

NAME _____

PER. _____

Get to Know Your Local Pine Species!

In this lab you are going to be exploring the structure and function of needles and cones. Recall that needles are the leaves of conifer trees, and the cones are the reproductive structures of the trees.

Procedure:

Step 1: Drawings

Obtain one female cone and one bundle of needles. Sketch both below in color. Be sure to label the seed cone, bracts, seeds (if found), leaf bundle, and leaves/needles.

Step 2: Using the taxonomic key, name the tree these needles and cones came from.

The tree name is _____.

Step 3: Measurements

Complete the following tables to gather data about the sizes of the female cone and needle structures.

Fill in the table below for the female cone

Female Cone Structure	Measurement: label with metric units
Height	
Width (at widest point)	
Length	
Number of Bracts	

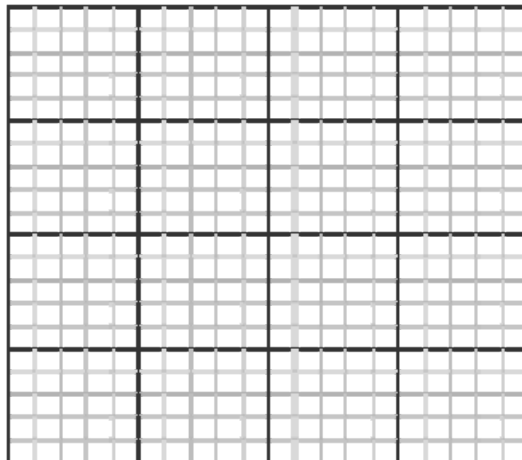
Fill in the table below for the bundle of leaves/needles

Needles	Needle Length: label with units
Needle 1	
Needle 2	
Needle 3	
Average	

Step 4: Class Data

Add your number of bracts and the average needle length to the class data table. Copy the tables below and calculate a class average for each trait. Choose *either* number of bracts *or* needle length and complete a corresponding bar graph (include class average).

Group Number	Average Needle Length	Number of Bracts
1		
2		
3		
4		
5		
6		
7		
8		
Class Average		



Step 5: Analyze and Conclude:

Answer in complete sentences.

1. How many bracts did your pine cone contain? Why might it be beneficial for the tree to produce cones with many bracts?
2. How are these needles different from the flat leaves most trees seem to have? What might be some advantages to having a longer, thinner needle for a tree?
3. Some pine trees only open their cones under severe heat conditions, like a wildfire. How would releasing your seeds only after fire benefit your species?
4. Assume a wildfire went through a local forest. You were tasked to determine how many pine seedlings we would need to plant to aid in reforestation. If 600 acres burned, and commonly 150 trees are planted per acre, how many seedlings would you need?