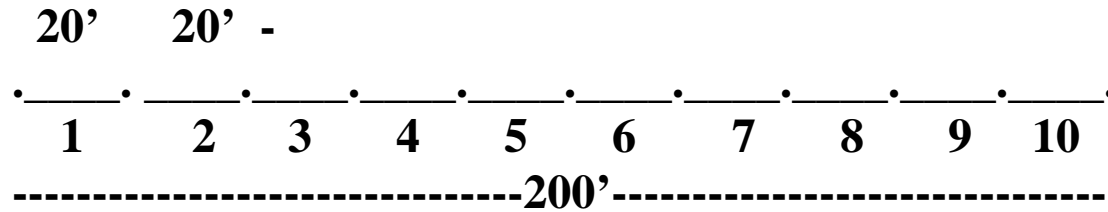


# Forestry

## I. Determining Your Pace

Azimuth 150 degrees  
30 degrees East



1. Get a piece of rope or string
2. Measure off 20' using tape measure or yardstick. (Tie a small loop at each end.)
3. Using the string for measuring, lay out a distance on the ground of 200'. (10 lengths)
4. Drive a stake at each 20' interval to use as a site line in order to keep 200' Line as straight as possible.

Once your pacing course is set up, follow the procedure below:

1. Walk the Distance a number of times, counting your steps until you have adjusted the length of your steps in order that:
  - 100 steps cover 200' (short person)
  - 80 steps cover 200' (tall person).
2. Covering the course
  - a. If you covered the course in 100 steps; pace = 2 feet.  
To measure distances in the field- count your steps x 2 = distance in feet.
  - b. If you covered the course in 80 steps; you pace = 2.5 ft  
Distance = # of steps x 2.5  
(Simpler: # of steps x 10 divided by 4)  
(Simpler yet: count off feet- every 2<sup>nd</sup> step is 5'  
5-10-15-20-25, etc.



## II. Compass Course

Triangle: 120 degree angles  
200' sides

Testing your Compass Abilities

Two Essentials: (For accurate compass work.)

1. Compass housing must be set at the **exact** degree number
2. North part of the compass needle must point **exactly** to the north of the compass housing.

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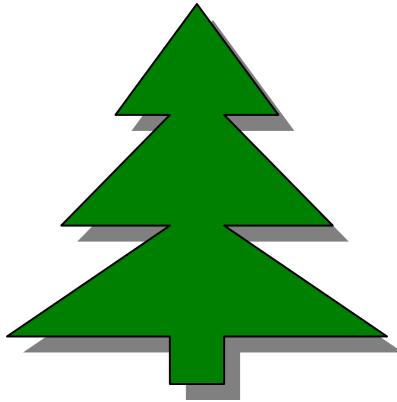
Compass Course

1. Start at starting stake for pace course.
2. Set compass at degree/bearing of trial pace course.
3. Pace 200 feet along pace course line (You should now be at your last of 10 stakes.)
4. Add 120 degrees to your original course line & reset compass to this new bearing.
5. Walk 200 feet in the new direction. Mark your new point.
6. Again add 120 degrees to the last bearing and reset your compass.
7. Walk 200 ' feet in this new direction.
8. Stop.  
**You should be at your starting point.**

### III. Measuring Heights

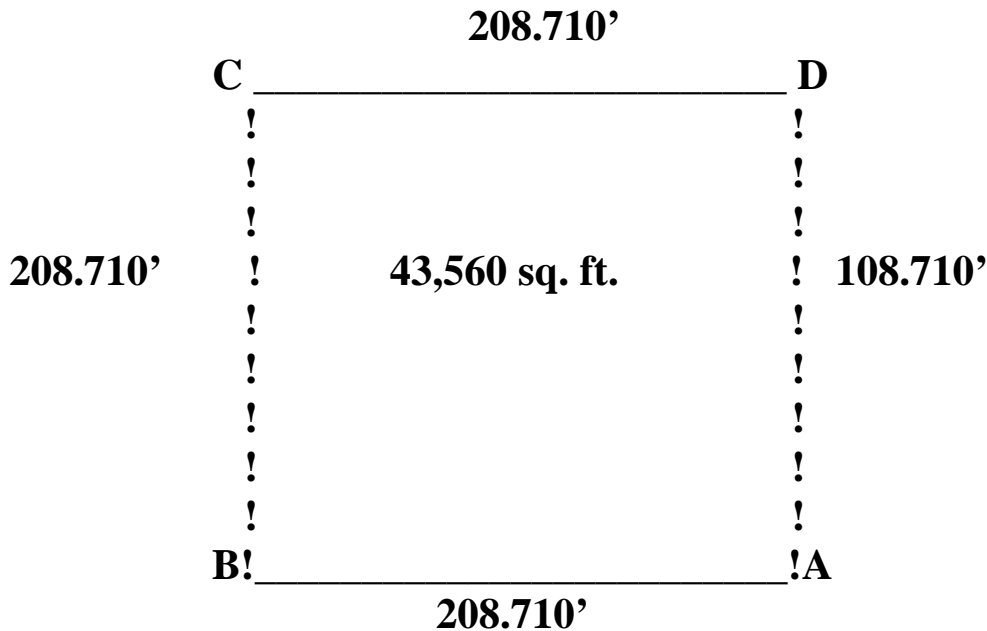
Pencil Method (Artists Method)

1. Place someone whose height you know against the object to be measured ( Tree!)
2. Step Back 60-100')
3. Hold Pencil or stick upright in our outstretched hand. Mark the stick with your thumbnail the height of the person.
4. Use that length of the pencil. Count the pencil lengths. Multiply the number of lengths x the height of the person to determine the height of the tree.



## IV. What is an acre?

How big is an acre?? **43,560 square feet**



1. Start at Point A (Beginning point of pace course) Read compass bearing from Point A to Point B. Pace from A to B. Your distance should be 208'
2. Add 90 degrees to first course (right angle) Sight on object and pace 208'. Set grade stake at Point C.
3. Add 90 degrees to second course. Sight on object and pace 208'. Set grade stake at Point D.
4. Add 90 degrees to third course. Sight on object and pace 208'. You should be back at Point A. (Point of Beginning)

**You have just laid out a one acre lot.**

**Is an acre larger or smaller than you had previously thought?**

# V. Competition

- Trees compete with each other for sunlight, water nutrients, and space for growing.
- Trees occupy the forest canopy, the under-story, and the forest floor.
- Trees can be classified according to the position they occupy in the canopy or under-story.
- Generally, Trees that get the most sunlight grow the fastest.

## Five classes of Trees:

### 1. Dominant Trees

The crowns (Tree tops) rise above the general canopy. They receive full sunlight from top and all sides.

### 2. Co-Dominant trees

These make up the canopy level. Crowns receive overhead light, but some side sunlight is restricted from other trees.

### 3. Intermediate trees

These trees occupy the canopy level, but receive sunlight from only above.

### 4. Suppressed trees

These trees receive no direct overhead sunlight. Usually these are slower growing and weaker.

### 5. Dead trees

These can be found in the Canopy, under-story or on the forest floor.

\*Not all trees need direct sunlight to grow. These trees are called shade tolerant. They grow well under other trees.

**Shade Tolerant Trees: Maple, Hemlock, and Fir**

**Shade Intolerant Trees: Pine, Aspen, and Birch**

Shade intolerant trees do not grow well under other trees.

# VI. Forest Life Zones

## 1. Emergent

- Tree which grows above the general level of canopy
- Relatively unsheltered crown

## 2. Canopy

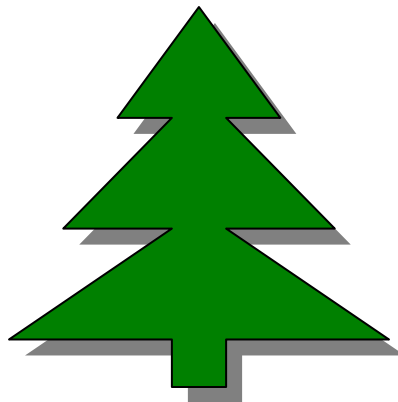
- Level of Forest just below the emergent level
- Roof of the forest with crowns of dominant trees
- Host to a broad spectrum of birds, small mammals & insects

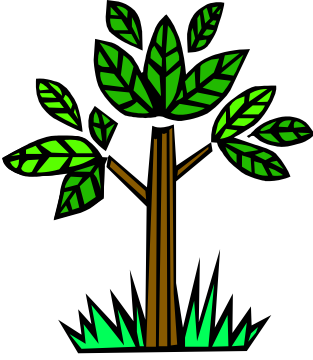
## 3. Under-story

- Area of the forest below the canopy
- Comprised of shrubs, snags, and small trees.
- Receives little light.
- Provides shelter and habitat for larger mammals (fox, raccoon, deer, bear), birds, insects, and spiders.

## 4. Forest Floor

- Lowest Level of the forest
- Made up of tree seedlings, dead leaves & needles, grasses, ferns, flowers, fungi, decaying organisms
- The forest floor is home to a multitude of organisms.





## VII. Circular Plot

Define a circle in the young forest with a radius of 37.2', which represents a 1/10 acre plot. (4, 367 sq. ft.)

1. Locate the center of the plot with a grade stake with a bright piece of flagging.
3. Using a measuring tape or a 37.2' length of rope, measure 37.2' from the plot center.
4. Circle the center stake with the measuring rope or tape outstretched, flagging the perimeter.