

RAFT IDEAS

Topics: History of Technology, Spatial Skills, Problem Solving, Traditional Crafts

Materials List

- ✓ Rope, cord or string
- ✓ Knot tying instructions

This activity can be used to support the teaching of:

- Traditions, culture, and recreation (National Curriculum for Social Studies: Theme 1, Culture)
- Knowledge and understanding of the past (National Curriculum for Social Studies: Theme 2, Time, Continuity, and Change)
- Problem Solving and Reasoning (Common Core Math Standards: Mathematical Practices Grades 4-8)



All Tied Up!

Challenging Students with Challenging Knots



Challenge your students with these wonderful, complex, historical knots! Not only do knots have their place in history, learning to tie knots using visual directions appeals to the visual as well as the kinesthetic learner, and helps develop spatial skills.

To Do and Notice

1. Provide students with a piece of thin rope or cord and knot directions.
2. Challenge students to use the visual directions to succeed in tying the knots.

Option: Have students work in teams. Everyone on the team must succeed in tying the given knot(s). Students can verbally help one another, but no one can touch another person's rope.

The Content Behind the Activity

Knots range from the extremely simple to the extremely complex. As with most other topics, knot tying crosses many subjects: mathematicians analyze knots, scientists test knots, and artists create aesthetically pleasing knots. Knots have found their way into mythology (Gordian Knot) and proverbial language ("tying the knot" meaning union of marriage). Knots are generally classified by their function; there are 5 main categories: **Stoppers** (terminal knots), **Bends** (to bend 2 lines together), **Hitches** (to tie an object), **Single loops** (creating a loop), and **the Noose**. The decorative knots in this activity are among the more challenging designs.

Knots have a long history. Peoples from around the world have used plant fibers to make cording for thousands of years. Cording was then used to make necessary tools, like fishing nets. Eventually, knot tying became a necessary skill of sailors traveling the world in tall ships. Sometimes, we overlook the importance of the most common things. Without knots, early worldwide trade would not have been possible. Good, bad, or otherwise, human history would look very different without knots.

Resources (Visit www.raft.net/raft-idea?isid=276 for more resources!)

Ropers Knot Page contains directions for plain and fancy knots of all kinds!
<http://www.realknots.com/knots/>

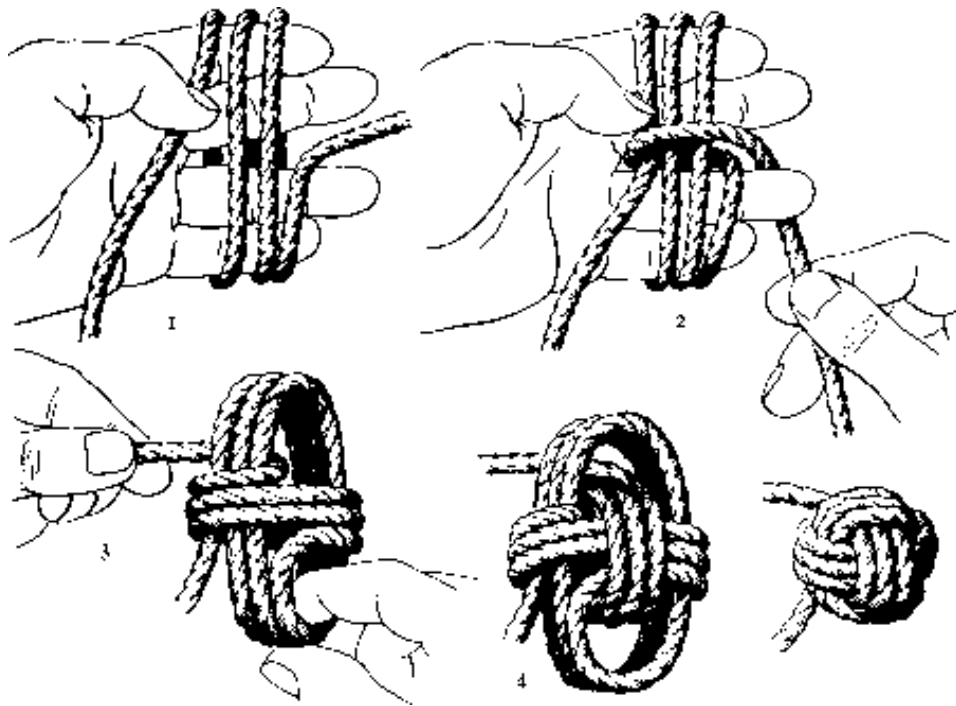
Knotcraft: The Practical and Entertaining Art of Tying Knots, by Allan & Paulette Macfarlan (available at Amazon.com) has directions for numerous knots, plus chapters on history, games, tricks, and more!

For a variety of activities that help students analyze knots mathematically (knot theory), visit "The Knot Plot Site" at:

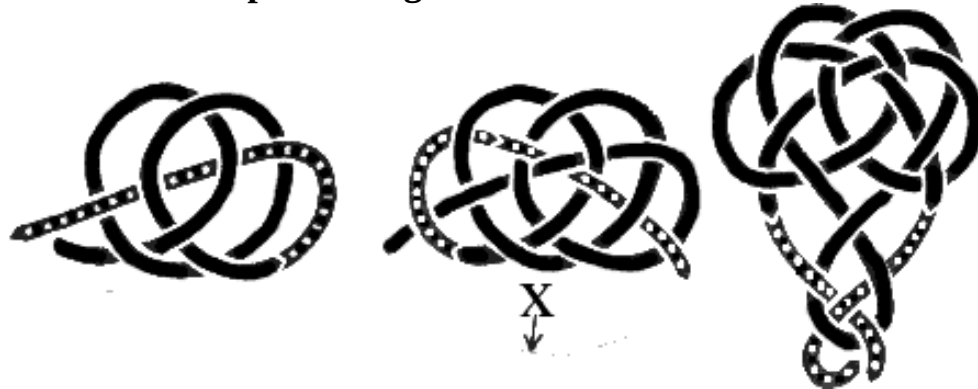
<http://www.cs.ubc.ca/nest/imager/contributions/scharein/KnotPlot.html>

All Images from Ropers Knot Page (<http://www.realknots.com/knots/>)

Stopper: The Monkey's Fist



Breastplate Design: Double Headed Carrick



Breastplate Design: The Bell

