

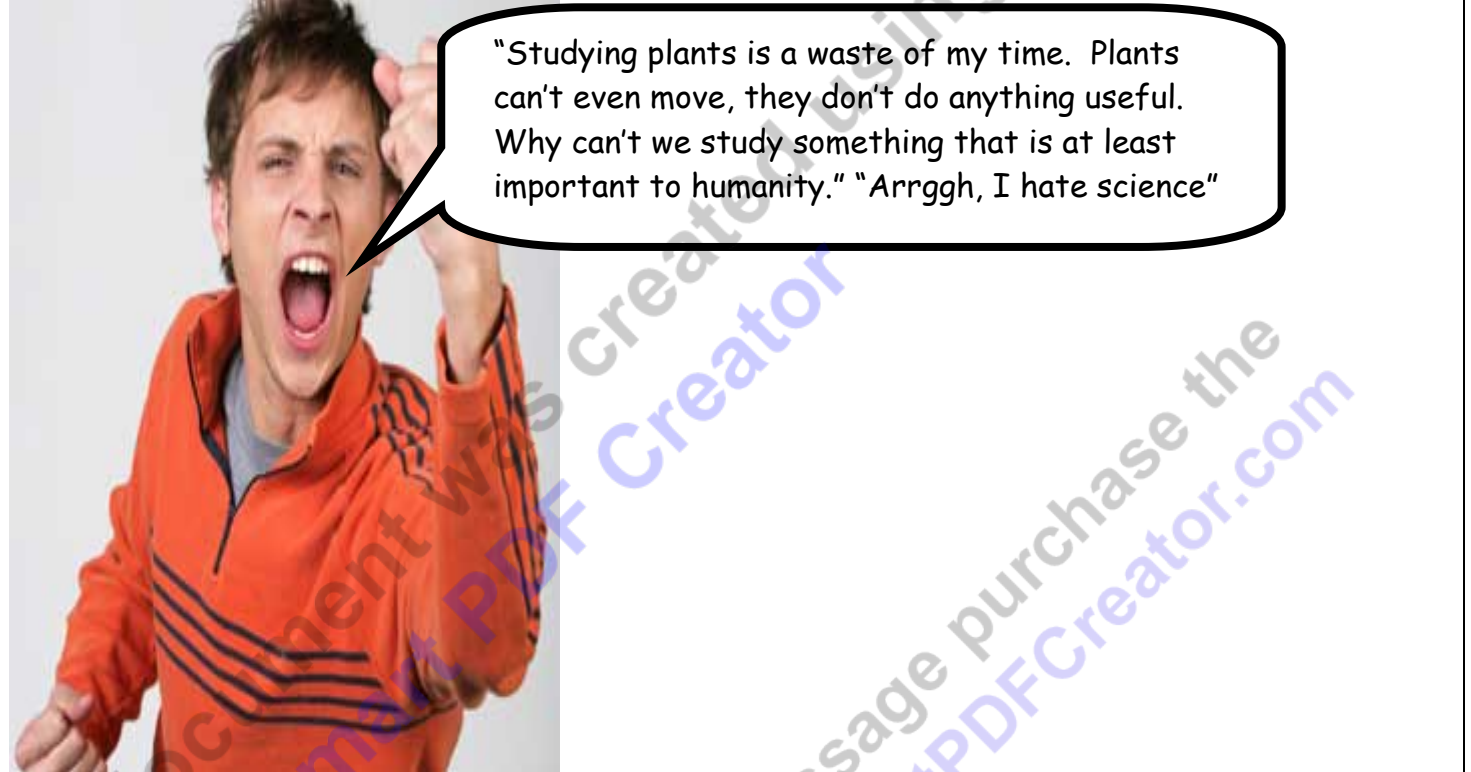
# THE MIGHTY PLANTOFE

(Opportunity for Excellence)

Name: \_\_\_\_\_

Due: \_\_\_\_\_

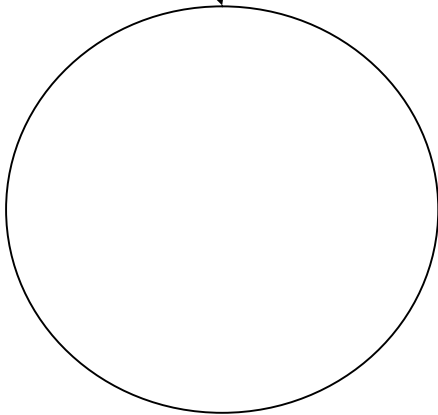
Please respond intelligently to the comment from the angry student below.



Please place the following pictures in the correct order 1-7 according to their evolutionary history. 1 is the earliest, 7 is the latest. Provide a name for the ones you know underneath.

<p><i>Pinus Strobus L.</i> Wernathskiefer.</p>	<p>(First Vascular Plants)</p>		
		<p>(First Seed Plants)</p>	<p>Draw a hornwort in the space below.</p>

What is Algae? Why is Algae so important to our world?  
Draw algae here



What is a lichen? How does a lichen represent a mutualism between two species? Can you name the types of lichen below?



Why do most bryophytes live close to the ground and in moist environments?

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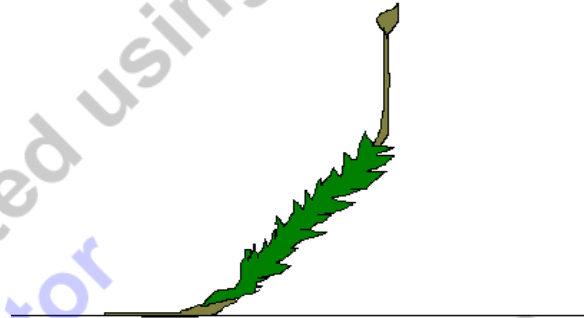
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Please identify, and then label the bryophyte below?



Please correctly name the type of non-vascular plant in the boxes under the picture.

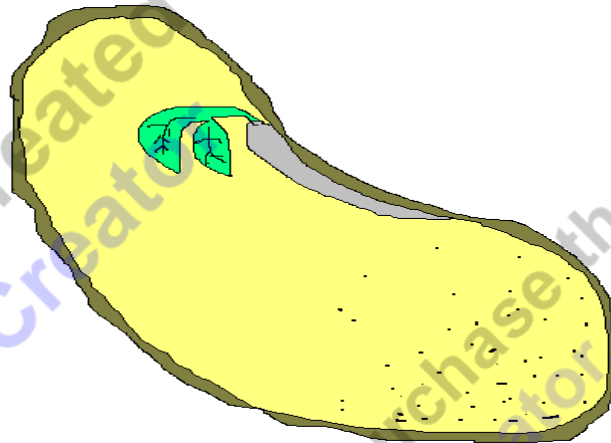
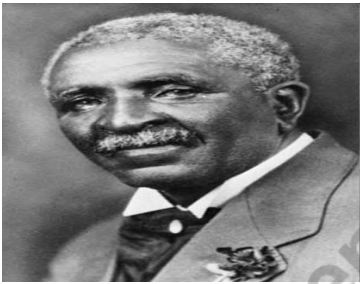


Draw a seedless vascular plant in the box below? How do these types of plants reproduce?

Blank space for drawing and text.

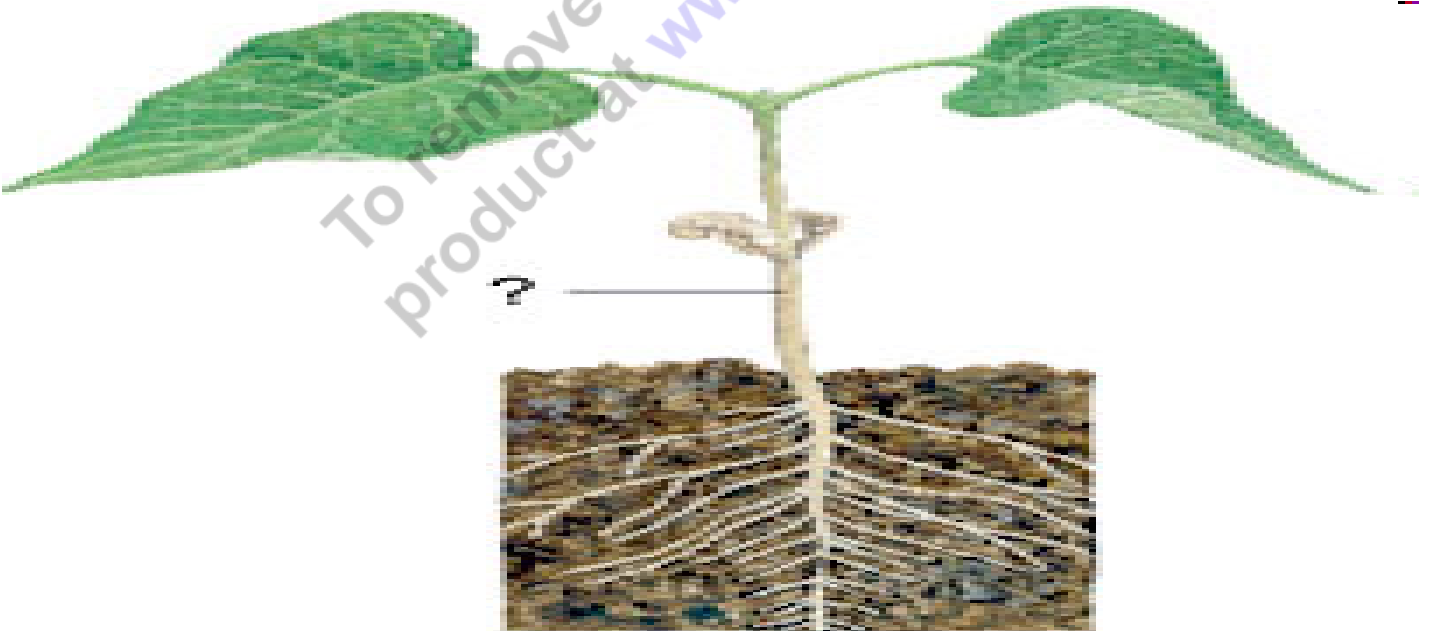
Please check off the box when each is covered below.

- ◇ What does the picture below represent? -Provide a description.
- ◇ What are some of the parts to the picture below? - Label them.
- ◇ What are some ways to break its dormancy? - Provide them.
- ◇ What do you know about the person below? - Provide information.



Please label and provide a brief description of the following terms associated with a young plant. Check off each term after you have described and labeled them. Make sure your arrow accurately points to that plant feature.

- ◇ True Leaves
- ◇ Cotyledons
- ◇ Epicotyl
- ◇ Hypocotyl
- ◇ Radicle
- ◇ Seed Coat

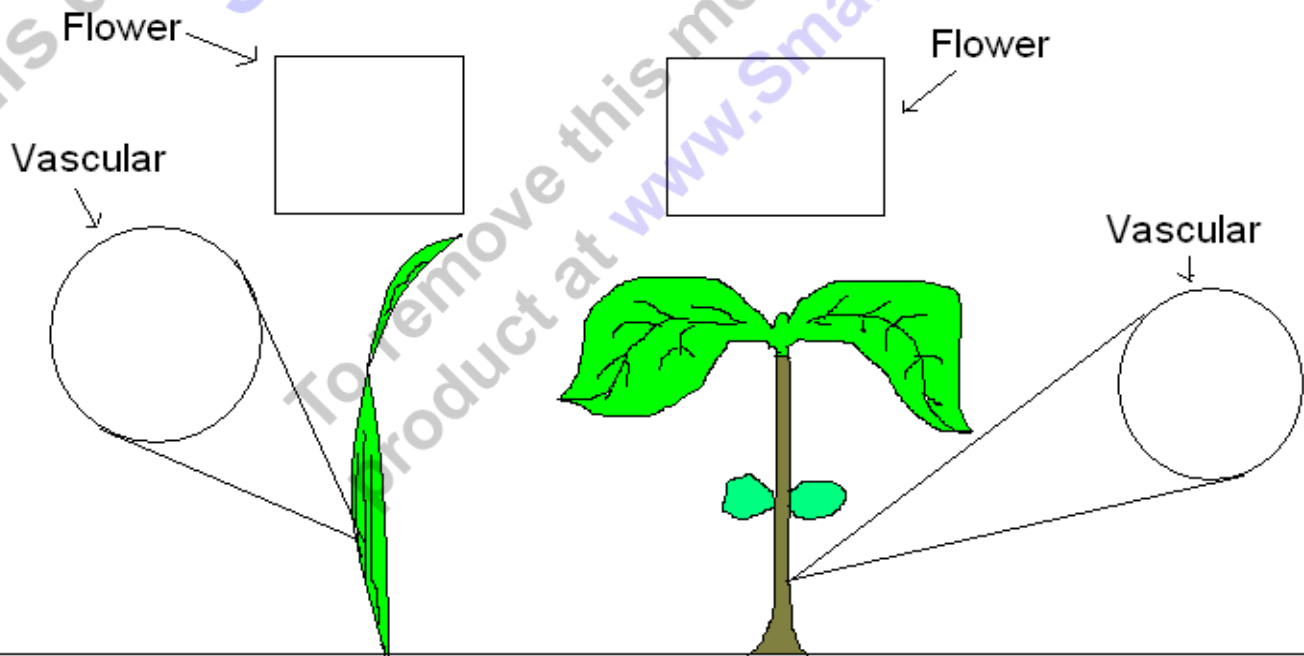


Please accurately label the parts of a stem on the picture below. Please check off each box after you have used the term.

◇ Node      ◇ Internode      ◇ Petiole      ◇ Stem



Which plant below is a dicotyledon, and which is a monocotyledon? Explain using the pictures, boxes, and circles to describe the differences between the two.

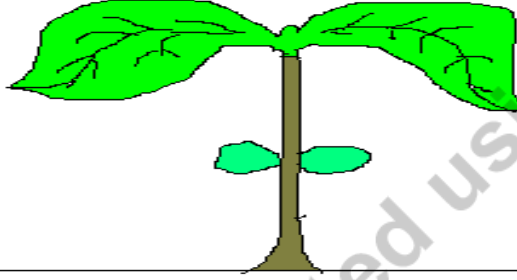


Please draw the root type below the surface.

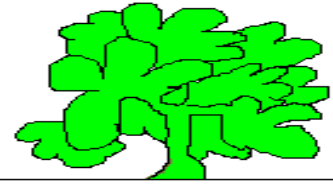
Fibrous



Taproot



Tubercular



Root Hairs



Which of the following is not a reason why plants need water?

- 1 A) Water is needed for photosynthesis.
- 2 B) Keeps plants rigid and not wilted.
- 3 C) Water cools the plant down during warm weather.
- 4 D) Water carries dissolved nutrients and minerals throughout plant.
- 5 E) Water needs to travel from the leaves to the roots.

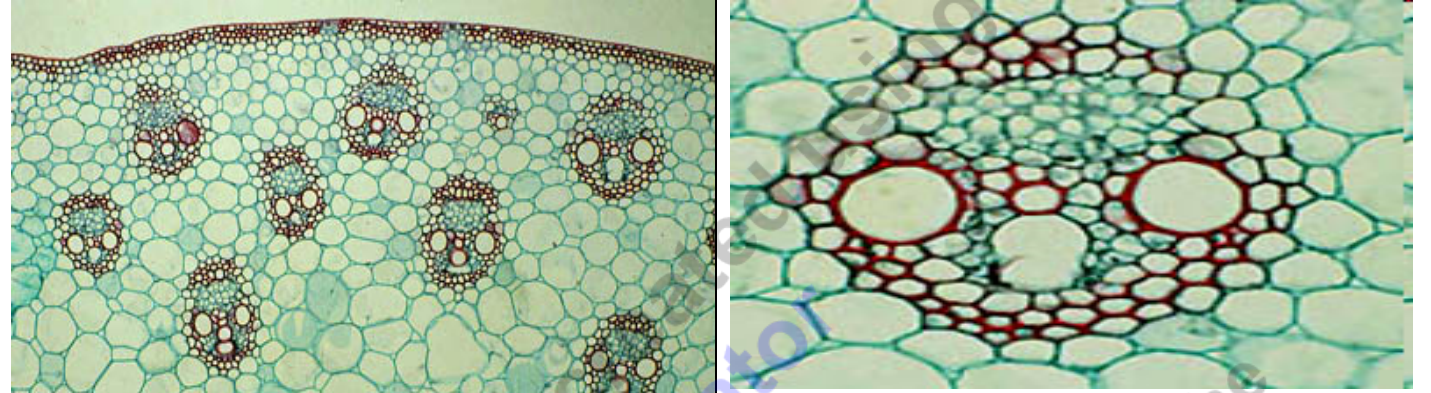
Please describe how the plant below does the following.

- ◇ Moves
- ◇ Stem Elongation
- ◇ Promotes Growing (Root tips)
- ◇ Opens Stoma in leaves
- ◇ Promotes fruit ripening

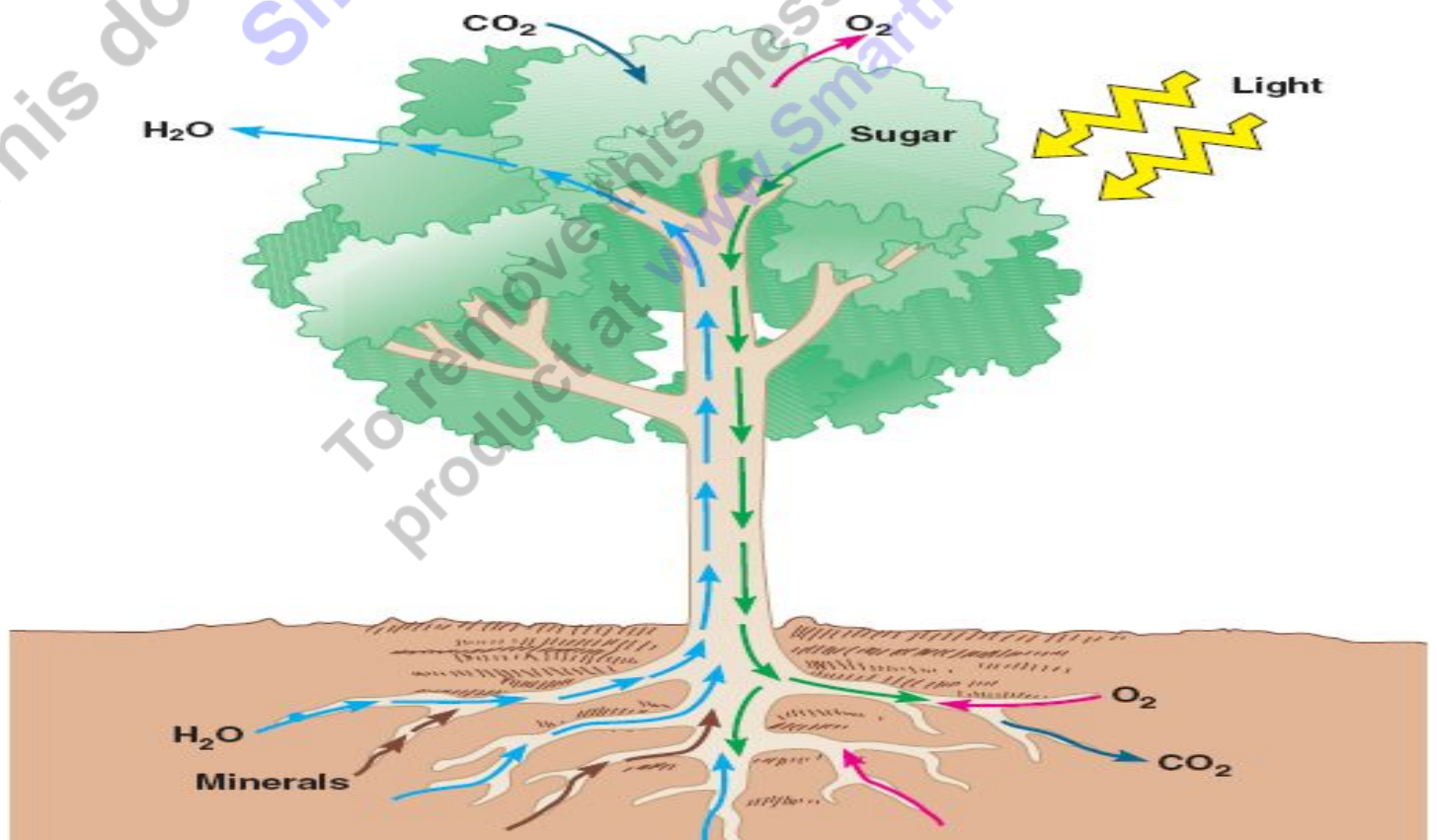


Please label the cross section below with the following terms. Is the cross section a monocot or dicot? How can you tell?

◇ Ground Tissue ◇ Dermal Tissue ◇ Vascular Tissue ◇ Vascular Bundle ◇ Xylem ◇ Phloem



Please describe the roles of xylem and phloem using the picture below. Don't forget to discuss the bucket hanging off of the tree.



Please cross off each diamond after that questions has been answered.

◇ Please label the cross-section of the tree below with the correct terms.

◇ Cambium ◇ Pith ◇ Sapwood ◇ Heartwood ◇ Inner bark ◇ Outer bark

◇ Please calculate the trees age by adding the years from the outside in. The tree was just cut.

◇ Assume the tree was just cut, What year showed the most growth \_\_\_\_\_

◇ Assume the tree was just cut, What year showed the least growth \_\_\_\_\_

◇ What is the science of dating past events by using annual tree rings called? \_\_\_\_\_

◇ Please put a  $\ominus$  symbol on the non-living part of the tree. (old xylem).

◇ Put a large  $\Delta$  symbol on the tree where wood formation begins in a young tree.

◇ Put a large  $\odot$  symbol on the part of the tree that provides protection.

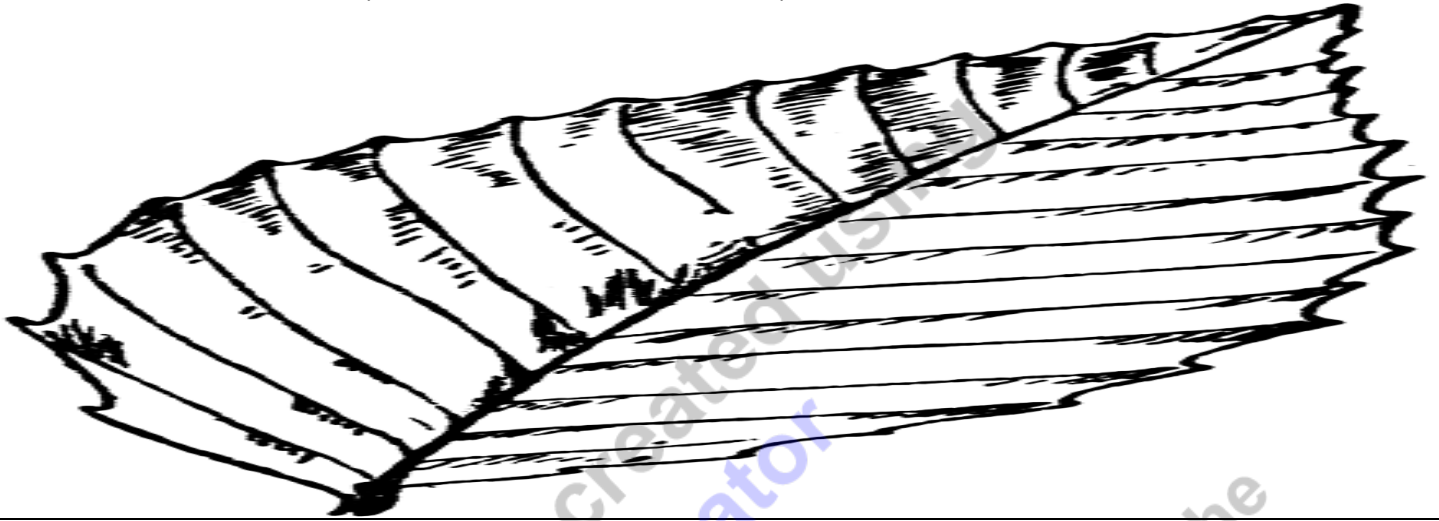
◇ Put a large \* symbol on the part of the tree that makes new tissues.

◇ Put a large X symbol on the living wood that conducts water with xylem.

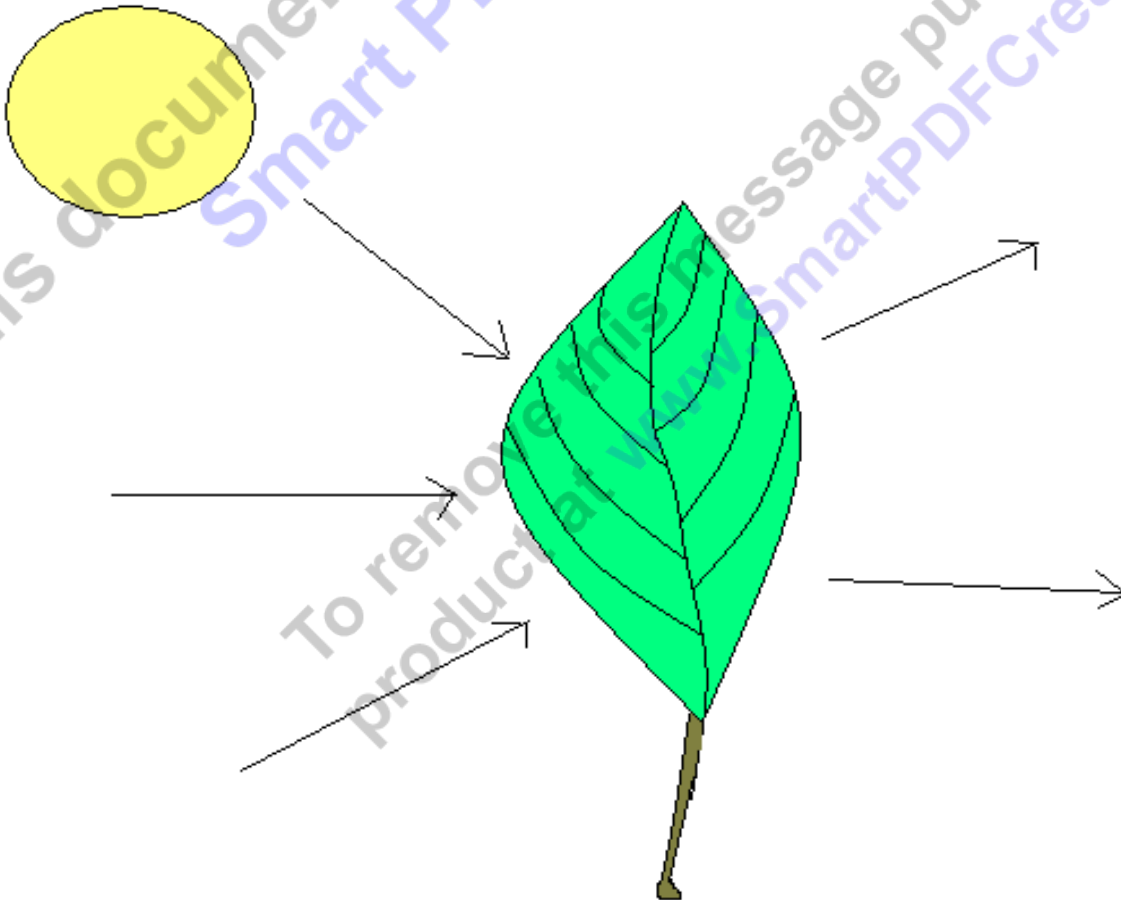
◇ Put a large # symbol on the part of the tree made of living tissue that contains the phloem.



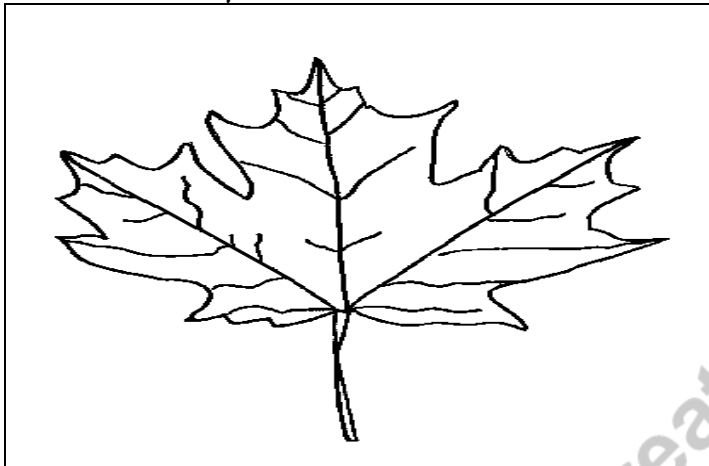
Define a leaf in the space below. You are only allowed to write on the leaves veins.



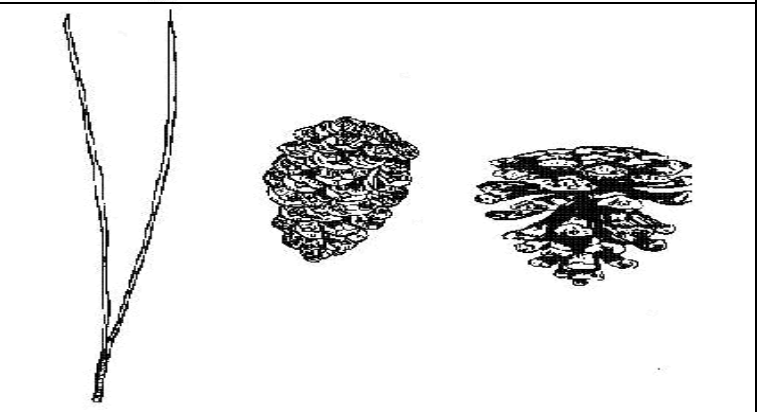
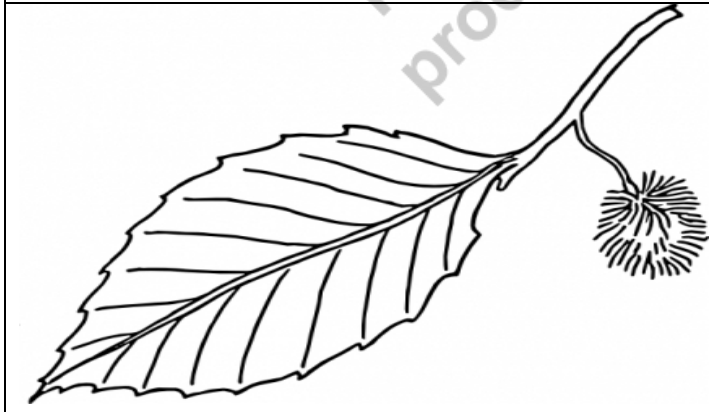
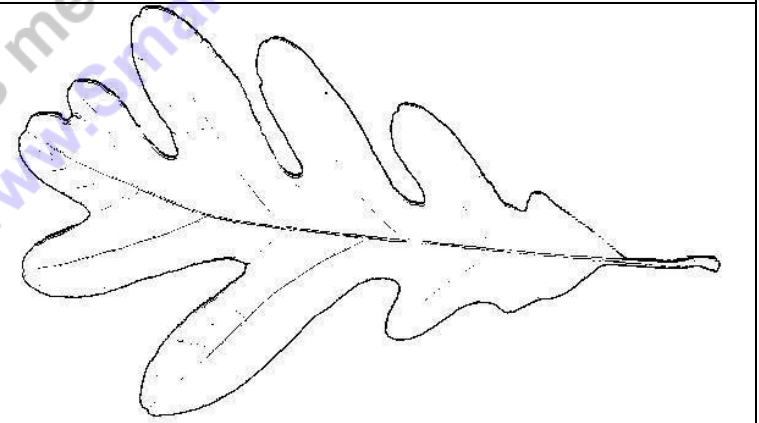
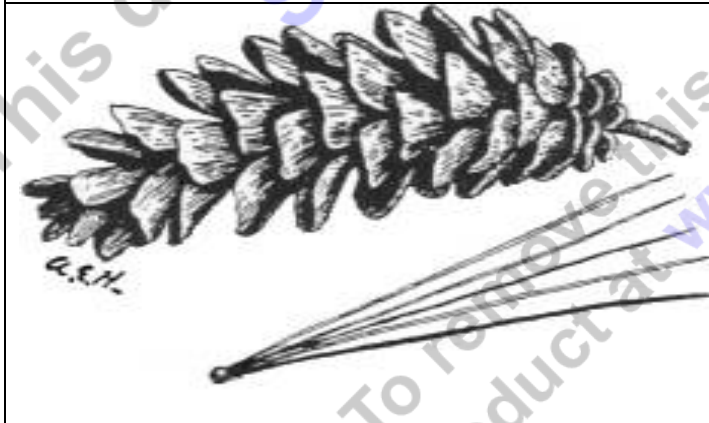
- ◇ Please add the correct terms next to the arrows to show what goes into and out of a plant when it does photosynthesis.
- ◇ A strong answer will provide parts of the photosynthesis equation.
- ◇ Make a reference to which arrow best represents the process of transpiration in plants.

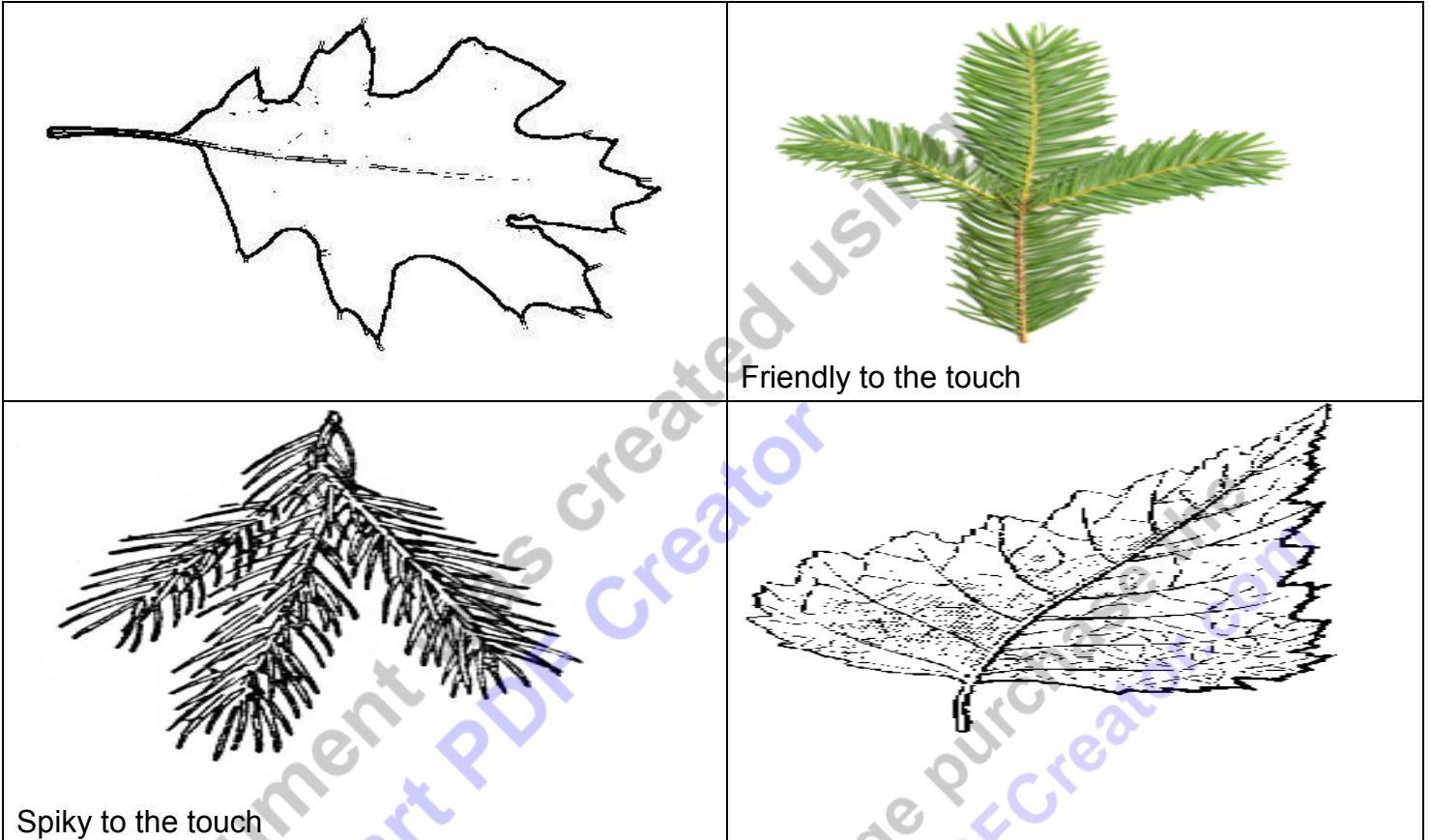


Please identify the tree based on the leaves/needles below. Sizes are not to scale!

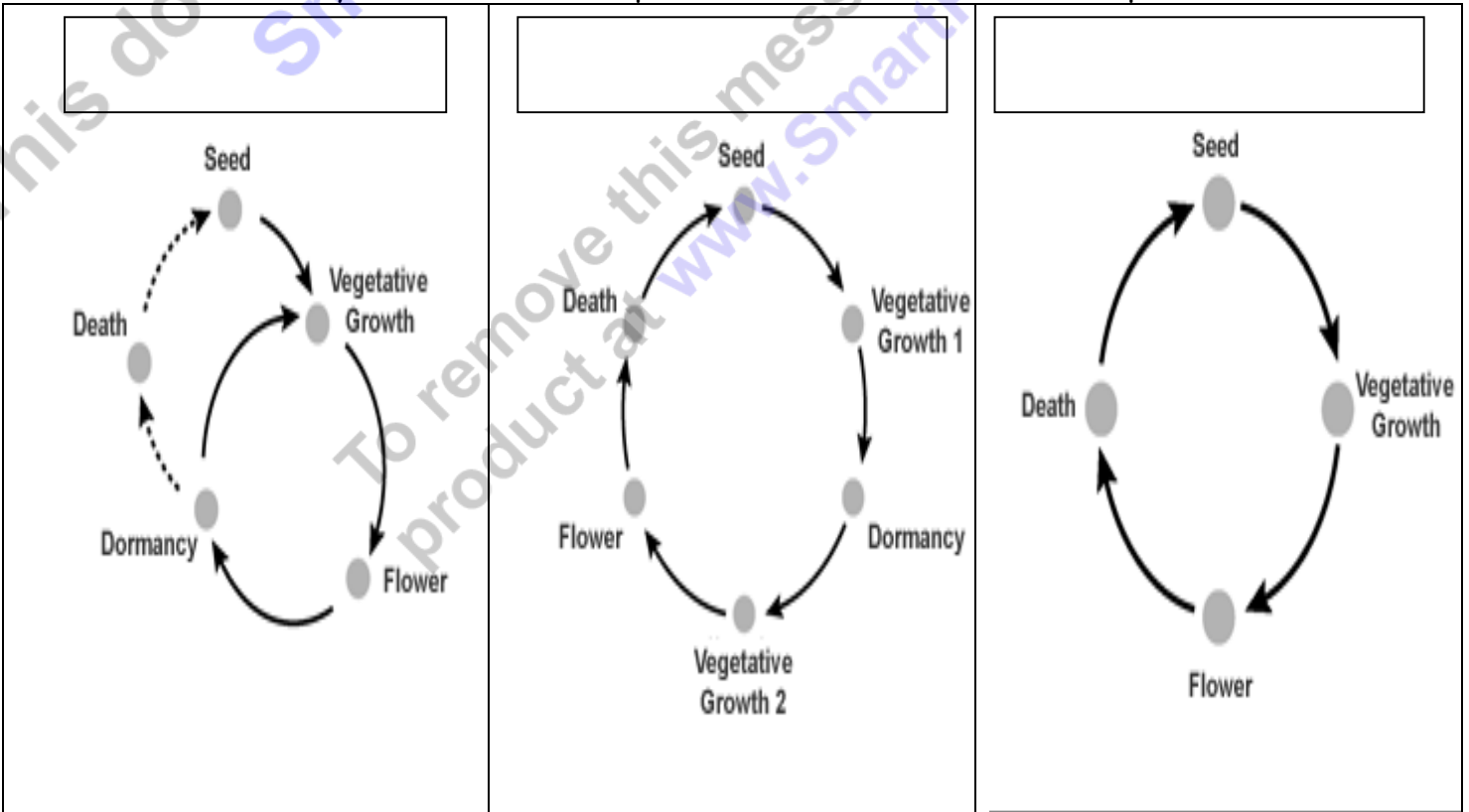


2 lines visible

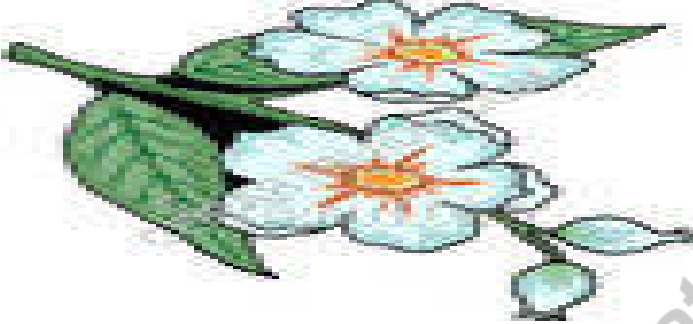




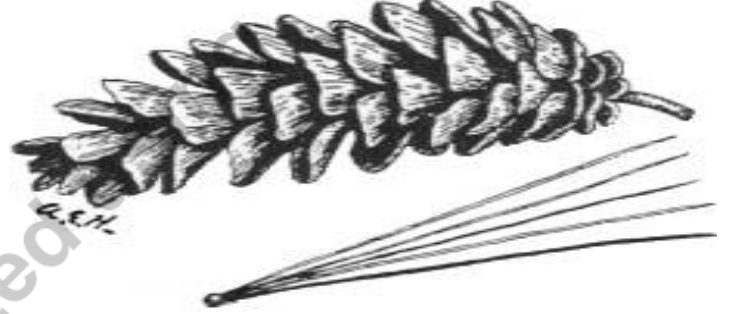
Please label the life cycles below. Which picture is an annual, biennial, and perennial?



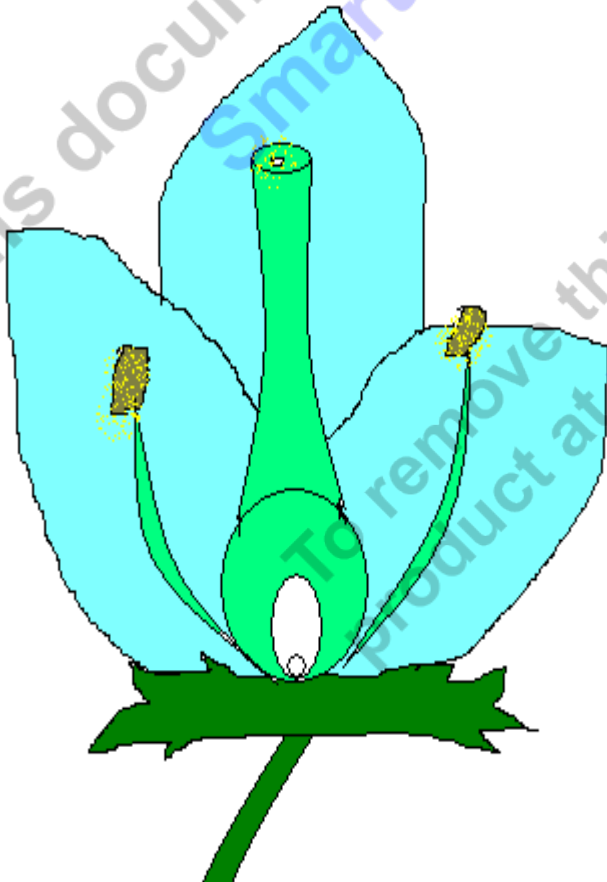
Am I an Angiosperm or a Gymnosperm? Provide a rationale for your response.



Am I an Angiosperm or a Gymnosperm? Provide a rationale for your response.



Please label the following parts of a flower using the template below. Make a reference to the male and female portions of the flower.



Please label the parts of the fruit using the picture below.

- ◇ Endocarp
- ◇ Mesocarp
- ◇ Exocarp
- ◇ What type of fruit is this apple? Why?



GREAT WORK! THIS WAS A DIFFICULT OFE. DO NOT LOSE! PUT IN A SAFE PLACE!

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