



Photographs: Jennifer Haynes Photography

# Nighttime Adventures

*Exploring and appreciating the mysteries of the night by leading walks after dark*

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By **Brad Daniel** and **Clifford Knapp**

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*“In darkness I remember that it is not knowledge to which we most deeply belong but mystery, and I sense in the mystery of night a beauty that exceeds even the great and notable beauties of the daylight world.”<sup>1</sup>*

—John Daniel

**P**OETS AND NATURALISTS have raved and written about the values of darkness and the night for centuries (see sidebar for selected quotations). The beauty and magic of nighttime walking emerges in ways seldom apparent during the day. The air smells different, nighttime sounds are strange and more varied, and the trails that may be familiar in daylight appear new and mysterious in the dark. The organized night walk is a way to minimize possible dangers and increase the pleasures for participants attending camps, environmental and nature centers, or those just taking a recreational walk in the woods and fields. This article explains some of the hows and whys of planning and leading a night hike. It describes the purposes of night hikes, some potential barriers, leadership guidelines, safety tips, and suggested activities.

We have been leading night walks for many years now and we know the impact they can have on adults and children. We

know that when a night experience is conducted with care and concern for positive outcomes, the participants go away with pleasant and powerful memories and want to go again. We want participants to learn to love the night and to feel comfortable in nature after the sun goes down. We want them to discover a sense of awe and mystery for the plants and nocturnal animals. We know that these goals don’t just happen—they must be facilitated with skill and knowledge of the land in a particular place. We hope that these ideas will help launch a series of night adventures for you and your students, and enable you to successfully lead others through the darkness.

## Purpose

The purpose of leading an organized night hike is to guide an experience that increases participants’ appreciation for the outdoors while they learn about the nocturnal world. For example, they can discover bioluminescent organisms (perhaps foxfire fungus or firefly glow worms), animal behaviors and adaptations, how to identify star constellations, and many more wonders of the night. Although almost everyone has walked around at nighttime, relatively few have participated in a guided experience that promotes sensory awareness and mindfulness through a sequence of planned activities. Night hikes are exciting experiences for people of all ages because the outdoor darkness in natural settings is new to most.

## Potential Barriers

People often fear the unknown. For many, being outdoors at night holds negative associations. Darkness can be threatening because we are very dependent on our sense of sight; we fear what we cannot see. Also, people have been taught to fear the night by negative associations with violent acts and other threatening creatures and situations. The media have promoted these fears in our culture through horror films and tales of nocturnal evil. Ask your group what they are nervous about and you are likely to hear about Jason from the movie *Friday the 13th*. Organized night hikes seek to reduce fears by providing positive experiences leading to greater appreciation of the outdoors.

## Guidelines

We offer the following guidelines for planning and leading a night hike.

Leaders should:

1. Know the characteristics and background of the group including something about each individual's experience in the outdoors at night. Children from rural areas might respond differently than a group of kids raised in urban areas.
2. Provide an opportunity before the hike for participants to share feelings about night fears and how they were learned and perhaps overcome
3. Set the tone for the experience by helping participants understand the purpose of the hike. Participants need to feel secure in themselves, the leadership, and the natural setting in order to learn.
4. Acclimatize the group to the night by beginning with playful discovery activities.
5. Make ground rules to ensure that no one will scare others by promoting negative experiences. Reassure the group that there will be no practical jokes or horseplay during the hike! There is no place for such behavior on a night hike because it can scare people and cause accidents.
6. Explain how each activity during the hike contributes to the overall goal of learning to love the night.
7. Explain the benefits of walking quietly and slowly (i.e. to hear night sounds, see animals, and to have a relaxing time).
8. Explain how to walk safely in the dark by lifting one's feet higher than usual to avoid tripping hazards, and how people can help each other by alerting one another to tripping or eye level hazards.
9. Take time after the hike to discuss the meaning of the hike in order to help participants process the experience. A good night hike always includes time to reflect on what was learned. Sadly, it is a component that is often minimized or eliminated due to time constraints. It is better to do fewer activities and leave time to reflect on them in order to best develop a meaningful experience.
10. Inform participants that, prior to the hike, they are not to

use their flashlights in order to allow their pupils to dilate for optimal night vision (this may take about 20 minutes). There may be a few activities that require lights, however.

## Safety Tips

A variety of factors should be taken into account when planning the hike including weather forecasts, the phase of the moon and the age of the group. These factors may play a role in determining what to wear. For example, the leader might choose to wear lighter-colored clothing while leading a hike during a new moon (the phase where the moon is invisible) to increase visibility and security. If thunderstorms are predicted it is best to stay away from potential lightning strikes.

Night hike leaders need to have clearly defined safety and emergency procedures that are communicated to the group before the hike begins.

Leaders should only use trails that can accommodate the size and type of group. Avoid trails that have drop-offs, stream crossings or other potential hazards. Be sure to scout the trail beforehand and to know it well.

A minimum of two leaders is recommended for any group. A leader in the front of the group and a "sweeper" in the back ensure the most safety. Leaders at the front and back often create security and a sense of well-being within the group. A third leader is sometimes required to monitor safety in the middle of the group if the participants are inexperienced and frightened. The safety monitor should move up and down the group line watching that the group stays intact and remains on the trail. The age and experience of the participants as well as the length and terrain of the hike should be taken into account. Generally, a group of 15 or more requires three leaders. When the group stops on the trail for an activity, the leader in back should have a way to let the front leader know that the group is together before the activity begins.

It is imperative that each participant feels connected to the group. A rope line is sometimes used for younger children. The rope extends from the front leader to the back leader. The children are spaced comfortably along the rope and are instructed to hold it with one hand during the hike. For teens and adults, the group line could be established by lining up and placing a hand on the shoulder of the person in front. This method permits easy walking if the participants are lined up according to their height. A participant is told to stop walking if they become disconnected from the rope or the group. The back leader can then promptly alert the head leader to stop the hike until everyone is in line and connected to the group.

It is important that there is no conversation during the hike. This reduces any chance of confusion or distraction, which are especially hazardous at night. Also, this procedure allows the focus to be on the sounds of the night. How do you make "no talk during the walk" work? One way is to use blindfolds. When the blindfolds go on, the mouths go closed. A second way is to stop walking when anyone is talking. Yet another way is to use non-verbal signals to inform the group members of any obstacle in the trail such as a root or rock. For example, thumping the ground a couple of times with the foot mimics the behavior many animals use to alert others to danger. Because the thumping is not meant to be loud, participants must listen carefully, encour-



*The right way to walk at night."*

aging an enhanced auditory experience. These methods can be effective and allow for a safe and educational experience.

## A Sample Plan

There are many ways to facilitate a night hike. Below, we offer a sample plan. It is important to sequence the activities so they build toward a culminating activity. The activities can be thought of in four stages: pre-hike, stationary, transition, and closing activities.

### Pre-hike activities:

The leader can prepare participants for the hike by doing some activities in the days or weeks before the actual trip. For example, students could practice identifying owls and other nocturnal animals by their sounds. Several excellent guides to wildlife sounds have been produced and are readily available (see the resource list at the end of this article).

Another example of a pre-hike activity would involve playing a simulation game such as Bat and Moth. In this game, one student is blindfolded (the bat) and one student is not (the moth). The group forms a circle around them to create a safety perimeter. The game simulates the echo location technique bats use to find their prey by sending high frequency sounds toward the prey. Every time the bat says "bat," the moth replies "moth" and the bat tries to locate and tag the moth by sound. An activity like this can be played at dusk to allow the eyes to adjust and the group to become more comfortable with being outside at dark.

## Stationary and Transition Activities during the Hike:

Stationary activities are done at places along the trail where the group stops and gathers. Transition activities are ones where the group is given an assignment while walking. Upon reaching the next station, the leader asks the participants to describe what they discovered. For example, the leader might ask the group to be aware of temperature differences when under leafy shrubs compared to under more open canopy. Upon reaching the next station, the participants would describe what they noticed and discuss how animals might use that to their advantage.

After preparing the group, the hike begins. The leader should describe how to walk in the outdoors at night (by lifting one's feet higher than usual). Many of the following activities can be either stationary or transitional depending on how they are framed.

## Station One: Sound

1. **Deer Ears.** Listen to sounds by cupping the hands behind the outer ears while standing still and rotating the upper body. The quality of sound is improved greatly by directing these "receivers" toward the source. The group can discuss how animals might use this to their advantage.
2. **Sound Inventory.** Stand perfectly still for 1-2 minutes and point in the direction of the different sounds heard. Share these with the group afterwards.

**Transition: Mental Mapping:** Ask the participants to construct a "mental map" of what the terrain is like along the length of the hike. Ask participants at each stop along the way what the terrain was like since the last station. For example, did the trail go up or down? Did it turn to the left or right? If you can spot the Big Dipper (or the Little Dipper), you can try to locate the North Star (Polaris)<sup>2</sup>. This allows participants to determine the cardinal directions (N, S, E, W) which they could incorporate into their mental trail maps (i.e. the trail turns east, etc.). Mapping the terrain can help build towards a culminating activity such as a solo hike if the group returns on the same trail.

## Station Two: Smell

**Smelly Things.** Smell the night air, soil, crushed plant parts or pass a scented marker around. Ask the group to identify the scents in the dark. Typically, you will hear a variety of answers. Sometimes, people think they are identifying things by smell alone when it is actually the combination of sight and smell being used. Removing the sight component often makes it more difficult to identify a smell.

**Transition: Touch and Go.** Along a safe section of the trail, ask the group to focus on feeling the trail with their feet. Then, ask them to step off the trail to one side (watch out for poison ivy or other hazards) and then back on the trail. Have them do this several times and then report any differences. Trails tend to be more compact and quieter whereas "off trail" is often softer and louder due to twigs, leaves, and other debris.

## Station Three: Sight

1. **Night Light.** Look to the left or right of a distant star or planet to use the rod cells in your retinas to see faint light and contrast better. Try this by looking at objects on the trail. The rod cells in your eye help you see contrast. The next activity illustrates this.
2. **Headless Horseman.** Pair up the group members across from one another and have them stare at their partner's head without moving their eyes. Have them describe what happens when they do this. (Their partner's head should seem to 'disappear'. This only works in very low light.)  
**Explanation:** The retina of the eye contains rods cells, which detect light contrast and cone cells, which detect color. Due to the placement of the rod cells, they are activated more by viewing peripherally rather than using direct focal vision. Therefore, looking to the left or right of a head or star enables the shape to be distinguished more clearly. Staring directly at the head does not activate the rod cells in the same manner, causing the head to seem to disappear.

**3. Color in the Night.** Distribute small pieces of differently colored paper or colored toothpicks to the group members. Ask them to guess what color(s) they have. Ask them to identify different colors of clothing. They can check their accuracy when they return to a lighted area. Cone cells allow the eye to detect color providing there is enough reflected light to see the object. When light is diminished, it is much harder to discern color.

**4. After Image.** Discuss original and reflected light sources (reflectors, matches, stars, planets, moons, electric lights, etc.). Then predict how much light will be cast from a single match, and light it from a distance away. Move the lighted match in a circular or linear pattern. Ask the people to quickly close their eyes to try to see an after image of the pattern. Next try this with a flashlight to compare what happens. The image created after the brain translated the light received via the optic nerve remains briefly after the source disappears.

**Transition: Thermometer.** Check the temperature of the air, trees.

### Station Four: Night Vision and Solo Time

- 1. Night Sight Story.** Tell a story about exploring the outdoors at night while participants close/cover one eye. Have the participants stare at a lit candle or bright lantern with the open eye during the story. Extinguish the light and have participants look around with each eye to see if they notice a difference between the one that was covered/uncovered. The difference is dramatic because the light causes the uncovered pupil to contract while the covered pupil remains dilated.
- 2. Night Eyes.** After the story, ask the group to describe how night vision develops (pupil dilates to allow more light in). The story can serve a dual purpose. In addition to creating a dramatic difference in night vision, it can help create a metaphor for use in the solo hike described below. Explain this metaphor by giving an example.
- 3. Solo Hike/Sit.** Place people along the trail so they can experience the night alone. Tell them not to move and communicate with other people. Pick them up again after a short time. Another option (not for young children) is to have them do a solo hike alone back to where the hike started. You can send them out at longer or shorter intervals depending on the amount of ambient light, and other factors. Always allow those that do not want to do a solo hike to bring up the rear quietly. Remind the solo hikers to use what they have learned on the night hike up to that point.



*To simulate echo location, a group plays "Bat and Moth".*

### Station Five: Taste

- 1. Sparky Party.** After returning from the solo hike, have a "sparky party" to celebrate. In pairs facing one another, instruct the group to chew wintergreen (WintOgreen) Lifesavers with an open mouth (trying not to wet the lifesaver with saliva because it flashes better when dry) while observing the mouth of their partner. Ask them what they think creates a blue-green glow when broken by the teeth or a pair of pliers (to save fragile teeth). This phenomenon, called triboluminescence, occurs when light is released in the visible spectrum after the chemical bonds of the granulated sugar molecules in the presence of wintergreen oil (methyl salicylate) nitrogen in the air are broken. Try scraping rock candy with a knife in the dark to see a glow. (Unless the candy is damp, it usually works.)

### Closing Reflection Activities

Take time to reflect on the night hike experience.

1. Make a list of open-ended questions for the participants to complete verbally. This will help them reflect upon their night walk experience. Once the group is back together, have them form a circle and share a few of these. Some examples: What is one thing that you appreciated most about the walk? What new facts did you learn about the night? Did you have any surprises along the way?
2. Ask the participants to finish the following sentence stems:
  - a. The best thing along the way was . . .
  - b. Now I realize that darkness is . . .
  - c. One thing I'm still wondering is . . .

3. Have the participants say one word that best describes how they feel about the night after the walk.
4. Ask the participants to make up a round robin story about the night by saying a few sentences and then having the others, in turn, continue the story thread from where the last person ends. (Make a rule that the story cannot be a scary one because the purpose of the walk was to learn to love the night, not be afraid of it.)
5. As a final closing, you may choose to read one or two of the quotations included in this article. You can also find short poems about the night to read to the participants.

## Conclusion

If the leaders follow some of these suggestions and participants were cooperative and open to trying something new, chances are that the night walk will be a positive experience. Keep in mind that one evening outside cannot completely change a lifetime of fears and negative associations with the dark. We often feel safer in the forest at night than we do in the city. It takes a gradual progression of non-threatening associations with the beauties and wonders of the night in order to learn to love it. We suggest that the initial experiences with the night be kept short and pleasant. Each successive night can be longer and introduce new activities. Additional activities, useful equipment and resources, and selected quotations about the night can be found at the end of this article. We wish you peaceful ramblings as you and those you lead become closer friends with the night.

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### Notes

1. Daniel, J., "In praise of darkness", in P. Bogard, ed., *Let There Be Night: Testimony on Behalf of the Dark*, University of Nevada Press, 2008, p. 30.
2. A useful guide to explaining how to do this can be found at: <http://www.physics.ucla.edu/~huffman/finddip.html>.

### Useful Resources

- Altieri, T. "The Magic of Night Hikes", *Green Teacher* 58, Summer 1999, pp. 30-32.
- Baker, R., Chartrand, M., Gordon, J., and Zim, H., *Stars (Golden Guide)*, St. Martin's Press, 2001.
- Bogard, P. ed., *Let There be Night: Testimony on Behalf of the Dark*, University of Nevada Press, 2008.
- Brown, V. *Reading the Outdoors at Night*, Stackpole, 1982.
- Chartrand, M. and Wimmer, H., *Night Sky: A Guide to Field Identification*, St. Martin's Press, 2001.
- Lang, E., *A Guide to Night Sounds: The Nighttime Sounds of 60 Mammals, Birds, Amphibians, and Insects*, Stackpole, 2004.
- Lawlor, E.P., *Discover Nature at Sundown*, Stackpole, 1995.
- Rey, H.A., *The Stars*, HMH Books, 2008,

### Useful Equipment

Colored cards or paper, Candle, lighter or matches, Starfinders, Pieces of Quartz (Rock), Birdsong Identifier or Small Tape Recorder, Blindfold, Rope Flashlight with red lens or red covering of cellophane or red balloon (red light is less disruptive of animals), Scented markers or film canisters filled with essential oils like mint orange, etc., Wintergreen Lifesavers

## Additional Activities, Equipment, and Resources

**There are many other popular activities to do on a night hike. These include:**

1. **Nocturnal Menagerie.** Locate animals such as frogs, toads, earthworms, spiders, bats, and owls. Discuss the definition of a nocturnal animal. Try to estimate the size of an animal based on its sound. As the sense of hearing becomes more acute, participants will often overestimate the size of animals making noises. Have the group listen to recorded night sounds before going outside.
2. **Rock On.** Strike or scratch quartz rocks together sharply. They will give off a flash of light and a faint smell. This happens because striking them causes the alignment of the crystalline molecules of the quartz to be interrupted, and an electric discharge results when they realign (an example of 'piezoelectricity'). The faint smell of sulfur is caused by a chemical reaction in the sulfur compounds in the rocks.
3. **Latitude.** In the Northern hemisphere, find the North Star (Polaris) and put a stick in the ground pointing directly to it. This stick forms an angle with the flat ground which is equal to the latitude of the location. It can be used on a sunny day as a sundial gnomon.
4. **Night Owl.** Play a recording of a common owl call or imitate it with your voice. An owl may respond to the call if the group is quiet. Do not over do this during nesting season because it will disrupt the mating habits of the owls.
5. **Bioluminescence.** Search for bioluminescence in fireflies, glow-worms (firefly larvae), decaying wood (containing foxfire fungi), and other natural objects. Find out what causes each form of light. To find foxfire more easily at night, walk the path in late afternoon and kick some of the decaying wood to expose the bioluminescent fungi in the wood.
6. **Spider Eyes.** Using a flashlight, search for the reflection of spiders' eyes by holding the base of the light on your forehead and projecting the beam into the vegetation where spiders hide.
7. **Legend of the Stars.** On a starry night, invent new symbols, shapes, and stories in the sky to correspond to the different star patterns. Then learn the traditional star patterns identified by different cultures, including your own.
8. **Insect ID.** Hang a white sheet outside and shine flashlights on it to attract night-flying insects. Try to identify them.
9. **What's up DOC?** Determine if the moon is waxing or waning, by looking at the side with the more pronounced curve. Think about the word DOC. D=Waxing (becoming more illuminated each night, represented by "D" because when waxing the left side of the moon is dark), O=Full (fully illuminated), C=Waning (becoming less illuminated each night, represented by "C" because when waning the right side of the moon is dark). Note: in the Southern Hemisphere, this mnemonic is reversed—"COD".