Essential Questions

1 Fossils show that plants colonized land more than 470 million years ago

Key traits of:

Plants	Algae
Plants	**Charophytes (algae)**

sporopollenin—

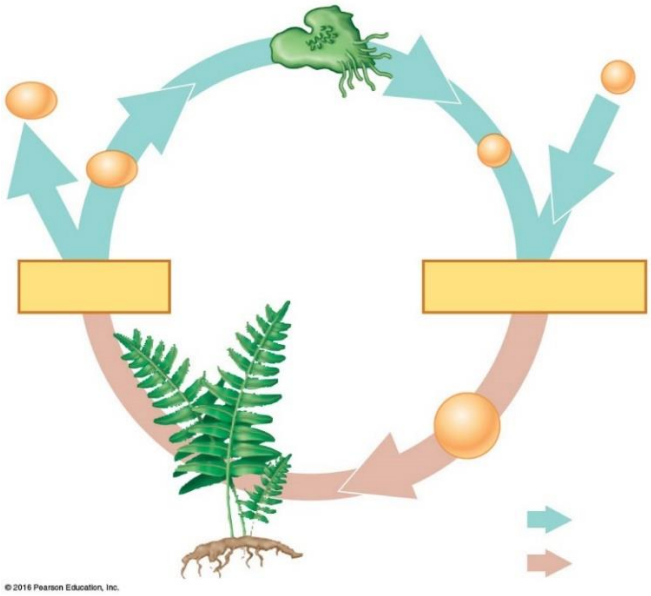
Defining line between plants and algae:

spores—

gametophyte—

sporophyte--

Derived Traits of Plants:
Alternation of generations--



Walled spores produced in sporangia—

Apical meristems—

cuticle—

stomata—

Concept Check 26.1

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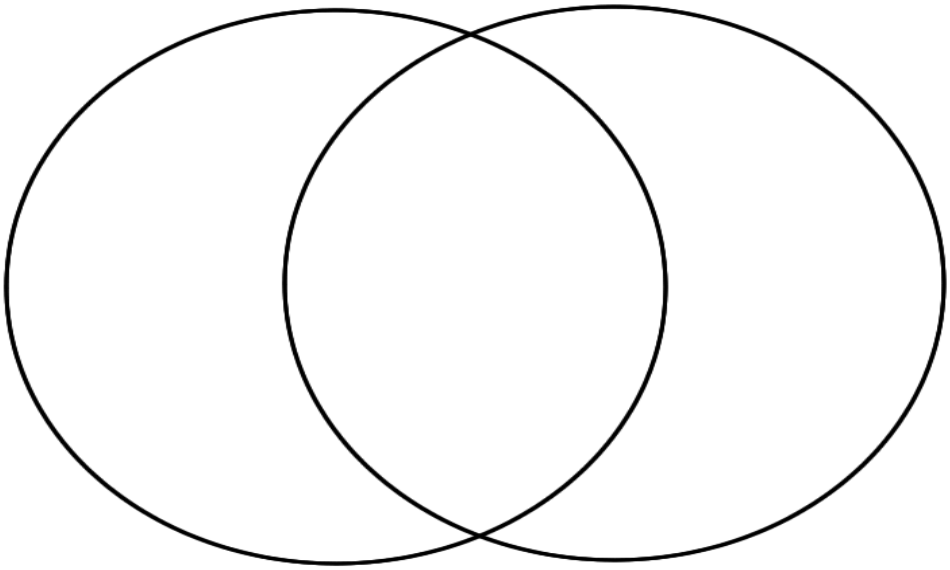
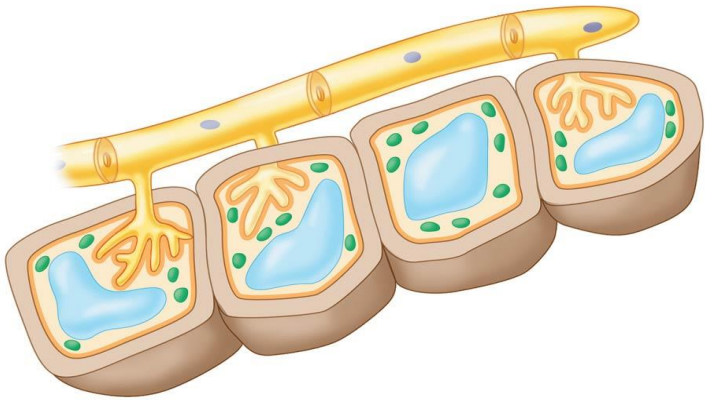
2 Though not closely related to plants, fungi played a key role in the colonization of land

Animals		Fungi



hyphae:

26.13 Although the mushrooms in the top photograph appear to be different individuals, could their DNA be identical? Explain.

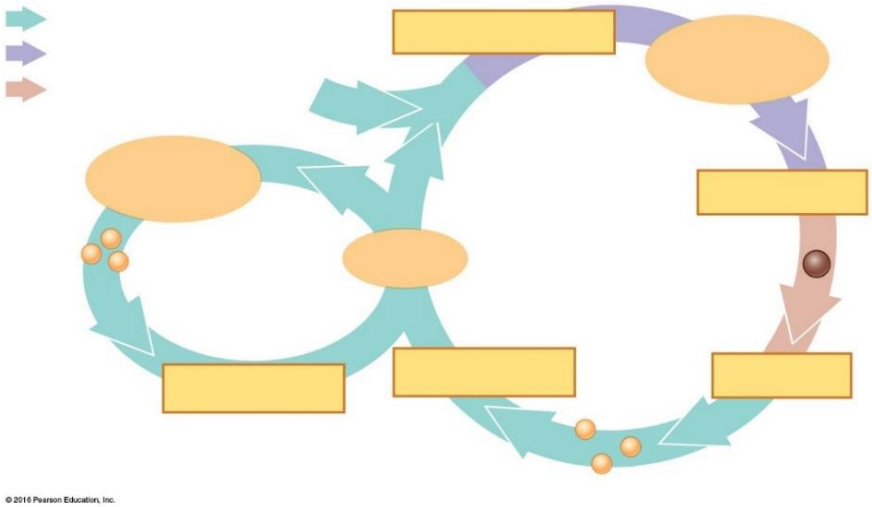
Morphological Adaptations:

Mycorrhizae—(Relationship to plants)

Diversification of Fungi

Known Species	Hypothetical Estimate:

Propogation:



Concept Check 26.2

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★3 Early plants radiated into a diverse set of lineages

Bryophytes	Vascular Plants
xylem— phloem— lignin— roots— leaves—	Diagram:

Concept Check 26.3

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Seeds and pollen grains are key adaptations for life on land

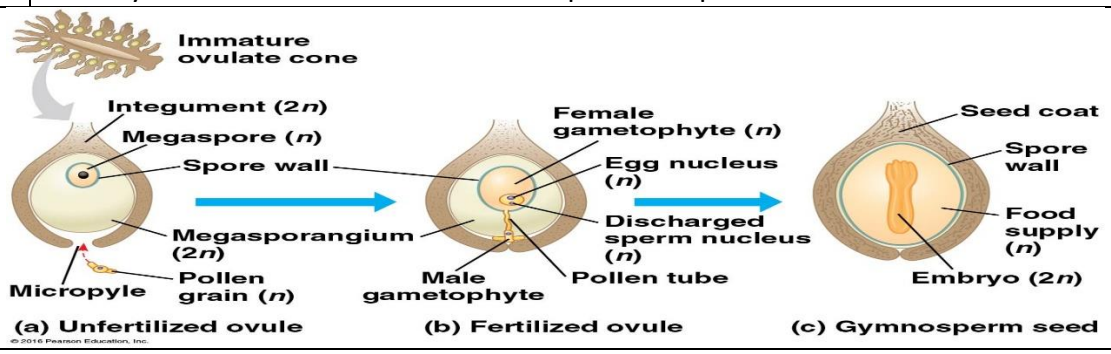
seed—

gymnosperms—

angiosperms—

Female Components ♀	Male Components ♂

26.23 A gymnosperm seed contains cells from how many different plant generations? Identify the cells and whether each is haploid or diploid.



Evolutionary advantage of seeds:

Early Seed Plants and the Rise of Gymnosperms

conifers—

The Origin and Diversification of Angiosperms

F
L
O
W
E
R

fruit—

Angiosperm Evolution:

Concept Check 26.4

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5 Plants and fungi fundamentally changed chemical cycling and biotic interactions

lichen—

Physical Environment and Chemical Cycling: Summary

Biotic Interactions: Summary

INQUIRY 26.31
Do endophytes benefit a woody plant?
What If?

Concept Check 26.5

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