep them all in order and in the proper place in the sky. Leo is often seen in summer and the ancients believed that Leo's stars added to the heat of the sun making summer so hot.



Lesson Wrap Up

5 Minutes

Lead In

Tell the students that the night walk is almost over and these are their last few minutes to spend outside in the woods at night during this trip.

Procedures

From the trailhead back to the Dining Hall, ask the students to walk completely silently. There are no more obstacles, so there is no reason to speak to each other. Instead, they should try to appreciate the night for these last moments.

Wrap Up

Before reentering the Dining Hall, ask the students if they had fun. Then ask them how often night comes around. (Every night!) If they enjoyed spending a little time outdoors tonight at Tremont, they can do the same at home. They can go with friends or families into the yard and watch night come.

Night Walk Resources

Owls of Tremont



Eastern Screech Owl

Size: 6 – 10 inches tall; 19 – 24 inch wingspan

Weight: 4.3 – 8.6 ounces

Call: A descending whinny or whistled trill

Preys on: insects, rodents, small birds, and sometimes amphibians

Fun Fact: When an Eastern Screech Owl is frightened, it will flatten its feathers and squint its eyes so it looks like a stick.

Barred Owl

Size: 17 – 20 inches tall; 39 – 43 inch wingspan

Weight: 16.5 – 37 ounces

Call: Sounds like “Who cooks for you? Who cooks for you all?” Sometimes sounds like a monkey.

Preys on: small mammals, rabbits, birds, amphibians, reptiles, and crayfish.

Fun Fact: Barred Owls do have ears. They’re in the same place as on every owl – the sides of the head. The tufts on some owls’ heads are just feathers.



Great Horned Owl

Size: 18 – 25 inches tall; 40 – 57 inch wingspan

Weight: 2 – 5 pounds

Call: A series of deep hoots

Preys on: mostly mammals, some birds (including other owls) and a few reptiles and amphibians.

Fun Facts: The Great Horned Owl is the only animal that often eats skunks. When a group of crows finds a Great Horned Owl, they will fly around annoying it until it leaves their territory.

Information from Cornell Lab of Ornithology, www.birds.cornell.edu

Night Walk Resources

Bats of Tremont



Big Brown Bat

Wingspan: 13 – 16 inches

Weight: 0.5 – 0.7 ounces

Daytime Roost: Barns, bridges, attics, etc.

Winter Hibernation: In underground caves and mines, but only in the coldest weather

Fun Fact: Big Brown Bats in the eastern U.S. usually have twins.



Little Brown Bat

Wingspan: 9 – 11 inches

Weight: 0.3 – 0.5 ounces

Daytime Roost: Human-made structures

Winter Hibernation: In caves

Fun Fact: Little Brown Bats often fly over water to catch insects.



Eastern Red Bat

Wingspan: 11 – 13 inches

Weight: 0.3 – 0.5 ounces

Daytime Roost: In tree branches

Winter Hibernation: In hollow trees

Fun Fact: Eastern Red Bats usually hang by one foot from a tree branch during the day, disguising themselves as dead leaves.



Eastern Pipistrelle Bat

Wingspan: 8 – 10 inches

Weight: 0.2 – 0.3 ounces

Daytime Roost: In hollow trees and under bark, sometimes near the mouth of a cave

Winter Hibernation: Deep in caves and rock crevices

Fun Fact: This is one of the smallest bats in the eastern U.S.

Night Walk Resources

Night Animal Charades Cards

An owl flies down to catch a mouse, eats it, and then coughs up an owl pellet.

A skunk digs up some grubs out of a field, is startled by a fox, and sprays at it.

A moth uses its feathery antennae to find a white flower and nectars on it.

A firefly flashes its light to communicate to another firefly and is caught by a child and put in a jar.

A bat swoops around trying to catch a moth, catches it and eats it, and then flies back to its home to sleep (upside down, of course).

Night Walk Resources

The Ghost in the Bedroom

Not so very long ago, in this valley and all over these mountains, people lived a little differently from the way we do now. They worked hard all day, just like most of us do, but in the evenings when supper was over and chores were done, they didn't all sit in their own houses watching TV, because they didn't have TV. In fact, on hot summer nights, they didn't even stay inside the house, because they didn't have air conditioning. Instead, they would all gather on someone's front porch to sit around and tell stories. Sometimes these stories might be funny, sometimes they'd have important morals or family history, and sometimes, just for fun, they'd be scary stories.

Now, it just so happens that in a valley not too far from here, there lived a little boy (or girl) by the name of (Pick a name from the group—I'll just go with "April."), and April's father was the very best teller of scary stories for miles around. If people wanted to hear funny stories they'd go to one house, if they needed history or lessons they'd go to another, but if they were in the mood to have the pants scared off them, they would go to April's house and ask her daddy to tell them some spook tales. And one night towards the end of the summer, that's just what the community in the valley decided to do. April's daddy told them he'd be glad to tell them some stories, once it got dark out and he put his little daughter to bed. Well, this was the night before April's sixth birthday, and she thought that now she was getting to be so old, she should be allowed to stay up and listen to Daddy's scary stories, and she went to her parents and told them so.

"You can stay up," said her mother, "as long as it's not too scary for you. But the first little whimper I hear out of you, you're going straight to bed."

"No, I'm a big girl," said April. "I'm not a baby. Those old stories won't scare me."

So the sun went down, the lightning bugs came out, owls were hooting in the woods, and all the neighbors started wandering over to April's front porch. Soon her daddy was telling stories like she'd never heard before, stories about skeletons and ghosts and ugly old hags. He told the story of the Holland Handkerchief, the story of the Monkey's Paw, the story of the Headless Thing at the Crossroads, and he was just getting warmed up. It wasn't long before April was over in the corner crying into her mommy's apron, and her mommy was taking her inside to bed.

April said, in later years, that she was very glad her room was at the back of the house. She could have the back door open, a nice cool breeze blowing through on a hot night, but she was far enough away from the front porch that she could not hear her daddy's stories. She lay there in bed for a while, thinking about how she was turning six years old the next day, and all the things she was going to do, like going to school, learning to help her mommy make biscuits, and maybe even going into the mountains all by herself to gather blueberries and chestnuts.

Thinking about being in the woods alone made April think of all those stories again, and of all those scary haints that might be out amongst the mountains. And was it her imagination, or did she hear one of them now? There was a sound, very faint, but she thought she heard footsteps and a moan: "mmmmmm."

"Now, you calm down," April told herself. "You are a big girl and you know ghosts are not real."

She rolled over and tried to fall asleep, but this time she knew she heard it, and it was

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closer this time: “mmmMMMmmmm.”

Sometimes, when they’re scared, big girls act like little girls. And most little kids think that if they can’t see someone, then that someone can’t see them either, and doesn’t even know they’re there. So April put her head under the pillow and pulled her sheets way up over the pillow, but she could still hear those slow, heavy footsteps and that awful sound. “mmmMMMMMMMMmmmmmm,” it went again, and even louder than before.

April lay as still and as silently as she could, hoping that whatever it was would go away, but it kept on getting closer. “MMMMMMMMMMMMMMMMMMMMMM!!”

“It doesn’t know I’m here, and I’m a big girl. I’m brave,” April thought to herself, but at that moment that thing moaned like it was right in her ear and started tugging on her sheets. “MM!!”

That was all April could take.

“Mommy, Daddy!” she screamed. “Come quick! One of them things from Daddy’s stories is here in my room!” She was shrieking and crying so much that her mother and father and all the neighbors came running all the way through the house to her room and got there just in time. They got there just in time to see ... to see... to see that one of their cows had come in the back door and was trying to eat the sheets off April’s bed! “Mooooooo.”

Night Walk Resources

How the Stars Came To Be

Long ago before there were people on the earth, there were animals. The Great Spirit looked down on what had been created and saw that it was good. But gradually his smile faded and the pleasure drained from his being as the animals started fighting among themselves over food and territory.

The Great Spirit warned them, "If you do not stop this arguing, I will cover the Earth with a great blanket and shut it off to all light." This frightened the animals since there was always light on the Earth. They behaved for a time, but eventually the fighting began once again. This time the Great Spirit tossed a giant blanket over the Earth and blocked out all light.

The animals gathered into a large circle. They all shouted out their anger and their fear. As they calmed down, a majestic bear entered the center of the group. In those days, the bear was not only powerful, but also had a long, beautiful nose like a red fox and long tail. "I am the strongest one here. I will climb the mountain and tear up the blanket with my mighty claws." He did begin his climb. He climbed and climbed. Upon reaching the top, he jumped and took a swipe at the blanket. Missing it, he fell landing first on his nose pushing it into his face and making it flatter. Then he hit on his rear end shoving his tail in. OUCH! This is why, to this day, the bear has a short face and a stub of a tail.

Still—despite the bear's efforts, there was still no light! The animals started to cry. "Wait!" said a squeaky voice. "I can reach the blanket." A beautiful buzzard walked into the center of the circle. In those days, the buzzard had a lovely purple plumed head.

"I will tear the blanket," she said. The wind caught her wings and lifted her to the blanket. How wonderfully she could soar! When she reached the blanket, she tore a hole in it with her hooked beak. She was so proud that she shoved her head through the hole to utter a war cry. When she did, the sun burned every feather off her head. That is why to this day, buzzards have ugly, red, scaly heads... but now they had some light. Some thought this was enough. Others disagreed. The hole was called moon.

All of a sudden, a tiny voice called out from a dust pile. "I can do it." There on the ground sat a puny gray bird.

"YOU!?" they all laughed. "You want to open the blanket?"

"Yes, I will fly there now." The bird took off before anyone had time to object.

Up, up, up flew the little bird. She poked a hole there and here and over there... on and on she poked, until there were holes all in the blanket.

Smallest rays of light peered through the blanket. The little bird fell to the ground exhausted. The animals wept for joy. And then the Great Spirit spoke. "Little one, it took your courage to save yourself and the others. Therefore, I will give you a coat of emerald green, a ruby throat and a long narrow beak to sip the sweetest of nectars. I will remove the blanket in your honor, but will place it for half of the day to remind you all that you must live in peace!"

—Cherokee Legend as told by an old mountain man in Eastern Ohio to Rick Espelage.

Night Walk Resources

Nighttime Imagination

There once was a little boy who lived deep in the Appalachian Mountains with his grandmother and grandfather. His grandparents lived in a small cabin on the edge of the forest. Here they survived by growing crops and hunting wild game.

One evening after supper, Grandfather asked the little boy to go outside and gather some firewood. The little boy ran down the cabin steps admiring the burning orange sky. He walked into the forest and down to the small stream where the family gathered their water for drinking, cooking and washing. The little boy became distracted by a little frog hopping along the edge of the stream and chased it until he realized that he was out of view of the cabin. The forest had grown dark and he hadn't collected a single piece of firewood. He quickly began walking back through the forest toward the little cabin, bending down to pick up sticks and branches along the way. It was quiet. All he could hear was the faint gurgling of the stream behind him and a few crickets chirping under the fallen leaves.

The little boy bent down to pick up an especially large stick when he heard something snap above him. He froze and slowly tilted his head towards the trees above. There, not ten feet away in the tree above him, was a mountain lion. It stared at him with glowing eyes. The little boy was sure he could make out the animal in a position ready to pounce. He didn't know what to do, but knew that if he stuck around, he would be dinner for this hungry beast. He sprang up the trail, dropping all the wood he had collected. All of a sudden, he felt the tiny legs of thousands of spiders as they fell into his hair and down his shirt. He had run into a spider nest! He felt sure that the mountain lion was hot on his heels so he continued to run as he frantically brushed away the spiders from his face and arms. He stumbled as he ran, and each time he regained his balance, he could almost make out the shape of the cabin in the distance. He might make it!

The little boy decided to risk a look behind him to see how long he might have before the lion was upon him. Behind him, the forest was dark with shadows and the lion was nowhere to be seen. Could it be stalking him from the tree branches over his head? This thought set his heart pounding like a ceremony drum. He turned back to face the cabin but instead of seeing the welcoming flicker of a candle in the window, he felt the thick matted fur of a giant black bear. He had run into it face-first and was caught between one hairy front leg and the sharp claws of the other front paw. A scream roared from the little boy as he slid from the bear's embrace and continued his scramble up the hill to the cabin. He reached the back porch white as a sheet and breathless. His grandfather appeared at the door with his shotgun, for he had heard the little boy's terrified scream. The little boy continued to shake off the remaining spiders from his shirt while the description of his panicked experience spilled from his lips.

Without a word, Grandfather handed the little boy a lantern and they began to stalk their way toward the stream. When they reached the spot where the mountain lion had perched in the tree, the little boy spotted the glowing eyes immediately. It was still in the same spot. Grandfather reached for the lantern and lifted it high so it cast its light into the tall branches. A yellow glow revealed a squirrel's nest in disrepair. Two holes appeared at the bottom of the nest and the moonlight shown through creating the glowing eyes of a nonexistent mountain lion. Grandfather bent down to pick up the bundle of sticks the little boy had dropped and began to walk back toward the cabin.

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Bent over like he had a stomachache, the little boy began following his grandfather.

“What are you doing?” asked grandfather.

“There is a giant spider nest here somewhere,” said the little boy. “Keep your head down or you will be covered from head to toe!”

Grandfather lifted the lantern high to search out a mass of tiny, wiggling legs, but all the light revealed was the gentle sweeping branches of Hemlock trees. Some of their tiny needles would drift to the ground as Grandfather swept his hand across the soft branches. Grandfather turned to the little boy, holding the lantern out towards his shoulders. There, upon his shirt, were a few tiny needles that had not yet been swept away by the little boy’s frantic hands. The little boy could feel his face becoming warm and was glad his grandfather couldn’t see his sheepish expression.

Just as he began to feel a little more relaxed, he remembered the bear that might only be steps away! He tensed, and grabbed his grandfather’s arm. He whispered to his grandfather, who responded by lifting his rifle. In the other hand, the lantern cast a yellow spotlight and they crept silently through the forest. Up ahead in the shadows, the little boy caught sight of the hairy belly of the bear. Grandfather continued to walk toward the beast with the little boy behind him pulling at his shirt and pleading with him not to continue. Grandfather stopped, and mustering up all of his strength, the little boy embraced his grandfather’s waist and peered under his arm at the bear. There, in front of them, stood an enormous, hairy, moss-covered oak tree. Broad as a bear and wet with early evening dew, it stood looming over them. Grandfather felt a smile creep across his face and he lovingly looked down at the little boy with his eyebrows raised. The little boy didn’t know what to say. He lifted the bundle of wood from his grandfather’s arms and began walking back to the cabin with his head down. The little boy walked quickly, but not so fast that he escaped the ring of light cast by the lantern in his grandfather’s hands.

That night, the little boy crept under the cool covers of his bed and he thought about how clearly he saw all of the terrifying creatures in his mind that night. His imagination had made the forest he knew so well during the day, a frightening and deadly place at night. He misunderstood the forest because he was not adapted to see at night and the unknown frightened him.

—by Jennifer Love as told to her by Tremont staff

This story has been told for several years at Tremont as the “Little Tree” story. We could not find this story represented in the “Education of Little Tree” so have recreated the story here for use during our Night walks.