

M: Blindness and Low Vision

MODULE M: UNDERSTANDING BLINDNESS AND LOW VISION[1]

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TYPES OF VISION DIFFERENCES

In this module, we discuss three groups; those that are blind, low vision, or colorblind. Low vision is the accepted term for what was called previously called vision impairment. Adaptations for colorblindness are straightforward and are addressed in this opening section. Most of this module discusses how to accommodate blindness because the same adaptations and ideas can be applied, as needed, for someone with low vision. **Unless otherwise stated in this module, the words “blind” and “blindness” are intended to include all kinds of vision differences.** This aligns with the reality that service organizations for the blind also support those with low vision.

In this community, there are some people and organizations that prefer to use the term “blind” or “blind person” and others that prefer “person with blindness”. The

same distinctions apply to those with low vision. Some are comfortable being called blind and others prefer being called low vision or visually impaired. “Impaired” is a term that has mostly fallen out of use in this community. When you are speaking to or about an individual, we encourage you to ask how that person prefers to be described and then honor that preference. When interacting with a support organization, we encourage you to adopt the mode of address that they use amongst themselves. In this module, you will find both forms of address used.

LOW VISION is a broad category to describe many different ways of seeing, short of total blindness. For some, it is far vision that is blurred. Others cannot see close objects sharply, even with corrective glasses. Others may have poor depth perception. Others may have narrow fields of view, and others are unable to see in the center of their visual field. How their vision difficulty affects their life can be very different from one person to the next.

The primary difference between a low vision and total blindness is the ability to directly interact with written text and graphics. People with low vision may have a limited ability to read or write printed materials and might need to be aided with magnification, large print, contrast enhancement, or assistive technology. They may or may not use a white cane to walk around their environment. With this said, a Scout with low vision will likely need some, but not all, of the accommodations that a blind person might use. To support such a Scout, you will need to take time to understand that Scout’s type of low vision and then review the rest of this module for the tools that you will need to help him or her. However, **your goal is not to treat such Scouts as if they are different or totally blind, but rather to encourage them to use all of their abilities and their adaptive techniques to accomplish the same goals as any other Scout.**

COLORBLINDNESS is an often overlooked struggle. Most people who are colorblind don’t tell others about it, so it is easy to ignore. The practical concern in Scouting is to pay attention to situations where instruction materials have been color-coded to help those with regular color vision and then make sure colorblind people can distinguish them as well. For example, at a major Scouting event, colors were used to distinguish between the different bus routes. The buses were marked with colored signs with no writing. This could have been adapted for colorblindness by using a shape (square, circle, triangle, star, etc.) as well as a color for the signs or by using a sign where the color is spelled out and the same color is used for the text color (the word “PURPLE” written in purple paint).

THE BIG PICTURE

Blindness impacts four major aspects of the Scouting program: interfacing with text and graphics for learning (both reading and writing), moving around safely in an outdoor environment, completing manual tasks that require spatial awareness, and making observations. **There are no Scout tasks that someone who is blind categorically cannot do.** Let the Scout decide if he or she needs accommodations or assistance to do the task. Don’t assume they will always need help. So in practical terms, a Scout leader and a blind Scout will have to work together and experiment to identify where the true limits for that Scout lie. This can be described as “collaborative trailblazing”. As is discussed more fully in

Module F, good communication with the Scout and family allows solutions from other parts of life to be carried over into Scouting as well.

The biggest obstacles for Scouting with blindness are two sides of the same coin. On one side is the well-meaning concern of adult leaders, guardians, or parents who try to shield these Scouts from danger by barring them from trying something. On the other side of the coin is the fear of the Scout, who lets inexperience and unfamiliarity stop him or her from trying something new. Encourage these Scouts to do everything they can possibly do for themselves, with the understanding that they may need a sighted person to give them information about the world that is beyond their physical reach.

A blind Scout should be able to participate in a mainstream traditional Scout unit, and most of the information in this module presumes this is the case. There are some Scout units made up of all blind/low vision Scouts. Like most special-purpose units, these units may have a higher ratio of support volunteers to participants, approaching one support volunteer for every participant. A vision-oriented special purpose unit can benefit from going camping with a buddy traditional unit to get a more mainstream experience. Special purpose units with sufficient funding may want to recruit and scholarship sighted Scouts to go to summer camp with them to help out

WHOLE UNIT ACCOMMODATION

Whole unit accommodation is promoting an attitude among all the Scouts where they all take a role in being helpful. A blind Scout relies on others for some information about what is around. Each time the Scout moves to a new location it takes time to build a mental map of where things are, and he or she will need some assistance this figuring out. The paradox is that in order to feel capable and confident you must first be informed by others. The Scout's companions serve as the eyes for the Scout, describing what is around in detail so the blind Scout can get oriented. This allows the blind Scout to participate and be proactive.

The buddy system applies here like everywhere else in Scouting. A Scout who cannot see should not be left alone with no one to assist if desired. In rougher terrain, the Scout may want assistance from another Scout as a "sighted guide"^[2] to move around. It is up to the Scout to decide whether to rely on a white cane or to ask for help from a sighted guide. Don't assume Scouts will need a sighted guide simply because they are blind.

Even when you are not moving around, the sighted people in the conversation circle need to be intentional about verbally describing the things they are seeing. This includes not just objects but other activities going on around the area that might be fun. It also extends to dining hall lines and buffets where companions need to describe what foods are available and to restaurants where the menu needs to be read aloud to assist the blind Scout. The Scout can order for himself when food orders are being taken.

It is good for everyone in the unit to be ready to offer help to the blind Scout. Ask

“Would you like me to help?” and let the Scout have the power to decide whether the help is wanted or not. Helpful companions will need to learn not have their feelings hurt if help is refused. As everyone gets to know one another and relationships grow between the youth, the process of offering, asking, receiving, and refusing help gets easier and more intuitive.

TEACHING SKILLS

Teaching new skills is different because the Scout cannot learn simply by watching others. Some things will need to be taught with hand-over-hand technique. Others will need to be taught using a three dimensional model of some sort. For example, you can create models of knots using thick rope that can be felt and used as a reference for the correct shape of the knot. Other skills will need to be taught by talking the Scout through the motions in fine detail.

No matter what method is used to teach, the person doing the teaching will need to plan farther ahead and arrange for more aids than would be needed for other Scouts. The basic questions will always be similar:

- How can we make it possible for the Scout to have this experience or learn this skill?
- How do we let the Scout be in control of the process as much as possible?
- How can we do this safely?
- Is this realistic?
- What can we do if this method or strategy doesn't work for this Scout?

BUILDING EMPATHY WITH ACTIVITIES

The best way to help the sighted members of the Scout unit understand what life is like for the blind is to talk with blind people in the community and watch while they do ordinary tasks. Local blindness support agencies can help you with this. The Scouts will probably be amazed at what those with blindness can do, not what they can't do.

A leader may think that any blindfolded game or activity would promote empathy and understanding, but it takes a careful and nuanced approach to succeed at this. Asking a sighted person to perform a task while blindfolded does not give the same experience as not being able to see. A blind person has had plenty of time to become comfortable working without vision and to find ways to adapt. A blindfolded exercise will make being blind seem more difficult than it actually is. Another risk is that the exercise will unintentionally make light of the disability or make it seem worse than it is. This can encourage ableist attitudes. If you are thinking of including a blindfolded activity at an event to build empathy for a blind Scout in the unit, discuss this first with the Scout and the family to get their perspective on whether to proceed and, if so, how to present the activity so that it is not offensive. At a minimum, plan on an age-appropriate interpretation talk before the exercise to **focus the Scouts' attention on what they CAN do while blindfolded**, and then plan on completing the activity with an introspective reflection discussion about how their beliefs and attitudes have changed. While we

want Scouts to be caring and relate to one another's life experience, we don't want them to "feel sorry" for others and treat them as anything less because of a disability.

LEADING AND BEING LED

Blind Scouts can serve effectively as youth leaders. Take pitching a patrol campsite as an example. The youth leader functions without sight by communicating continuously with the followers and using their descriptions of conditions to make decisions. The youth leader gives verbal guidance to the group, and checks in on the status of each of the followers verbally. With practice, the followers get in the habit of reporting back verbally with their own status and the status of the task they are working on. If needed, the leader can have one sighted person stay close by to assist him while he directs the rest of the group. There is no reason a Scout who does not see cannot lead a hike and set the pace using either a white cane or sighted guide to navigate obstacles, and using a braille compass for navigation.

EMBRACING TECHNOLOGY

Traditional adaptive technology includes writing and reading Braille, using Braille devices like compasses and clocks, and using mobility aids like white canes^[3] and guide dogs. Mechanical Braille writers, which look like a cross between a typewriter and a court reporting machine, are still in use. However, electronics and smart phone technology are rapidly changing the world for the blind. Speech recognition apps and text-to-voice readers continue to get better and they allow the blind to use computers and to communicate in written form with those that do not read or write Braille. It is not hard to imagine a future where cameras mounted in glasses frames have facial recognition software and object recognition software to audibly identify who is approaching to talk and what objects are nearby. The same electronic sensors that are being developed for self-driving cars could soon augment or replace the traditional cane and give audio cues to allow more independent movement.

Each form of adaptive technology takes time and training to learn to use. In the Scouting program, it is easiest to embrace whatever adaptive technology the Scout already knows how to use. Many smartphones have accessibility features in the operating system and it would be worthwhile for you to learn how to turn these on when needed. If your unit has a "no electronics" policy for outings, exceptions may need to be made to allow a Scout to use the adaptive technology that is built into a smartphone.

CAMPING TIPS

Scouts who don't see need to be part of the camp set-up and breakdown experience. They may want a companion to work with while the campsite is being pitched and the positions of things are in a swirl. Once the dust settles, the Scout should be given a tour of where things are so he or she can begin moving independently. It is important that everyone knows that if you move something from place to place, you need to announce what you are doing, so the Scout knows

what has changed.

As part of the initial tour of the campsite, you will want to identify hazards like holes in the ground, trip hazards, cactus, thorny plants, low hanging branches and drop-offs. Ask the Scout if he or she wants any areas marked off to make things easier. As always, the axe yard needs to be roped off. Depending on where you camp, you may need to bring some long stakes to tie rope or caution tape to, so rope fences are high enough off the ground to not be a trip hazard. If the Scout sees it as a benefit, consider running a guide rope from the open area of the campsite to the latrine. This helps the Scout take care of him or herself better and may be appreciated by everyone else to find the path to the latrine in the night.

If your unit camps at the same parks or Scout camps on a recurring basis, it will help the Scout if you can try to reserve the same campsite at the camp each time you go. This reduces the amount of effort for him or her to get oriented when you go camping.

A blind Scout keeps up with his things by keeping track of where they are in space. While blind people may try to be more organized and neat than other people, kids are still kids. Even if it looks messy, that is OK because everything is right where it was last left. The Scout's tentmate will need to understand that picking up after someone else is doing more harm than good and that you shouldn't move the Scout's things around in the tent if you can help it.

OUTDOOR SKILLS AND ADVANCEMENT TASKS

[Module E](#) discusses how disabilities can be accommodated in most cases by an open-minded reading of the requirement, keeping in mind the intent and learning objective of the requirement. In the specific situation with blindness, what we need to point out here is that **it is reasonable to allow a sighted person to serve as the interface with the visual world[4]**, while the Scout him or herself does the advancement task. For example, a Scout could identify a type of flower by asking a sighted person to describe its features without giving the name of the flower. The sighted person tells the color, the size and shape of the petals and leaves, number of petals, how tall the flower stands, and whatever details are asked for. In the reverse, a sighted person could convert the pattern of the stars in a constellation into something tactile by poking holes through a paper plate, so the Scout can feel the pattern of the constellation.

With enough effort any advancement task can be completed, but not everything will be worthwhile for every person. Using the flower identification example again, the Scout will have to be taught to identify flowers by their features in the first place, and that will be harder and take more time than it would for others to learn by using photographs. **If Scouting becomes more work than fun, advancement may need to take a back seat to other aspects of Scouting.**

Writing – In a low-tech environment, the practical solution for writing requirements is to allow a scribe to take the verbal information the Scout gives and write it on the page. However, if you look closely, many requirements that we assume require a written product don't actually say that. Report, describe, discuss,

and explain can all be done verbally. In a high-tech environment, it may be possible for the Scout to type directly or to use voice recognition software to create a document.

Draw/Sketch/Diagram – There are a variety of ways to produce a graphical product without the traditional pen and paper. Ask first if a verbal description would suffice or if it is OK for a scribe to draw on paper what the Scout tells him or her to. The next alternative is for the Scout to work with pen on paper with someone to help get the pen into starting position and to give audible feedback as the Scout draws. At the other extreme, the Scout could use modeling clay to sculpt something truly three dimensional. In between are 2-1/2 dimensional approaches that are flat but have features you can touch and feel. It is possible to draw using a ball stylus, heavy paper and a rubber mat to make creased lines in the paper that can be followed with the finger. Puffy paint or glue can be used to trace a drawing. Fingerprint can be used to draw on a larger scale. A map can be created using “playdough” or modeling clay. Drawings can also be made with school glue and sand or glitter. If the shape can be shown by a dot pattern, holes can be punched in heavy paper to form the pattern. Support agencies may have specialized equipment that the Scout can use. Be aware that **if you need a drawing to teach something to the Scout, you will have to use one of these techniques yourself to make something the Scout can understand.**

Identify Animals and Plants – While odors can be used to identify some plants and the sounds of calls can be used to identify some wild animals, most of this work will have to be done by feel with something other than a live animal or plant. For animals, there are several options, which include pelts, hides, horns, antlers, and plaster casts of tracks. You could also reach out to a taxidermist or natural history museum to see if they would allow a Scout to examine mounted animals by touch. For plants, the options include touching leaves, flowers, and bark (insert your own poison ivy or cactus joke here).

Nature Observations – The Scout should make as many observations as possible using other senses, but in most cases, a Scout will need a helper to serve as his or her eyes and then as a scribe to record notes. The helper needs to be instructed to answer the Scout’s questions and describe what is seen in such a way that the Scout draws his or her own conclusions. Helpers should write only the notes they are told to by the Scout. That way a helper is just an extension of the Scout rather than doing the work for the Scout.

Orienteering – The basics of orienteering are not an extraordinary challenge for a blind Scout. There are electronic talking compasses and mechanical braille compasses for the Scout to use to take a bearing. The electronic ones are much more precise. Likewise, pacing off distances is not particularly hard either. For many tasks the Scout may want a buddy to serve as a spotter. However, giving the Scout the experience of working with a map is a significant challenge. There are both high-tech and low-tech options for you to consider.

The high-tech option is to get maps printed in a tactile format. School systems and support agencies for the blind often have access to specialized large-format “Braille” or tactile graphics printers that put patterns of dents on paper or plastic sheets to

create shapes and shading. The printers are relatively expensive, so the most practical solution for a Scout leader is to coordinate with the Scout's family, school, and service agencies to see if they can produce a functional tactile map for your orienteering training efforts.

For low tech solutions you can use the ideas previously discussed above for drawing and diagramming requirements. You can also create models on the ground using rocks, sticks, rope, or other materials at hand to build a small scale replica of the terrain shown on a paper map. Another method to consider is using a shallow sandbox^[5] to sculpt features from the topographic map into the sand. This instructional method allows the Scout to feel the lay of the land and it is also a great instructional aid for everyone else in the group. There is a high tech version of this called an augmented reality sandbox that earth science departments in colleges are using to teach topography effects. If you call around to local colleges, it would be worth the field trip to see one of these in action.

Target Sports – Even without vision, a Scout can master the underlying skills of marksmanship. Vision impaired shooting is a recognized Paralympic sport^[6]. All people have an internal sense called proprioception, which allows us to intuitively know where every part of our body is at all times. It is how you can touch your nose or your opposite elbow with your eyes closed. A Scout that doesn't see can use this proprioception sense to maintain a consistent body position from shot to shot, or to swing a consistent arc with shotgun or tomahawk. Breath control, trigger squeeze, and arrow release techniques can all be mastered as well. All that a Scout needs is a spotter to assist with aiming (laser sights help) and to give feedback on where the last shot went. In working with the Scout, you need to emphasize consistent technique.

Swimming/Water Rescue – There are no obstacles to recreational swimming for a person without vision, provided the standard BSA Safe Swim Defense safety rules area followed; more specifically having a defined swim area, ability groups, swim buddies, and buddy checks. Obviously, for free swimming the buddy will need to be sighted. For the purposes of swim checks, it helps to give the Scout a swimming lane along the side of the pool or next to the dock so the Scout can touch off and maintain a straight course. All of the rescue methods required for Scouts BSA ranks can be performed using sound to locate the target subject. Surface rescue techniques for Swimming and Lifesaving merit badges can also be performed by ear. These merit badges have requirements to bring an object up from the bottom, which might be more difficult for a blind Scout, but the requirement does not state that the Scout must find the object on his or her own or that an aid to locating it cannot be used.

Boating – Again, with canoeing, rowing, kayaking, sailing and motorboating, the standard BSA Safety Afloat rules are generally sufficient, provided a blind Scout is paired with a sighted buddy. The sighted buddy will need to provide verbal guidance for the direction to go, but does not have to be steering the boat. For boating merit badges that require solo boat handling, a buddy needs to be aboard to provide directions (left/right) while the Scout performs the requirement.

Knife and Woods Tool Use – Standard BSA safety rules for handling knives,

axes, and saws are generally sufficient to allow a Scout who is blind to work with these tools, although an extra emphasis on everyone following the rules is wise. When a Scout is learning to use these tools, a sighted leader (youth or adult) needs to be present, to verbally coach the Scout until he or she is competent with that tool.

During the learning phase, it is a good idea for the Scout to use a knife he or she is already familiar with or to start learning with a knife that will he or she will get to keep from then on. It is usually easy to identify which side of a knife blade is sharp from the shape of the grip^[7]. The same is true with an axe handle. Special attention needs to be paid to giving the Scout safe space to work with a knife or in an “axe yard”. Even without sight, it is not hard for a Scout to know where his body parts are in space so he can avoid swinging an axe at himself. Everyone in the unit needs to know to call out to the Scout before approaching and to speak up if the Scout asks “Am I clear?”

Fishing – Fishing is an activity where vision does not offer much advantage when the action is below the surface. From a safety point of view it is not that different from using woods tools. Take time to teach good casting technique with a practice plug or sinker weights to simulate the weight of the lure or hook. The Scout should have a buddy/spotter to help him aim his cast. Give the Scout plenty of space when casting and don’t go close without announcing yourself. A flopping fish can cause injury by biting or sticking you with a fin spine, and the Scout probably won’t have enough feel through the line and pole to judge when and where to safely grab the fish. A few suggestions for successfully removing the fish from the hook include either the Scout using gloves when grabbing the fish and removing the hook, or using a foot to hold the fish down until the hook is safely removed.

Fire Building/Stove Use/Cooking – Those who are blind can generally protect themselves from burn injuries by sensing the heat from a fire or hot object radiating onto their exposed skin and by moving in a deliberate manner when close to a heat source. However, it can be difficult to tell if a pan handle is too hot to touch when working near an open fire because heat is coming from too many directions. The Scout can use another object, like a stick to locate the pan handle. Once located, the scout can do a quick touch of the handle to note how hot it is^[8]. Building a fire lay is not particularly difficult. Lighting a fire is still doable, but the Scout might want assistance from a helper to know if the match is lit and which way to move it to get to the tinder. You can still know if it helps to blow on the fire from the sounds the fire makes.

“Is it done?” Remember that cooking is a life skill that the Scout is also working on at home and learning how to manage. With practice and experience, the Scout can recognize whether food is done from how it smells and how it feels when it is stirred or when you push on it with a spatula. Many foods can be tested by allowing a spoonful to cool off and then taking a bite. Talking timers are very useful for preparing pasta and other foods. A talking meat thermometer can be used to check solid cuts of meat for doneness.

Rope Work – Knots and Lashings are not much harder to teach to a blind Scout than to any other Scout. You do need tactile rather than visual aids as examples. This means you have models of the properly tied knots or lashings for a reference that he or she can feel. You don’t have to use smooth rope for practice. Three-

strand traditional rope is fine as long as the rope is not too thin. ¼ to ½ inch thick rope is fine. Aside from that, the learning process is one step at a time, with lots of practice, like for any other Scout.

Climbing/Rappelling/Challenge Courses – If there is ever a situation where not seeing is an advantage, it is not being able to see how far down the ground is. Rock climbing by feel is not much harder than climbing by sight. The same holds true for rappelling and high-element challenge course activities. In each of these activities, BSA safety rules and facilitator training are sufficient to assure that the Scout is tied into anchors and tethered by belay systems to protect from a fall. Scouts are secured before approaching the edge of any drop off. Like with any other Scout, it is important to have only one person giving voice commands and directions to the Scout. Too many voices become confusing.

The only situation that deserves special attention is rappelling down a natural rock face that has an overhang, because if you step off the overhang unexpectedly your upper body, hands, or head can hit the rock face. The climbing towers in use at many BSA facilities do not have these features.

A paradox is that **low-element challenge course activities may require more attention than high elements**. For instance, a balance beam style element may be low enough that other Scouts are not secured to belay systems, but present a hazard to a Scout who cannot aim his or her direction of fall. Work with the course facilitator to find ways to allow the Scout to participate. It may require rigging a temporary belay system or using other Scouts to act as “spotters” like we do for bouldering. Then the Scout will be able to do the same task as everyone else.

Cycling – The process of pedaling and balancing on a bicycle is not beyond the capability of a blind Scout. However, riding a single bicycle in a limited space is difficult. Tandem bicycles can be used to give a Scout the experience of cycling and to allow the Scout to participate in bike hikes. A sighted rider would do the steering in most cases, but that does not preclude a pair of riders developing enough teamwork to allow the Scout who does not see to steer. There are tandem bikes that are built for off-road mountain biking.

Last Revised 10/1/2020

[1] The Boy Scouts of America would like to thank the National Federation of the Blind (nfb.org) for collaborating with us and reviewing the contents of this module for accuracy and usefulness.

[2] Sighted guiding is a method of walking with people who are blind while they hold on to you and you tell them about the obstacles and changes in elevation. This information is easy to find on YouTube and Google under the search term “sighted guide technique”, so it is not being repeated in this module. You can ask the Scout who does not see and the family whether or not to encourage the whole unit to be trained in sighted guiding.

[3] There are special disc-shaped tips for canes for use in rougher terrain. Telescoping hiking poles or ski poles may also be practical substitutes for a cane.

[4] On a practical basis this is not different than allowing a deaf Scout to have a sign language interpreter.

[5] It would be easy to build a sandbox from a piece of plywood with 2×4 boards around the edges. Fill it with a sack or two of playground sand from a home improvement store.

[6] Paralympic vision impaired shooting uses an audio feedback system to give feedback on how close a competitor is to the center of the target.

[7] This is not true for all knives, and double-edge knives are not recommended for novice users.

[8] The “quick touch” is a good skill to teach any Scout working around a cooking area. Hot objects may get set down and it isn’t obvious whether they are still hot.