

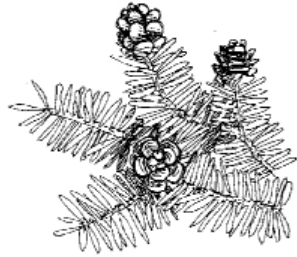
Tree Abundance

Making meaning of data



Forest Composition Field Investigation

Comparative Question: *Which tree species is most abundant in the forest at _____?*



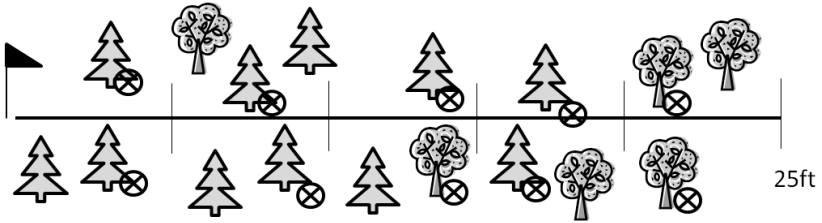
Learn about the Tree Species and their Needs

(This helps provide science concepts for reasoning)

Tree Habitat Requirements and Characteristics

Tree	Light	Water	Nutrients
<p>Redcedar</p> <ul style="list-style-type: none"> • Prefers mild temperatures • Prefers moist to swampy soils • Tolerates seasonal flooding • Seedlings require some shade 			
<p>Douglas-fir</p> <ul style="list-style-type: none"> • Prefers moist well-drained soils • Lives in a wide range of rainfall amounts • Lives in a wide range of temperatures • Not tolerant of shade 			
<p>Western Hemlock</p> <ul style="list-style-type: none"> • Prefers moist well-drained, but not super wet soils • Can germinate in the shade and prefers mild temperatures • Requires high organic content in soils (likes nurse logs) • Not tolerant to drought 			
<p>Big Leaf Maple</p> <ul style="list-style-type: none"> • Prefers nutrient-rich soils and • Prefers mild temperatures • Moist, well-drained soils • Not tolerant to saturated soils 			
<p>Red Alder</p> <ul style="list-style-type: none"> • Grows when an area has been opened up after fire or logging • Tolerates drought and flooding • Tolerates brackish conditions • Grows quickly and fixes nitrogen from the air 			

Question: Which tree species is most abundant in the Forest at _____?

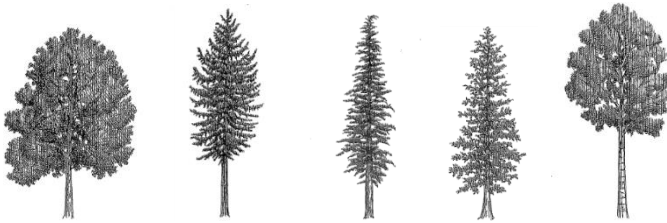


Identify and measure the circumference of the closest tree to the trail along the line on both sides of the trail. ⊗ Indicates trees that should be measured.

Transect procedure

1. Look at the forest and predict which type of tree will be most abundant (have the greatest number) in the forest.
2. Find your assigned transect numbered flag along the trail.
3. Stretch your measuring tape ____ **feet along** the trail.
4. Within every 5 feet section along the transect, identify the closest tree (over 5” diameter) to the trail on both sides of the trail.
5. Record whether the trees identified are Red Cedar, Douglas-fir, Hemlock, Big Leaf Maple, or Alder. Ten trees in all.
6. Record your information under your assigned transect number on the *Tree Species Abundance Data Collection Sheet*.
7. Collect data from all five transects and determine the percentage for each of the 5 tree types.

Forest Tree Composition



Tree Species Abundance Data Collection Sheet

Comparative Question: Which tree species (Red Cedar, Douglas-fir, Hemlock, Big Leaf Maple, or Alder) is most abundant in the forest at _____ ?

Prediction: _____

Materials: _____

Forest Name:

Canopy closure %:

Location:

Date:

Type of Forest (Deciduous, conifer, mixed):

Length of transect Line:

Tree Species Abundance Data Collection Sheet

Transect number: _____

Type of Tree	Number	%
Western Red Cedar		
Douglas-Fir		
Western Hemlock		
Big Leaf Maple		
Red Alder		
Total		

Combine data from 5 transects

Type of Tree	Number of Trees					Total	Percent
	Transect 1	Transect 2	Transect 3	Transect 4	Transect 5		
Red Cedar							
Douglas-Fir							
Western Hemlock							
Big Leaf Maple							
Red Alder							
	Total						

Share Your Data with Graphs



Claim, Evidence, Reasoning

Constructing an Argument/ Explanation to answer the comparative question:

Which tree species (Red Cedar, Douglas-fir, Hemlock, Big Leaf Maple, or Alder) is most abundant in the forest at _____?

Claim

Evidence

Reasoning

Talk Moves

1. Claim:

We compared which tree species was most abundant in the forest at __. We took ___ random samples using transects and counted and identified ___ trees total. We found that _____ was most abundant and _____ was second most abundant while _____ was the least abundant.

2. Evidence:

I agree _____ was most abundant. We counted _____ # of them. _____ was second most abundant and we counted _____ # of them. _____ was the least abundant and we counted _____ # of them.

3. Evidence:

I (agree/disagree).

There were _____ % of _____ (most abundant)

And there were _____ % of _____ (second most abundant)

And there were _____ % of the least abundant.

4. Reasoning:

I think one reason _____ was most abundant in this forest at ____ is because _____.

What other reasons can you think of?

Do you think we collected enough data to answer the question?

