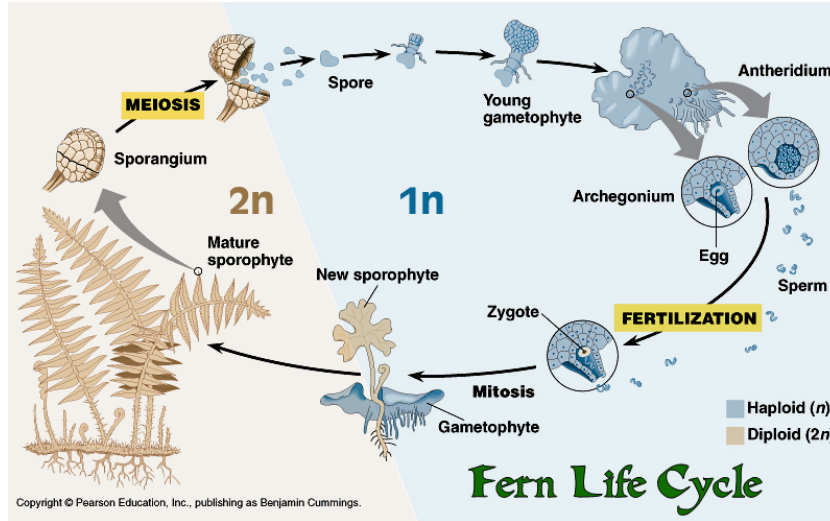


Pterophytes (Ferns) LAB

► Overview

Last week we looked at nonvascular plants (bryophytes and charophytes). This week, we're studying two major plant groups that have well-differentiated vascular tissue (xylem, which transports water and nutrients, and phloem, which transports sugars and other metabolites).

1. The first group, known as **seedless vascular plants**, consists of two phyla: **P. Pterophyta** (ferns, horsetails and whisk ferns).



► Station 1: Examine the transport tissue

	XYLEM	PHLOEM
DRAW		
DESCRIBE STRUCTURE - DOES ONE HAVE THICKER EDGES?		
FUNCTION		

- Question: Why are vascular plants able to grow much taller than non-vascular plants?

Transpiration:

- a. What is transpiration

- b. Why do plants use transpiration?

- c. Are there any cons to transpiration?

- d. Draw the flowers and celery

Draw the Celery

- e. Explain why this experiment is showing transpiration

► **Station 2: Sori**

1. Take a small piece of leaf from the fern indicated by your instructor make a wet mount of the sore, see if you can see the individual spores
2. Draw the sporangium and some spores below.

Magnification: ____x

l) How are seeds different than spores?

► **Station 3: Examine Ferns**

1. Observe and compare the live specimens of ferns.
 - Fern species are often distinguished by the location of the spores under the leaf. The spores are clumped into a structure called a **sori** (sing. *sorus*) on the leaf.

	#1	#2	#3
Drawing			
Location of Sori			

► **Station5: Pollen Grain**

1. Examine the picture of **pollen grains**.

Description of cells (See bold words below)	What they do
1.	
2.	
3/4	

2. Pine pollen consists of a cell and two air bladders for wind dispersal and can travel great distances. Look for germinated pollen with a **pollen tube** that has grown out of the pollen grain. You can make out the tube nucleus inside the pollen tube. The **generative nucleus** is found in its own cell in the pollen grain. Once the pollen tube reaches the female egg in an special female cone, the tube nucleus will divide into two **sperm cells**.

Draw a germinated pollen grain and **label** air bladders, pollen tube, tube nucleus, and generative nucleus.