

Teaching Knots to Scouts with Poor Motor Skills

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From its inception, Boy Scouts of America has provided a program designed to be inclusive for youth of all abilities; however advancing in rank can be especially challenging to those with poor motor skills due to the knot tying requirements for Scout through First Class. This handout offers tips and helpful hints for leaders working with scouts who possess poor fine motor skills. Keep in mind that *all scouts* learn in different ways. What works for some may not work for others and you may have to experiment with a number of methods to achieve success.

Preparation

Selecting the right rope is the first step. Choose ropes which are soft or smooth to the touch. Thicker ropes will be easier to grip. Stiff or scratchy ropes can be off putting for scouts with sensory issues and should be avoided. The rope you select should be supple enough that it will not straighten itself out after it has been turned or looped. Many leaders have reported that using colored rope has been very helpful. Try fusing 2 different colored ropes together so that the working ends are easily distinguished.

"I like to use solid-colored, large-diameter rope that is braided rather than traditional 3-strand twisted. This stuff is easiest to find with boating supplies. The idea is to minimize the fine motor movements and keep the visual clutter to a minimum. For joining knots, it's good to have two different colors of rope" -Roger Tate, Longhorn Council, Tx.

"Kernmantle rope is the easiest to use. Avoid white; it is stiffer than colors for some unknown reason."
-J.B., Greater Cleveland Council, Oh.

Visual aids are extremely helpful in teaching knots. There are a number of resources available for reference.

- **BSA Deck of Knots**, available from your local Scoutshop or Scoutstuff.org Oversized, laminated cards offer color illustrations and how-to diagrams, with essential details and advice.
- **Animated Knots by Grog** gives you videos showing the steps for each knot. Videos can be slowed down, stopped or even reversed for lefties. It is available both online at <http://www.animatedknots.com/> and through a handy app for your phone.
- **Knots 3D** offers a free app for those who choose to be thrifty.
- **The Klutz Book of Knots by John Cassidy** comes with nylon cord color coded to the illustrations.
- **Red Lace, Yellow Lace by Mark Casey** is a favorite for teaching cub scouts to tie their shoes.
- **Knot Tying: The Basic Knots** [CD-ROM] video instruction for most common knots. 2 colors of rope are included.

You may choose to construct a display board of knots. Many units are already in possession of one but you may want to consider having your senior scouts build one which illustrates the various steps for each knot, as seen below.



Another helpful item may be a knot tying board. Similar to the one pictured above, it provides a stable base to hold the rope and tying instructions can be affixed.

Empathy

Prior to teaching knots to scouts with poor motor skills you may want to try to experience their difficulty and frustration in learning these skills. Wear a pair of thick rubber gloves and try to tie a shoe. You will find that it will take much longer. The laces will seem unhelpful, continually falling out of place. It will likely be frustrating for you and you already know how to tie this knot. Now imagine having these difficulties while simultaneously learning the steps to tie the knot. Teaching knots to scouts with poor motor skills will require patience, persistence and a positive attitude.

Instruction

As with all skills instruction in BSA, the EDGE method should be employed when teaching knots. This method is familiar to leaders working with troops but may be new to Cub Scout leaders. A quick overview appears in the info box below.

The EDGE Method is a four step method for teaching a skill:

Explain: First explain what you will be doing. Describe the steps involved. Use questions to gauge understanding.

Demonstrate: Show how to do the skill. Demonstrate the steps using the actual materials. Describe what you are doing. Visual aids might be helpful for this step.

Guide: Let them practice the skill. Guide and coach them as they try to do it themselves. This step will take the most time.

Enable: Enable them by letting them do the skill themselves without any intervention.

Explain: For some scouts learning to tie a knot simply to fill a requirement is not reason enough. They will be more open to learning if they understand how this skill will help them. Think of the middle school student who asks his math teacher how the Pythagorean Theorem will help him “in the real world”. Be prepared to describe where and when each knot is used. Give a little history if you can as well. Is this knot used by sailors, lumberjacks, horsemen?

Demonstrate: Here is where you may introduce the visual aids described on page 1. Show the scout how to tie the knot. Remember this is not the time to show off your considerable skill at knot tying. You may be able to tie a bowline in record time with both hands behind your back, but that will not help your novice scout. Demonstrate the knot slowly, describing each step. If possible do not stand opposite the scout. It is best to stand beside him so that you share the same point of view.

A Note about Shoelaces

Tying shoelaces is an elective for Wolves. This is actually a fairly complicated knot which many typical children struggle to learn. There are 2 common methods of teaching this particular knot: The Standard method or “Around the Tree” and the 2 Loop method or “Bunny Ears.” Though proponents of each method will debate endlessly that their way is best, in truth, either is fine. Familiarize yourself with both if you aren’t already. Each method uses a story, song or poem to describe the steps. This is a wonderful way to reinforce the multi-step process.

Guide: At this point you can give your scout the rope or ropes that you selected for the particular knot. If the scouts are given the ropes prior to this they will likely not pay attention to the Explain and Demonstrate portions of your lesson. Have your visual aids available and talk through the steps again. Allow the scouts to match their ropes to the pictures or video. Teach yourself to recognize what the knot should look like backward and upside down and offer correction when needed. Use positive reinforcement, and praise even small achievements often.

“You need to understand that you can't ‘fix’ the fine motor skills or the spatial recognition skills required for knots overnight. Those skills WILL develop. Forcing the issue may add unnecessary stress. Relax...they'll figure it out”. –J.K., Great Lakes Council, Mi.

“My experience with my son and other scouts with poor motor skills is: 1st, don't rush them (less stress & anxiety), 2nd, use a multi colored (stripped or patterned) rope; it helps them see it better 3rd, visual aids and step by step methodical demonstrations 4th, repetition, repetition, repetition.” -Sean Williams, Three Fires Council, IL.

“Stand behind him and hold his hands. This is called the hand over hand technique. Knots look very different when you're doing them opposite someone.” -Gavin Bollard, Scouts Australia*

Parents may want to try the Hand over Hand method*at this point. This involves standing behind the scout and guiding his hands through the steps of tying the knot. It is thought that over time he will develop a muscle memory.

* Hand over hand method must **only** be undertaken by a parent or guardian. It resembles a grooming behavior and therefore would be in violation of BSA's Youth Protection policy if attempted by others.

Enable: The hardest of all steps is for the trainer is to let go. Step back and allow the scout to go it alone. Visual aids and knot boards can still be used here. Allow the scout to make mistakes. Sometimes it is as important to learn what is wrong as what is right. Patience and persistence are the keys to success. As the old joke goes; "How do you get to Carnegie Hall? Practice, Practice, Practice!"

"Bribery works wonders. My youngest, full blown autistic, learnt his knots using licorice string. He was only allowed to eat the knots when he got them right. Incentive was huge motivation." - J.M., Central Escarpment Council, Scouts Canada

Knots by Rank

Wolf: Elective 17 -Tie It Right. Overhand Knot, Square Knot, Square Bow Knot (Shoelaces), Half Windsor (Necktie).

Bear: Achievement 22 -Tying It All Up. Whipping, Square Knot, Bowline, Sheet Bend, Two Half Hitches, Slip Knot.

Webelos: Outdoorsman. Whipping and Fusing, Two Half Hitches, Taut-line Hitch, Square Knot, Clove Hitch, Bowline, Sheet Bend.

Scout: Square Knot

Tenderfoot: Whipping and Fusing, Two half Hitches, Taut-Line Hitch, Teach a Square Knot using EDGE.

First Class: Timber Hitch and Clove Hitch as used in lashing, Bowline.

Resources for Teaching Knots

The Six Boy Scout Knots <http://meritbadge.org/wiki/images/5/5d/Six-Boy-Scout-Knots.pdf>

Know Your Knots <http://www.bsa-mdsc.org/sites/default/files/Training/LEAD%20Handouts/BOY240%20Know%20Your%20Knots%20LEAD%202012%20Course%20Outline-1.pdf>

Learning, Teaching and Having Fun with Knots

<http://www.cubpack2.org/forms/leaders/TeachingandHavingFunwithKnots.pdf>

Ian's shoelace Site <http://www.fieggen.com/shoelace/index.htm>

Animated Knots by Grog, The Scouting Knots

<http://www.animatedknots.com/indexscouting.php?LogoImage=LogoGrog.jpg&Website=www.animateknots.com>

Boy's Life- Learn to Tie Knots <http://boyslife.org/video-audio/644/learn-to-tie-knots/>

Photos Credits:

Knot Boards from Houston Scout Fair, <http://lumberjocks.com/projects/31221>

The Knot Tying Board™, <http://nwmaritime.org>