

Trees of Minnesota



Forested

- Land that is forested or has trees growing on it
- To be classified as **forested** (forestland) the area must be at least one acre and contain at least 10% tree cover.

Project Learning Tree

A little pre-test.

- Take out a piece of paper and a pencil or pen.
- Put your name and class period in the top right hand corner.

1. What percent (0-100) of Minnesota is forested land?

a) 18%

b) 32%

c) 44%

d) 67%

2. Approximately how many trees can be found in Minnesota forests (not counting saplings)?

- a) 850 million
- b) 1.2 billion
- c) 1.8 billion
- d) 2.2 billion

3. What is the most common tree in Minnesota?

- a) Quaking Aspen
- b) Sugar Maple
- c) White Oak
- d) Black Spruce

4. What is the state tree of Minnesota?

- a) Red Pine
- b) White Pine
- c) White Oak
- d) Black Spruce

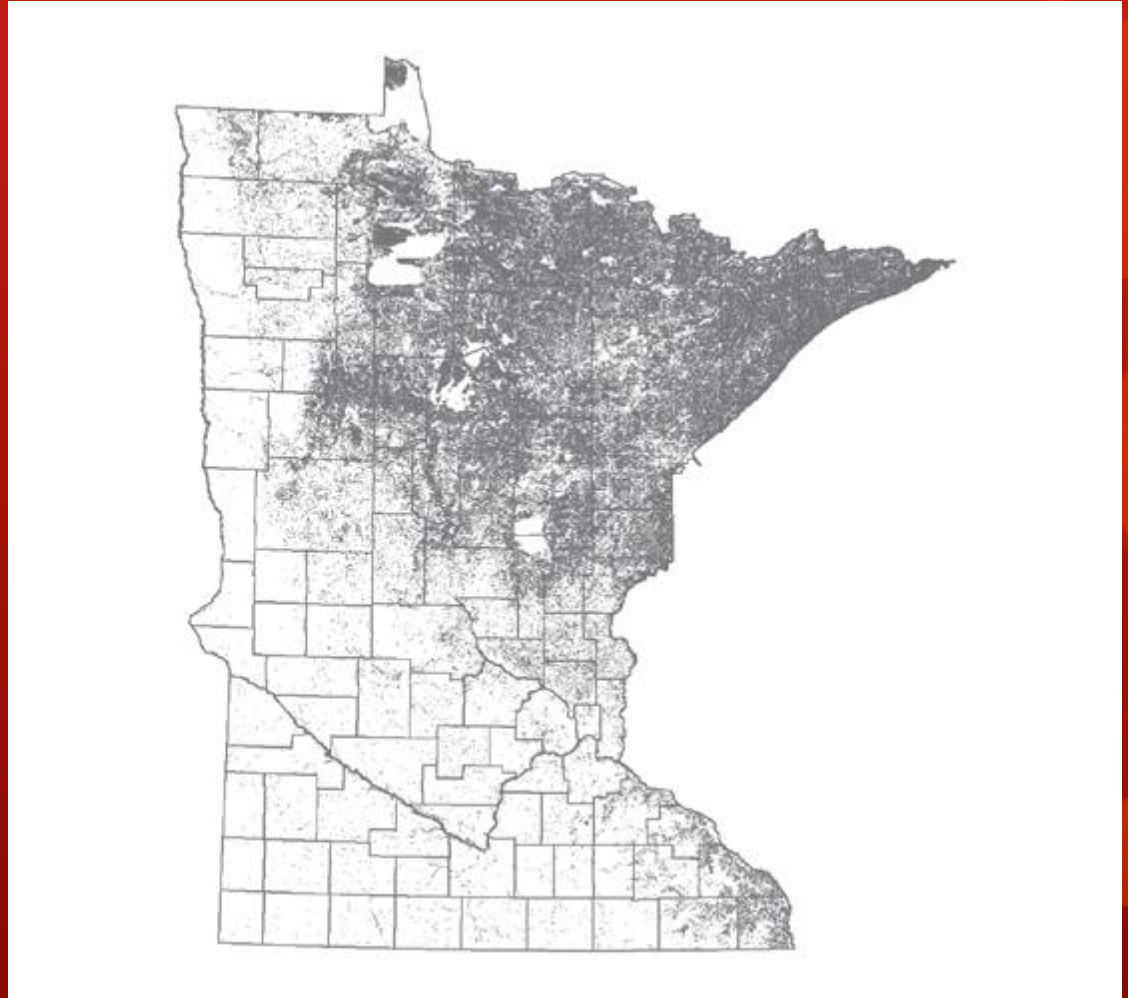
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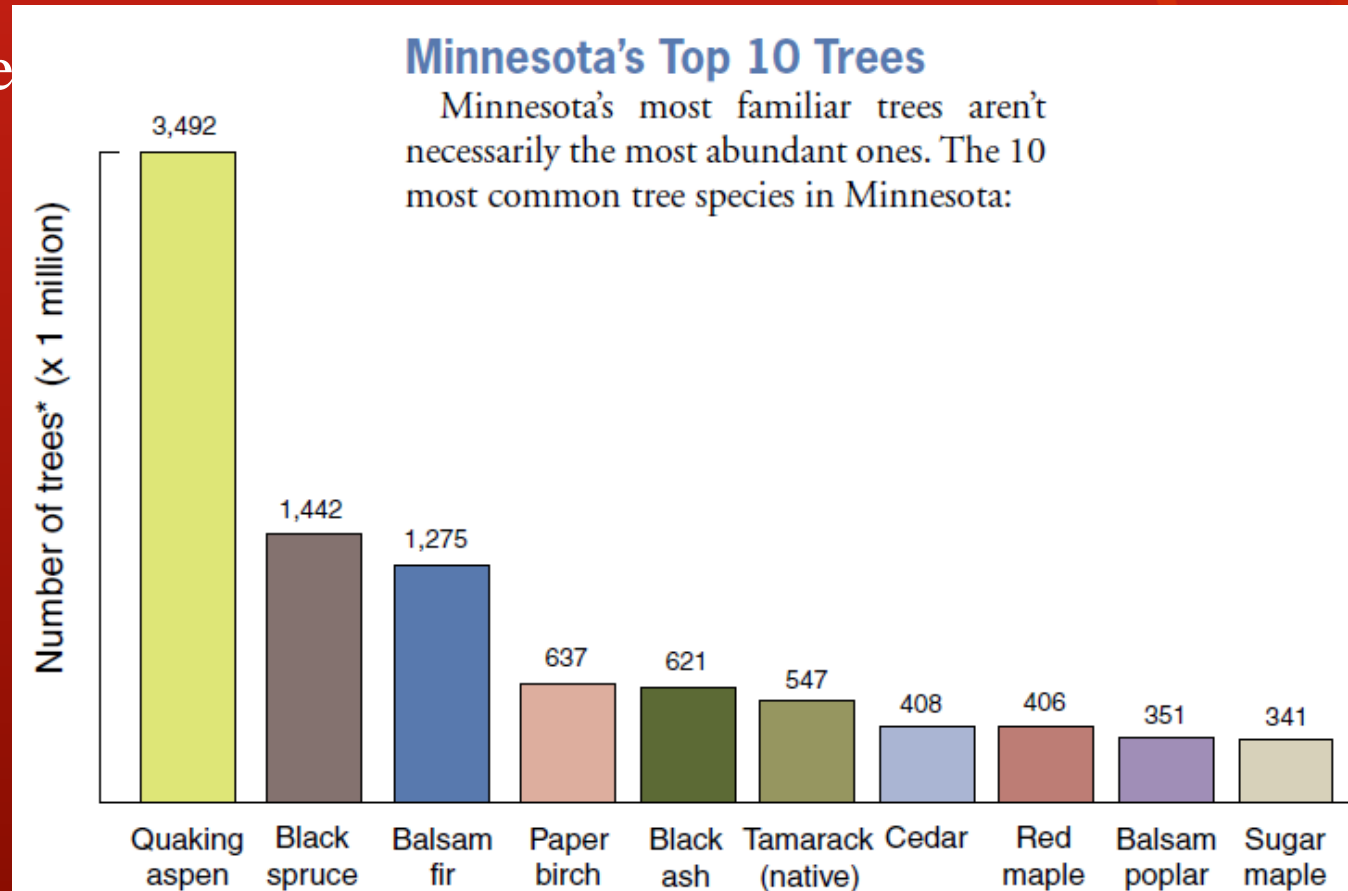
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12 billion when
saplings are
counted!

3. What is the most common tree in Minnesota?

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*Stems more than 1 inch diameter, 2002

Data courtesy of Andrew Finley, Department of Forest Resources, College of Natural Resources, University of Minnesota

4. What is the state tree of Minnesota?

- a) Red Pine
- b) White Pine
- c) White Oak
- d) Black Spruce

Also called the
Norway Pine



Dendrology

- 'Dendro-' from the Greek word meaning tree
- '-ology' meaning the study of
- **Dendrology** is the study of trees and includes taxonomy, silvical characteristics, ranges, morphology, and ecology



Vocabulary

- **Taxonomy** is the study of the classification of living things.
- **Morphology** is the study of the shape, general appearance, or form of an organism.
- **Silviculture** is the care and cultivation of forest trees.
- **Ecology** is the study of the relationships between living and non-living things and their environment.

Trees • Alberi • Arbres • Bäume • Arboles



What makes a tree a tree?

- Heights at least 4.5 meters (about 15 feet)
- Single dominant woody stem (trunk or bole)
- Capable of diameter growth
- Perennial plant (present at all seasons of the year)



What makes a shrub a shrub?

- Heights under 4.5 meters (less than 15 feet)
- Multi-stemmed
- Capable of diameter growth
- Perennial plant



Tree Identification

By observing leaves





American Elm Leaf



Common Ash Tree Leaf



Tree of Heaven Leaf



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Conifers vs. Deciduous



Which is Which?



Characteristics of Conifers

- Needle shaped leaves
- Seeds that develop inside cones
- Evergreen – green year round
- Gymnosperm, conifer, softwood
- Examples: pine, spruce, hemlock, fir



Examples of conifers



Balsam fir



Red pine



Douglas fir



Fraser fir



White pine



Scotch pine

Conifer leaves

- Needle like



- Scale like



Conifer needles



Deciduous Tree Characteristics



- Broad flat leaves
- Lose all leaves each year in the fall
- Angiosperm (flowering plants), broadleaf, hardwood
- Examples: oak, maple, beech, aspen, ash

Deciduous examples



Red oak



Elm



Honey locust



Red maple



Black locust



White birch



beech



Crimson king

Exceptions

- Larch trees have cones and needles, but lose their leaves each year.
- Yew trees have needle shaped leaves and are evergreen but have berries not cones.
- Holly trees have broad flat leaves and it is evergreen.

Leaf characteristics-deciduous

- Leaf arrangement: whorl, alternate, opposite
- Leaf type: simple or compound
- Leaf edge: entire (smooth), lobed (projection), toothed (serrated)
- Leaf texture: hairy, waxy, rough, smooth, thick, thin, etc.
- Leaf shape: various



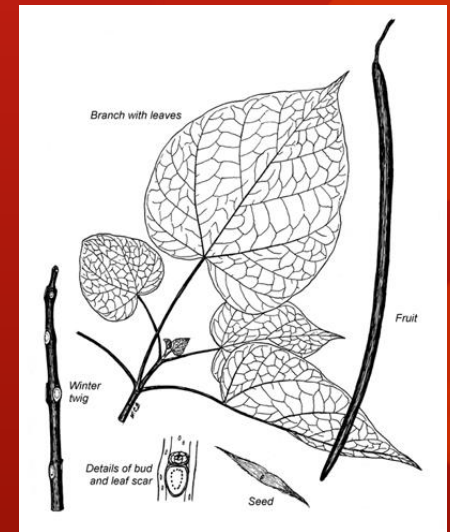
Leaf Arrangement



alternate



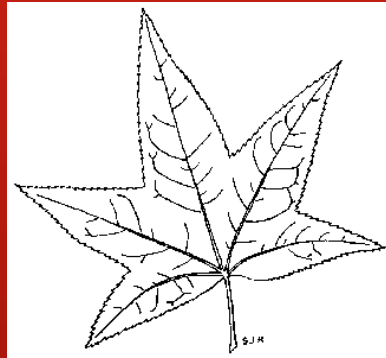
opposite



whorl

Leaf Type

Simple vs. Compound



Simple

- Only one leaf blade
- Joined by its stalk to the woody stem
- Examples: maple, oak, aspen, beech

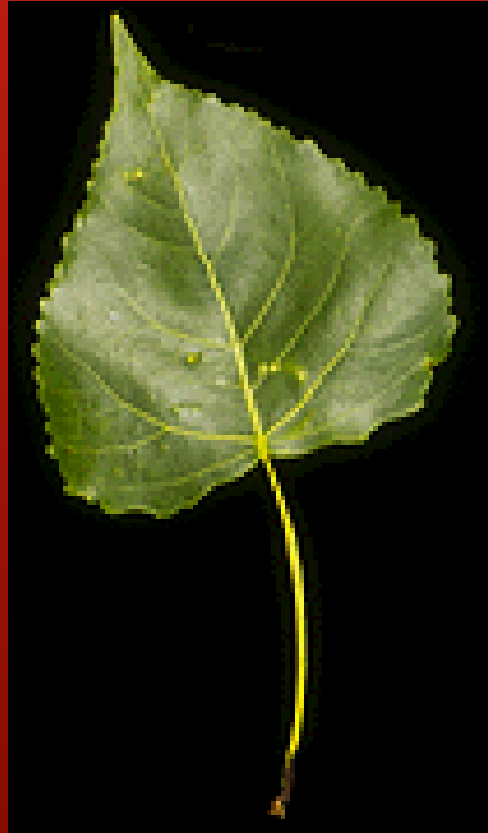
Compound

- Made up of several leaflets
- Leaflets are joined to a midrib that is not woody
- Examples: ash, walnut, sumac

Simple or Compound?



What is the leaf type?



Leaf Edge

Lobed , smooth, toothed?



Leaf Texture



Leaf Shape



More characteristics to ID trees

- Bark
- Twigs
- Flowers
- Fruits/Seeds
- Cones
- Overall shape



Bark

- Color
- Texture
- Furrows
- Age
- Thorns



Twig clues

- Leaf scars aka buds are the places where the leaves used to be attached
- Size color and shape of buds also useful to ID trees



Flower clues

- Shape
- Color
- Texture
- Size



Fruits & Seeds



Common Ash
Tree Leaf



Sugar Maple
Leaf



European Olive
Tree



Common Oak
Leaf

Cones



Overall shape



Common Scientific

NAMES

- Used in day to day conversation
- Usually based on a characteristic or region of origin
- Sometimes named after the person who studied the species
- Often confusing
- Each species is uniquely identified
- Made up of two parts, the genus and species
- Groups similar individuals
- More accurate

Scientific names

- Two part name
binomial
nomenclature
- Made up of the
genus and the
species
- Written in italics
- Example:
Pinus strobus





Trees

Tree image © 1992
Grollier Incorporated

Eastern Redcedar

○ Juniper



Red Pine

- Norway Pine



Eastern White Pine



Jack Pine



Jack Pine (*Pinus banksiana*)

Black Spruce



White Spruce



Black Spruce vs. White Spruce



Douglas Fir



Black Ash



Green Ash

● Red Ash



White Ash



Boxelder

- Canadian Maple



Sugar Maple



Red Maple



Silver Maple



Bur Oak



Bur Oak
Quercus macrocarpa

White Oak



Northern Red Oak



White Poplar



American Elm



American Elm



Korhnak



Martin

Paper Birch

- Canoe Birch



Ironwood



Willow

- Black Willow
- Pussy Willow



Balsam Poplar



Bigtooth Aspen



