

Inquiry Question***How to apply Pythagorean Theorem in Ktunaxa Fish Traps?***

Name: _____ Date: _____

The Ktunaxa peoples (also known as Kutenai or Kootenay), whose traditional language is an isolate, are based along the western edge of the Rocky Mountains in the Kootenay River basin. This region is now known generally as “Kootenay” or “the Kootenays.” The Ktunaxa are experts at fishing in streams, rivers and lakes. For hundreds of years they have used willow branches to build traps for catching fish.

In this unit, you learned that the Pythagorean relationship of the sides in a right triangle states that $a^2 + b^2 = c^2$. A right triangle has a 90 degree angle called a right angle. The side opposite the right angle is called the hypotenuse. The sides of a right triangle are often labelled a, b, and c, with c being the hypotenuse.

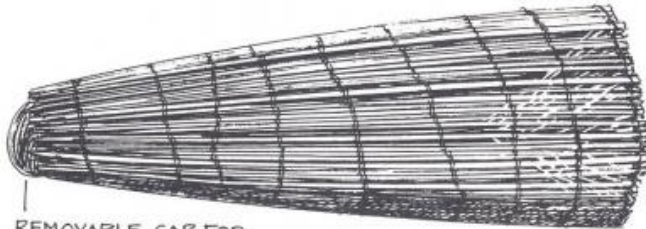


Image credits: https://firstpeoplesofcanada.com/fp_groups/fp_plateau3.html

General Instructions

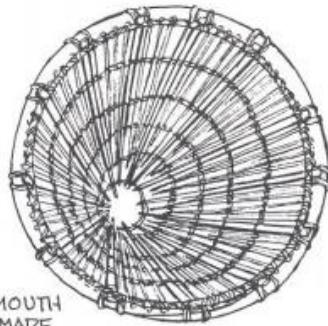
1. Consider the following Pacific Northwest Basket Traps.

BASKET TRAP

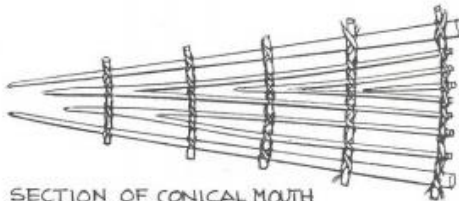


REMOVABLE CAP FOR
TAKING OUT FISH

1-37 m. 23-KW

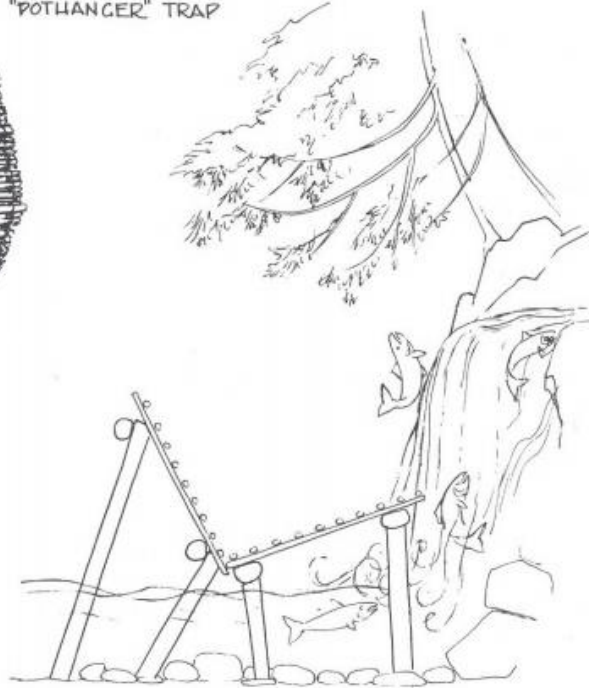


CONICAL MOUTH
OF TRAP MADE
WITH SPLIT STICKS

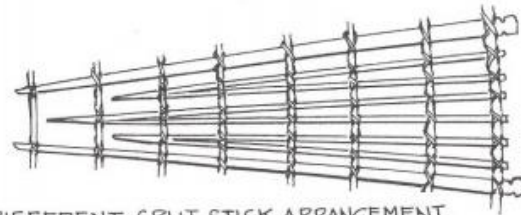


SECTION OF CONICAL MOUTH
OF TRAP SHOWING SPLIT STICK
ASSEMBLY - THIS AVOIDS CLUSTER OF
TOO MANY STICKS AT NECK AND FACIL-
ITATES MAKING CONE SHAPE .

"POTHANGER" TRAP



TRAP FOR SALMON - JUST BELOW FALLS IN
A RIVER, LATTICE IS ATTACHED TO FRAME -
WORK - FISH FALLING BACK AFTER UNSUC-
CESSFUL LEAP ARE CAUGHT IN TRAP. 29 NK

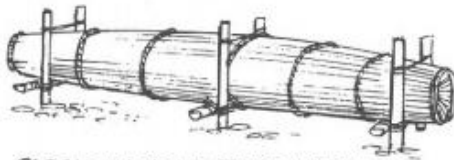
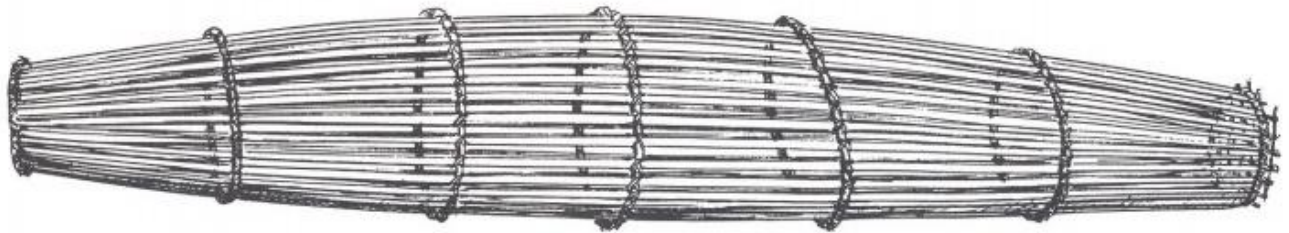


DIFFERENT SPLIT STICK ARRANGEMENT.
DETAIL FROM A LARGER TRAP- 11-KW

Indian Fishing (Early Methods on the Northwest Coast), Hilary Stewart:
Douglas & McIntyre Ltd., 1977

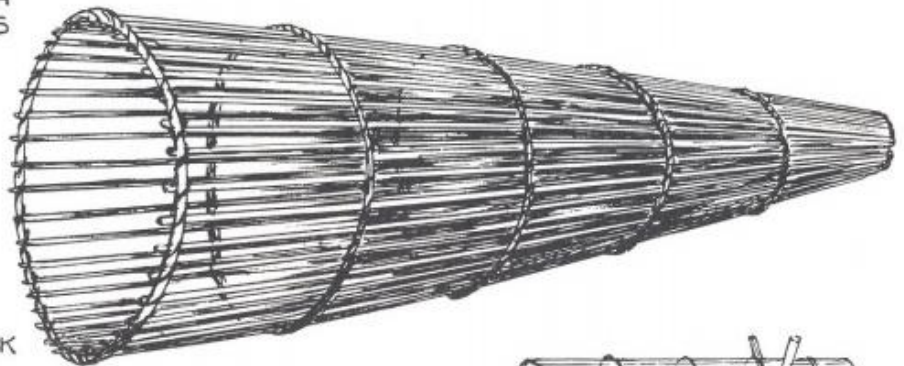
Adapted from: <http://sd79.bc.ca/programs/abed>

BASKET TRAPS



POSSIBLY USED THUS, WITH FENCE WEIRS - 32-05

TYPE OF TRAP USED WITH FENCE WEIRS, OR PART OF LARGER TRAP COMPLEX - DRAWN FROM EARLY PHOTO, LOCALE UNKNOWN. 27x APPROX. LENGTH 3m



RIVER TRAP. 29-NK

TRAP USED IN SHALLOW, FAST FLOWING STREAM - WHEN SALMON ARE MIGRATING, MEN UPSTREAM FRIGHTEN FISH BACK DOWN RIVER - STRONG CURRENT DRIVES FISH UP INTO TRAP WHERE THEY ARE SPEARED.



MOUTH OF TRAP WEIGHTED WITH ROCKS - END RAISED UP ON SHEARS.

Indian Fishing (Early Methods on the Northwest Coast), Hilary Stewart: Douglas & McIntyre Ltd., 1977

2. Watch Ktunaxa Video:
http://acip.sd79.bc.ca/video/quicktime/math/ktunaxa_fish_trap.mp4
3. Draw to show how the Ktunaxa Fish Traps relate to the Pythagorean theorem
 - a. Label every side of the right triangle
 - b. Show proof that $a^2 + b^2 = c^2 \rightarrow$ rearranged as $\rightarrow c = \sqrt{b^2 + a^2}$

4. How is the cosine law related to the Pythagorean Theorem?

Project submission

- A picture of your drawing
- A copy of your data sheet with calculations