



TREE STUDY OUTDOOR LAB

TEAM MEMBERS:

Materials: Get the following materials from your instructor/assistant:

- Clipboard and pencil
- Tape measure (share)
- Clinometer (share) **Safety glasses!**
- Tree boring tool (share)
- Calculator (share)

Directions: Your team will be directed to a tree by your instructor/assistant.

A. Clinometer: *Be sure to wear safety glasses.*

1. Determine what kind of tree you are studying: _____ (5 pts.)_____
2. Use the clinometer to determine how high your tree is: _____ (5 pts.)_____

B. Tree Boring:

1. Measure the girth (around) of the tree at chest level _____ (5 pts.)_____
2. Now, carefully take a bore sample (at chest level) of the tree and show it to the instructor/assistant.
Successfully/Safely collected a bore sample. (5 pts.)_____
3. Now count the number of rings in your bore sample.
How old is your tree? _____ (5 pts.)_____

C. Tree ID:

With the plastic bag/bucket, collect different leaves/pine cones/needles off the ground. One point for each different leaf/cone/needle/s collected and checked by the instructor.

Jack Pine	(1 pt.) _____	White Pine	(1 pt.) _____
Red Pine	(1 pt.) _____	Spruce	(1 pt.) _____
Maple	(1 pt.) _____	Red Oak	(1 pt.) _____
Popple (Aspen)	(1 pt.) _____	Birch	(1 pt.) _____

Cleaned up and Returned Equipment (2 pts.)_____

TOTAL TREE LAB POINTS (35 pts.)_____

HOW TO USE THE CLINOMETER

The clinometer is used to measure the “slope” of a hill or the height of objects, like trees. Here is what you will need and how to use the instrument to measure the height of an object (tree) selected by your instructor.

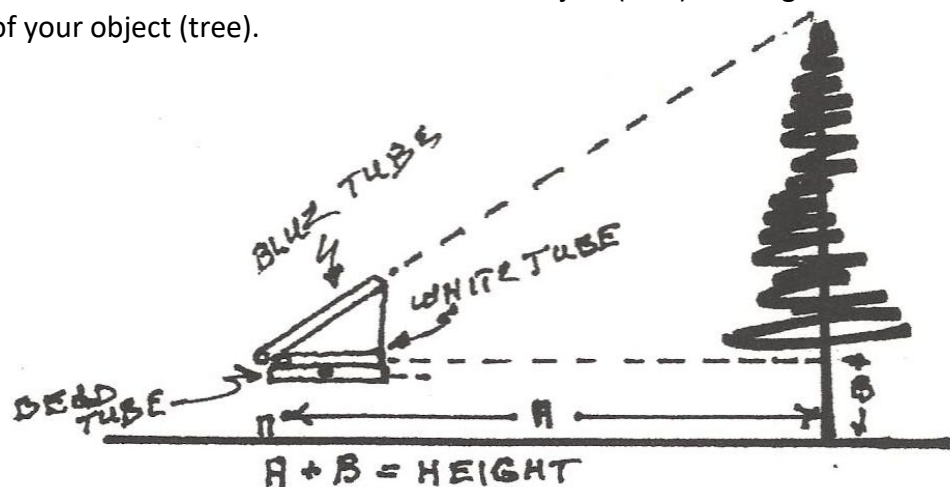
Equipment:

- Safety glasses
- Clinometer
- Measuring tape/meter stick
- Tongue depressor/stick
- Pencil and this lab

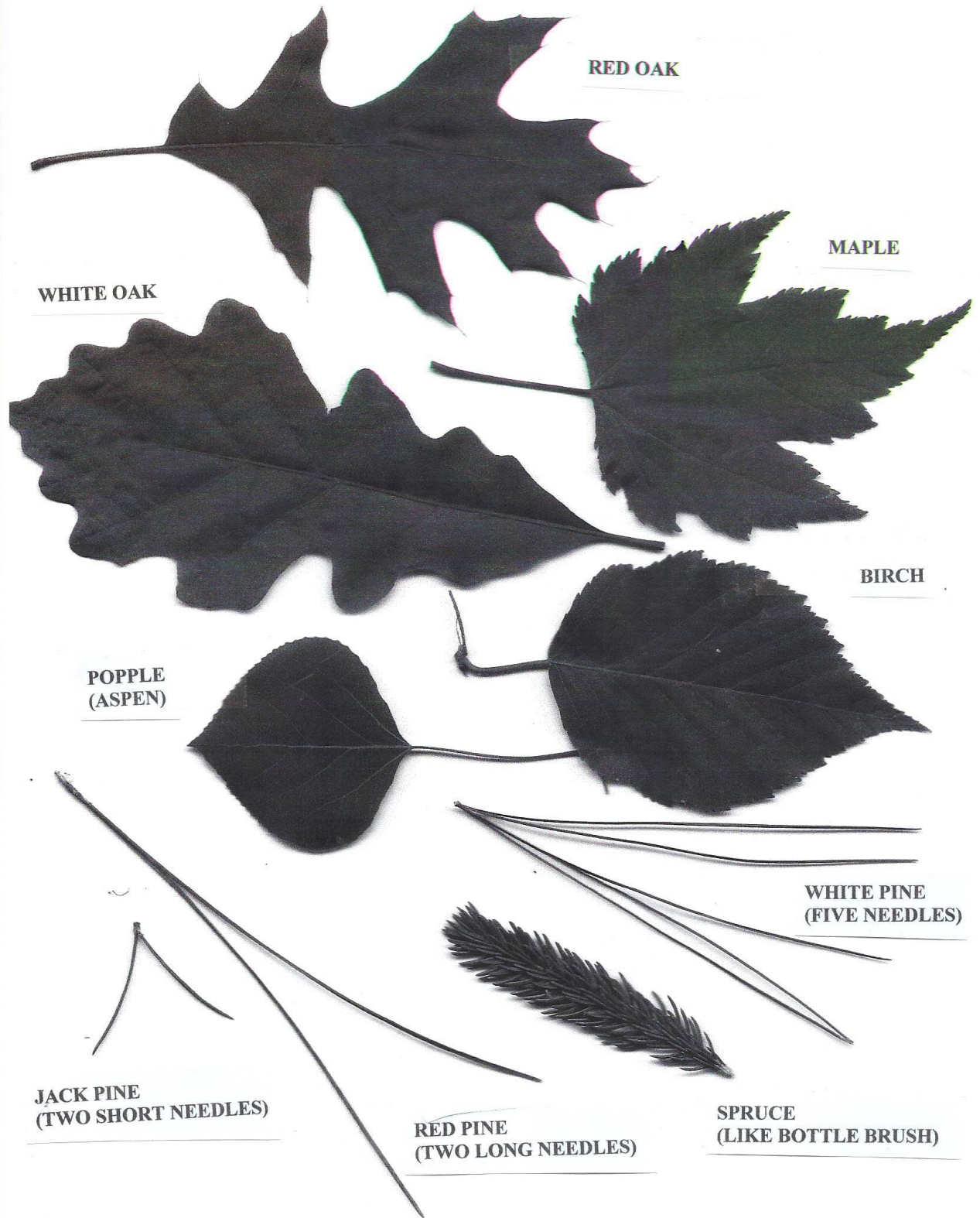
Directions:

You will need three people: One to use the clinometer, one to watch the pendulum level and one “spotter” to make sure nobody gets hurt while moving about and to mark sites.

- **First person** stands about as far from the object (tree) as it is “high.” Then puts the **safety glasses** on and looks through the **blue** tube at the top of the object (tree) while keeping the base (bottom) level. Carefully move back and forth until you see the top of the object (tree) and the second person tells you the bottom of the triangle is level.
- **Second person** watches the **wire pendulum** making sure it is free to spring and straight down and parallel to the line on the triangle. The bottom of the triangle is then level.
- **Third person** marks designated sites and watches the first person so he/she does not stumble while moving and looking through the blue tube.
- Once the top of the object (tree) has been sighted while keeping the clinometer level, the spotter marks the spot on the ground with the stick.
- First person now looks through the **white tube** while keeping it level and the spotter marks the spot on the object (tree). Measure the distance to the object (tree) and the mark on the ground and add the distance from the mark on the object (tree) to the ground. This will be the height of your object (tree).



LEAVES RESOURCE MATERIAL



CONES RESOURCE MATERIAL

