

Knots

A unit in eight 45-60 minute lessons, grades K-12

Stage 1 – Desired Results

<p>ESTABLISHED GOALS</p> <p>Content Standard: - Interpret information presented in diverse media and formats and explain how it contributes to a topic, text, or issue under study.</p> <p>Cultural Standards: - identify and utilize appropriate sources of cultural knowledge to find solutions to everyday problems; - make effective use of the knowledge, skills, and ways of knowing from their own cultural traditions to learn about the larger world in which they live</p>	<i>Transfer</i>	
	<p><i>Students will be able to independently use their learning to...</i></p> <p>select from a variety of knots to successfully bind, tie, or lash for a variety of purposes.</p>	
	<i>Meaning</i>	
	<p>UNDERSTANDINGS <i>Students will understand that...</i></p> <ul style="list-style-type: none"> - knots allow items to be joined and unjoined. - knots exist as metaphors in English, especially for problems. - participating in cultural activities binds a person tighter to their heritage. 	<p>ESSENTIAL QUESTIONS</p> <ul style="list-style-type: none"> - How does knowledge of tying and untying knots help me in both literal and figurative ways? - How does this knowledge help our community?
<i>Acquisition</i>		
	<p><i>Students will know...</i></p> <ul style="list-style-type: none"> - a variety of knots and recommended applications for their use. - of problem-solving strategies based on selecting the proper knot or untying a knot. - that there are multiple ways to learn a skill. 	<p><i>Students will be skilled at...</i></p> <ul style="list-style-type: none"> - fastening line to a cleat - tying fishing line to a hook - joining two ropes together - using a knot to assist in a cultural and/or subsistence activity (i.e. tying together the frame of a fish rack). - sharing knowledge of how to tie a knot.

Stage 2 – Evidence and Assessment

Evaluative Criteria	Assessment Evidence
	<p>PERFORMANCE TASK(S):</p> <ul style="list-style-type: none"> - tie 10 knots and state the best use for each
	<p>OTHER EVIDENCE:</p> <ul style="list-style-type: none"> - Journals with reflections on culture, knots, and problem-solving

Stage 3 – Learning Plan

Summary of Key Learning Events and Instruction

Preparation: Two-three weeks prior to the launch of the unit.

- Contact Elders and community members about sharing local knowledge (see Cultural Notes).
- Although this unit is written as a series of eight activities, an alternate form of presentation is to hold a school-wide Knot Day. Recruit elders and community members to provide the expertise for each of the activities. Provide them with the supplies with at least a couple of days lead time. Put students in multi-age groups that will move through the stations together. Then use the listed activities as follow-up for skills reinforcement.

- Both using Elders and community members and following up later with the videos linked in the activities provide an opportunity to discuss, particularly with the older students, the similarities and differences between Native and Western knowledge and teaching.
- The discussion and journal questions are provided to allow a vehicle for teaching problem-solving skills. In English, problems are often described with knot-related metaphors: tangled, knotty situation, all tied up, slipping from the mooring. Likewise, English uses knot-related metaphors that denote strength and commitment: tie the knot, bound to one's culture, lashed together, tying up loose ends. During class meetings in which problem-solving strategies are discussed, encourage the students to practice tying knots to keep their hands busy (fidget toys).
- Consult with Elders about how the heritage language conceives of problems—is there a similar metaphor? What different ways exist to talk about or describe problems? This [blog](#) shares how Tamil likens problems to knots. What follows in the blog is a good example of how the metaphor can be extended to help us solve our everyday problems. Find an Elder in the community who could give a similar message.

Day 1: Theme - Untangling

- *Prep:* Look in your purse, backpack, or junk drawer for a set of tangled earbuds.
- *Hook:* Hold up your earbuds. Ask, “What causes this? Why is this a problem? How do you solve this? How do you prevent this?”
- *Watch:* [Video](#) explaining knot theory (3-12 grade). [Video](#) with a great method to prevent cable knots (read comments for improved technique). [Video](#) with an alternate method to keep earbuds from tangling that requires a binder clip for each student.
- *Practice.* Chances are good that you have tangled headphones in the classroom! If not, use a thick string to simulate.
- *Discuss:* Where else do you see this in everyday life? What are other objects that often get tangled? What about “tangles” in your life that are situations or experiences? What are some things you can do when you feel “tangled” in a problem?
- *Journal:* “I felt ___ when I untangled the earbuds because... My life sometimes feels tangled when... When this happens I can... One way I can prevent feeling tangled is to...”

Day 2: Theme - Preventing Tangles

- *Prep:* The resource kit has the materials for this lesson, except a shoe with laces. Cut a three-foot length from the roll of paracord for each student who will be tying square knots.
- *Hook:* How many knots do you know how to tie? How to coil line [video](#) - older students. How to tie a square knot [video](#) - 2-4th grade. How to tie shoe [video](#) - K-1 youngest students
- *Practice.* Students could help each other to help them think about how problems often impact multiple people. OR try this first on their own, then see how it feels different with another person??"
- *Discuss:* Where could you use this knot? How does this knot help you prevent tangles? What things can you do to prevent being tangled in other people's problems? How can you be helpful without being in the problem?
- *Journal:* “Knots can be useful for ___ and ____... The next time I feel myself being tangled in another person's problem I will... I think this will help because... I can still be their friend by...”

Day 3: Theme - Fastening

- *Prep:* Gather the sample cleats and lines.
- *Teach:* Fast-tight, share poem [Dreams](#) by Langston Hughes.
- *Discuss:* Knots can cause problems, but not always. They can also be solutions. Why do we want our knots and dreams to be fast? (multiple-meaning words)
- *Hook:* Watch the [video](#) on how to cleat a line.
- *Practice.* Extra time for some students? Review previous knots and/or help others.
- *Discuss:* How might this knot be helpful to you? How might this knot be similar to the relationship between you and your community and your culture? What activities or relationships keep you firmly tied to your heritage? How can you keep that knot “fast” and prevent it from slipping?
- *Journal:* “I am tied to my community every time I... I can strengthen my tie by... I think that this is important because...”

Day 4: Theme - Preventing Loss

- *Prep:* Gather the fishing line, leader, and circle hooks from the kit.
- *Hook:* Have you ever lost a fish? How did you feel? How did others around you react?
- *Watch:* How to tie a [snell knot](#) for use with circle hooks.
- *Challenge:* How to tie the mainline to a leader line [video](#).
- *Practice:* using the same procedures as previous lessons
- *Discuss:* What are all the ways you can lose a fish? Why is it important to tie good knots? What about knots that you “tie” in your own life experience? Lots of good and bad things can happen in your life. Why is it important to have strong ties to your community and heritage?
- *Journal:* “I want to be a person with strong ties to ___ because...I feel strongly tied to my heritage when I ... This helps me in life because...”

Day 5: Theme - Quick Knots

- *Prep:* Cut a three-foot length for each student from the roll of paracord.
- *Hook:* Today we are going to learn a few more knots, each with a different purpose. Can you think about what they might have in common? [Square Knot](#), [Clove hitch](#), [rolling hitch](#), [bowline](#),
- *Practice.*
- *Challenge:* [Sheet bend](#)
- *Discuss:* What are the uses of the knots that you learned today? Earlier we discussed that one way to help solve a problem is to get tangled in another person’s situation. However, sometimes the problem is ours. What are some other ways you know how to solve problems? Which of these problems solving strategies is like a square knot? How? A clove hitch? How? A bowline? How? Did any of you learn the sheet bend? Where is this knot used? What kind of problem-solving is this like?
- *Journal:* “When I encounter a problem in my life, I typically...I’d like to be the kind of person who...There are lots of different ways to solve problems. They are... It is important to use the right kind of solution for the problem, like when...Otherwise, you might...”

Day 6: Theme - Securing a Load

- *Prep:* This activity is best done outside with real vehicles: four-wheeler, pick-up truck, skiff, snow machine. Ask community members to assist in loaning as many as possible. Have a real load to be secured for each vehicle.
- *Hook:* Why is it important to secure your load on a vehicle?
- *Watch:* Secure a load in a [pick-up truck](#); a shorter [version](#) by another person
- *Practice.*
- *Discuss:* What does a trucker’s hitch allow you to do? Why is this important? Recognizing that some problems arise because the other person needs a sense of security, how can you help do that? What are some of the inner resources that you don’t want to lose? How do you make them secure? How do you hold on to the things in life that are most important, and that you really want to carry?
- *Journal:* “I feel secure in our community because...One inner strength that I want to hold on to is... I can help strengthen it by... If I see others are not feeling secure, one way I might help is to...I hope I always “carry” my...”

Day 7: Theme - Tarp Shelter

- *Prep:* The paracord can be used for a ridgeline. Tarps will need to be borrowed from community members.
- *Hook:* If you get stranded in the woods alone, what might be your survival needs depending on the season? Brainstorm together to prepare students to learn about knot-tying for shelter needs.
- *Watch:* Tarp Shelter [video](#) (in some parts the sound is out of sync but still a highly usable video and one of the few available featuring a woman).
- *Practice.*
- *Discuss:* When we listed survival needs, you made a great list of mostly physical needs. These are indeed very important. But what emotional and spiritual resources might also help you survive, not just in an emergency? How do these work to help you survive and thrive? Alone and/or in the community?

- *Journal:* “In an emergency, I could build a shelter by... My other physical needs would be... My emotional and spiritual strengths are... I know that they would help because... In everyday life, I also need “shelter” from... I can make myself and others feel sheltered by...”

Day 8: Theme - Square Lashing Poles

- *Prep:* Ask a community member to cut enough sticks/poles so that every group of four students has two pairs. Ask if there is a community fish drying rack. Is it assembled each season? Are those community members available to give a demonstration as the grounding activity?
- *Watch:* The last knot we will learn is one that incorporates another material. Video on [square lashing](#)
- *Practice:* in groups of four.
- *Challenge:* Sharing your sticks/poles and rope with the other groups, what kind of useful structure could be built? When would this be useful, and to whom?
- *Discuss:* What are the steps of lashing poles together? How are lashed poles useful? In which ways is this easier with another person’s help? Which kinds of problems are made better by working with someone on a common task? What must you do to make sure that goes smoothly? Which of these is hardest for you? Why? Which of these is easiest for you? Why?
- *Journal:* “A time that we needed more than one person to be successful with a task was when... Working with others is important because... One thing I need to improve when working with others is ... One part of working with others that I am already pretty good at is... In the future, I’d like to... My favorite knot from this unit was _____ because... Overall, studying knots helped me understand myself better because... Overall, studying knots helped me understand my community or culture better because...”

Cultural Notes

*General guidelines for school and community success
and space to make notes specific to your community*

Asking for help from Elders

- Ask a trusted colleague about the accepted community norms for requesting help from an Elder. These may include the following considerations: making a personal visit, using a liaison, establishing first contact via phone or email, or having a conversation about a visit while at the store, post office, or other community space.
- You are asking an elder to walk around the community with the class and share community knowledge of locations and resources and their uses. Account for the physical demands of walking and speaking loudly enough to be heard outside.
- Also, ask for permission to make an audio recording of what the Elder shares. Explain that the students will use the recording as a resource to help them learn.

Suggested Resources

Computer resource:

- This [video](#) clip is only available for pay, \$1.99. It is a 21-minute engrossing video on the science of shoe tying. Highly recommended.

Articles:

- A [paper](#) by a therapist who uses knots as a metaphor in his practice by interweaving tying knots, understanding their topography, exploring knots as a poetic metaphor, and creating ornaments from knots.

Extensions

Suggestions and space to make notes.

Cordage is the traditional way many native people made string, twine, and rope. Here is a [video](#) for this extension.