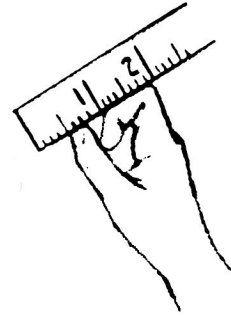


## *Estimating*

Your body can be used for measurement in the woods if you know key facts. Knowing your own, or a fellow scout's, height can help you determine the **height** of an object. Knowing your pace can help you determine how long it will take you to cover a known **distance** or would be useful on an orienteering course. Knowing which of your finger joints is 1 inch can help you locate a stick that thickness. And, the width of your hand span or arm reach can help in determining an object's length or circumference. Knowing how to count elapsed seconds is helpful in guessing how much **time** has gone by. Think how useful this would be if you needed to cook an egg and didn't have a watch!



This chart can help record useful body measurements.

Personal Measurements	Person #1	Person #2	Person #3	Person #4
Height				
Arm span: fingertip to fingertip				
Length of right foot				
Hand spread: with hand spread out, thumb tip to last finger tip				
Find a 1 inch finger joint				
Pace: (measure # of steps in 50 ft.)				

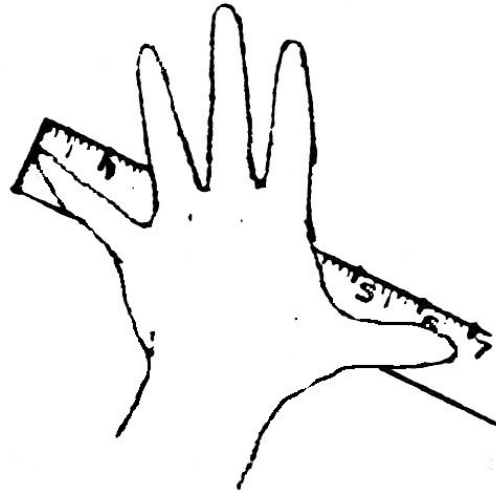
To figure out body measurements, you will need a measuring tape and a ruler.

**Pace:** This is the distance you cover in 2 steps.

- Mark off a pace line by placing a stake into the ground at each end of a measured distance (example: 50 feet); or by drawing chalk marks at 2 foot intervals for the length of a measured distance (example: make a mark every 2 feet for 50 feet).
- Walk from one end of the pace line to the other in your normal stride. You should be walking naturally, not elongating your steps or shortening them. Count the number of paces taken. (Pick either your right or left foot and count each time you put down that same foot.)
- Repeat 2 more times. Add together the number of paces taken each time and divide by 3 to get the average number of paces taken in the measured distance.
- Now you know your pace

**Length:** What is the length of your foot? Which joint in a finger measures 1 inch? What is your arm span from fingertip to fingertip? What is your hand span from thumb to little finger with the fingers spread out?

**Time:** Do you have a practiced method for determining when a certain amount of time has gone by? Is it tapping your foot, swaying side-to-side, counting 1,000 - 1; 1,000 - 2? Knowing what works for you ahead of time comes in handy in many situations.



**Height:** If you know your own height or the height of a fellow camper, you can easily determine the height of another object (say a tree). Have a person whose height is known stand against that object, and then holding a pencil with your arm outstretched, close one eye and look at your friend. Using your thumb, mark where your friend reaches on the pencil. Now see how many times you need to stack that height to reach the top of the tree. You then multiply their height times how many times you stacked your thumb. This will be the approximate height of the object.

**Weight:** By practicing ahead of time, you can become fairly proficient at determining something's weight. Start by lifting something whose weight is known – say a 1-pound bag of rice. Repeat this with both hands until you feel comfortable holding something that weighs 1 pound. Now pick up something else whose weight you don't know (have someone put an item in a bag so you can't see the weight). Is it heavier or lighter? Keep testing yourself with known and unknown weights until you feel comfortable you can tell the difference between the weights of different objects.