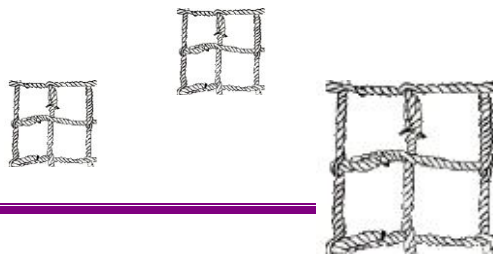




NET KNOTTING



Grade Level: 6-12th grades

Objectives:

1. Youth understand net structure by making knots and differently shaped nets.
2. Youth understand the function of a simple measuring device.
3. Youth use the Internet to research traditional and modern technologies, history, and science of net making.
4. Youth work with others to link project to community.

NYS Learning Standards:

Math, Science, and Technology

- Students access, generate, process, and transfer information using technologies.
- Students apply technological knowledge and skills to design, construct, use and evaluate products.
- Students use mathematical analysis, scientific inquiry, and engineering design to pose questions and develop solutions.

National Science Standards:

Content - Grades 5-12

Science as Inquiry

- Ability to do scientific inquiry (5-12)

Science & Technology

- Understanding science and technology (5-12)

Science in Personal & Social Perspectives

- Science and technology in society (5-8)
- Natural Resources (9-12)

History and Nature of Science

- Science as a human endeavor (5-12)
- Historical perspective (9-12)

Vocabulary

- **Knotted Netting** – An open textile structure. Loops of a single yarn are knotted together.
- **Mesh** – Openings between knots.
- **Gauge** – A tool to measure and standardize mesh size.
- **Shuttle** – A tool that holds the yarn.
- **Net** – A loose, open, flexible fabric.

- **Sheet Bend Knot** – A knot commonly used for knotted netting. It is also called the weaver's knot, netting knot, or mesh knot.

History

For thousands of years, nets have been used to trap, carry, protect, and store items. The Parutes used nets to snare rabbits; Northwest coastal peoples made large deep-water fishing nets, and hair nets are still preserved in the tombs of ancient Egypt. Today, netting structures are found in hammocks, basketball nets, insect traps, tennis nets, plant hangers, shopping bags, belts, clothing, hockey/soccer goals, etc.

Science

Many materials can be fashioned into the yarns used to make nets: rawhide, sinew, flax, dogbane, cedar, milkweed, cotton, wool, etc. The net mesh can be made with overhand, square and figure-eight knots, but the hands down favorite is the *sheet bend knot*, a stable, strong, asymmetrical fixed knot. View an animation of how the sheet bend knot is made at http://www.tollesburysc.co.uk/Knots/Sheet_bend.htm

Technology

Knotted netting can be accomplished with only nimble fingers as tools, but a gauge (spacer or sizer) and a shuttle speed the task. Gauges are made from bone, hardwood, ivory, plastic, or cardboard and come in a variety of shapes and sizes. The gauge sets the mesh size. The circumference of the gauge should be one half the circumference of the desired mesh opening. The gauge should not be more than ¼ inch wide; the length is unimportant.

The shuttle carries the netting yarn to prevent tangling. It should be smooth, strong, and light weight. It should fit comfortably in the hand and be an appropriate size for the yarn and the mesh. It can be made of the same materials as the gauge. Below are two common shuttle styles.

A)



B)

