Part 2 Non-Vascular Plants

Name:

Part 2 Lesson 1 Introduction

Non-vascular plants….

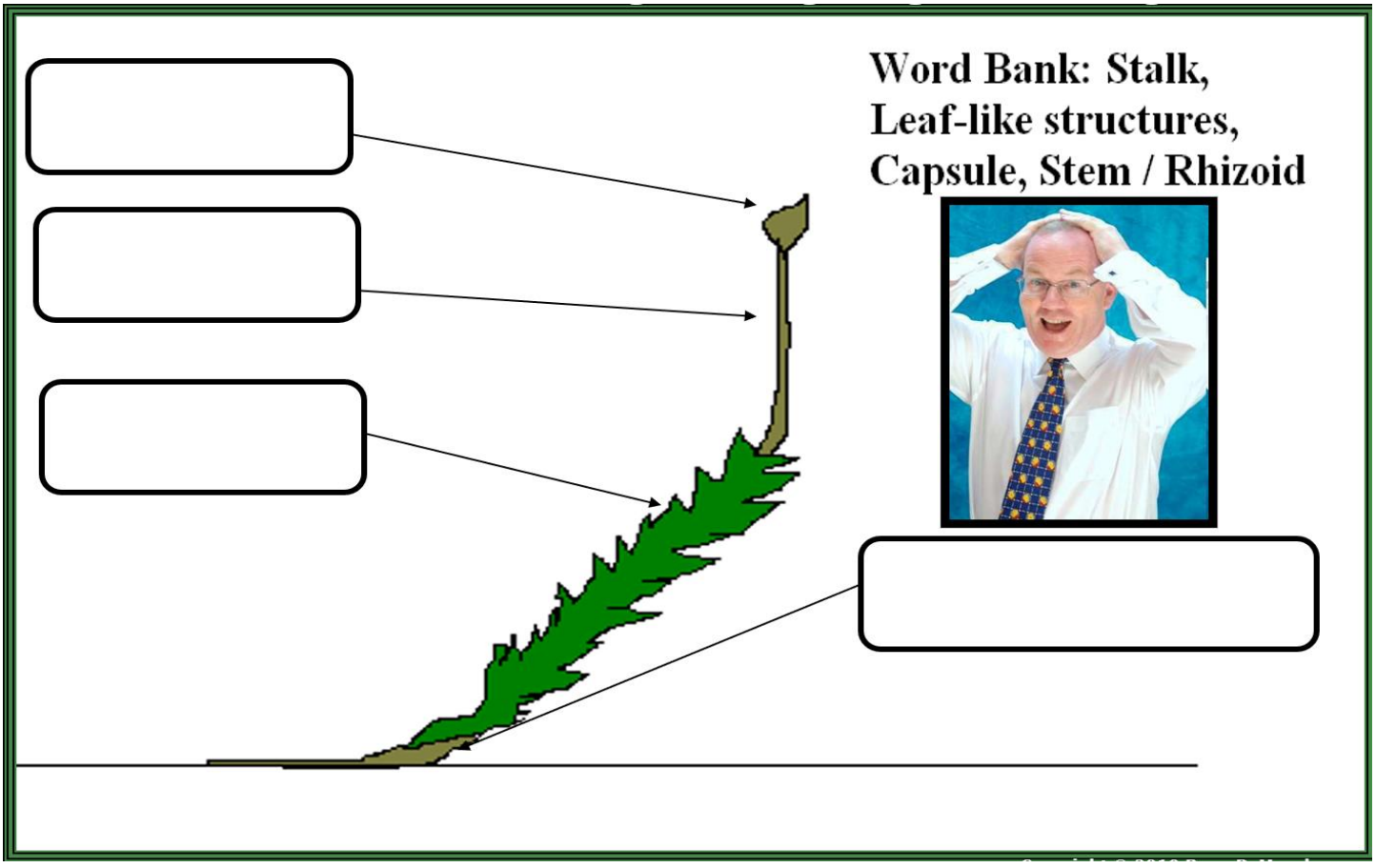
-Lacks tubes (vascular tissues) in the plant to bring water and food up and down.
-Do not produce seeds or flowers.
-Are low to the ground because they lack the woody tissue necessary for support on land.

Activity! Quiz Wiz, Vascular or Non-Vascular Plant. 1-10

1)	2)	3)
4)	5)	6)
7)	8)	9)
10)	*11)	

Part 2 Lesson 2 Bryophyta "Moss"

Bryophytes: Division of non-vascular plants that have no roots, stems, or leaves and transport nutrients using diffusion.



Peat Moss / Sphagnum: The partially decomposed remains of various mosses.
Retains water, adds to the acidity of the soil pH.

Part 2 Lesson 3 Moss Study and Water

Masses of Moss

Partners:_____

Please design your own test to determine how much water can be absorbed by moss. You must collect some form of numerical data in your study.

Problem: How much water can be absorbed by moss?

Hypothesis:_____

Independent Variable:_____

_____

Dependent Variable:_____

_____

Controls:_____

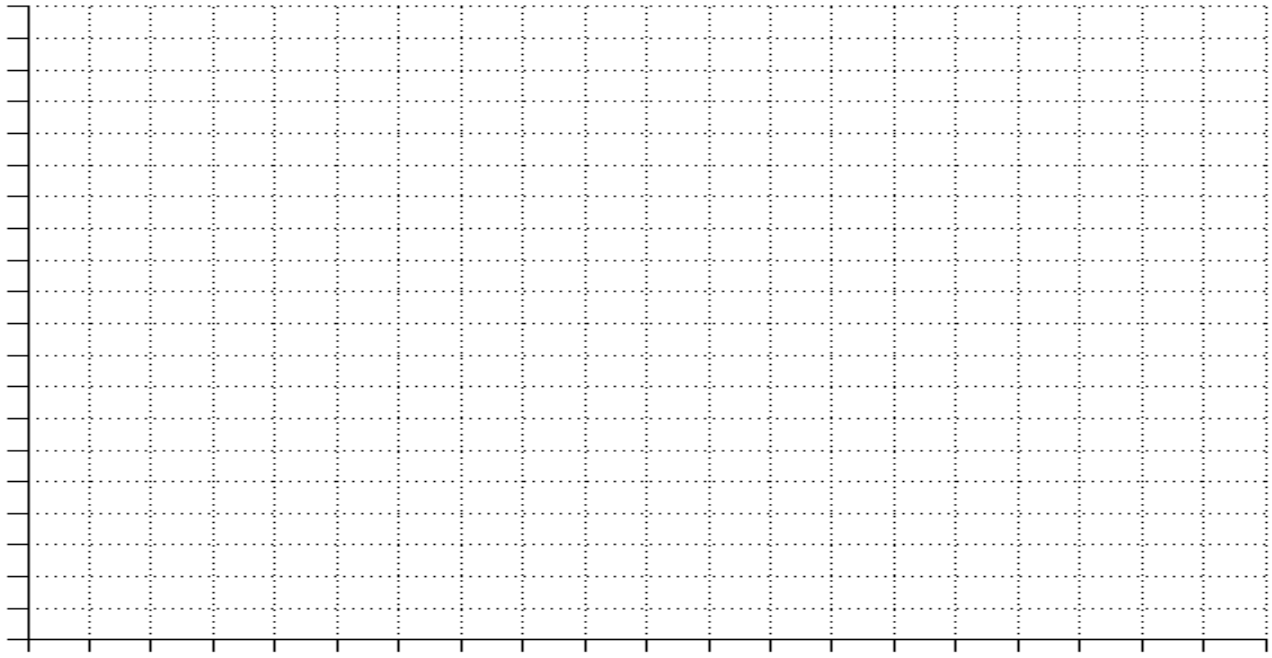
_____

Please describe your set-up with visuals.
(Materials Available) – Sphagnum Moss, digital balance, measuring containers, water, eye-droppers, graduated cylinders, paper towels.

Dry weight of moss (Do first before anything else) _____grams

Spreadsheet to collect data

Graph your findings. Title =



Conclusion based on your data.

Part 2 Lesson 4 Hornworts and Liverworts

Bryophytes include…

- Mosses.
- Liverworts
- Hornworts

Liverworts: A small flowerless green plant with leaflike stems or lobed leaves, occurring in moist habitats. Liverworts lack true roots and reproduce by means of spores released from capsules.

Sketch out the two major types of Liverworts

Branched Type	Leafy Type

Hornworts: Are a group of bryophytes constituting the division Anthocerotophyta. The common name refers to the elongated horn-like structure, which is the sporophyte. As in mosses and liverworts, the flattened, green plant body of a hornwort is the gametophyte plant.

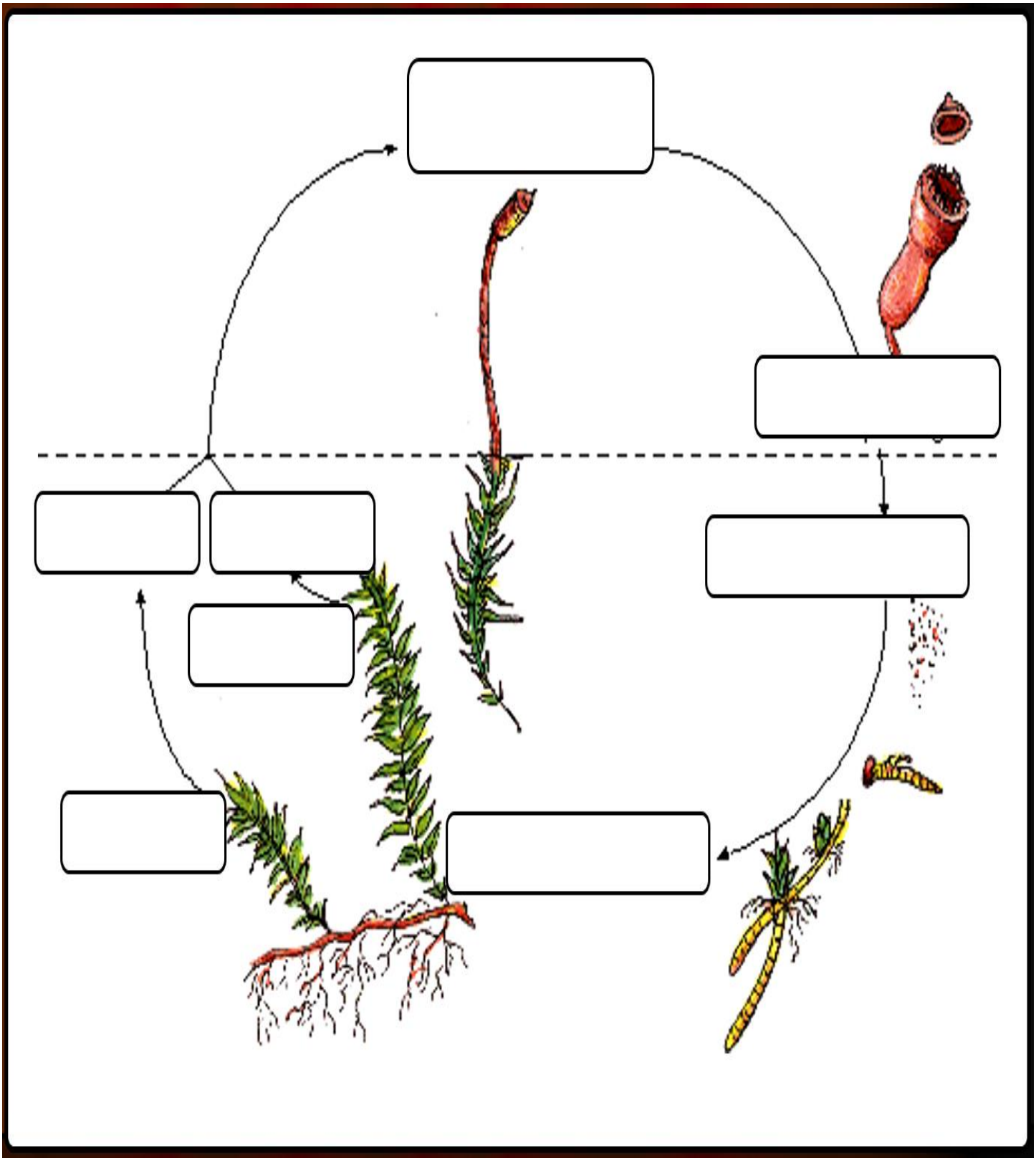
Please sketch out a hornwort below.

The bryophyte lifecycle consists of alternating generations between the haploid gametophyte and the diploid sporophyte.

The two haploid gametes (sperm and egg) fuse, a diploid zygote is formed.

The zygote of bryophytes grows inside the archegonia and will eventually become a diploid sporophyte.

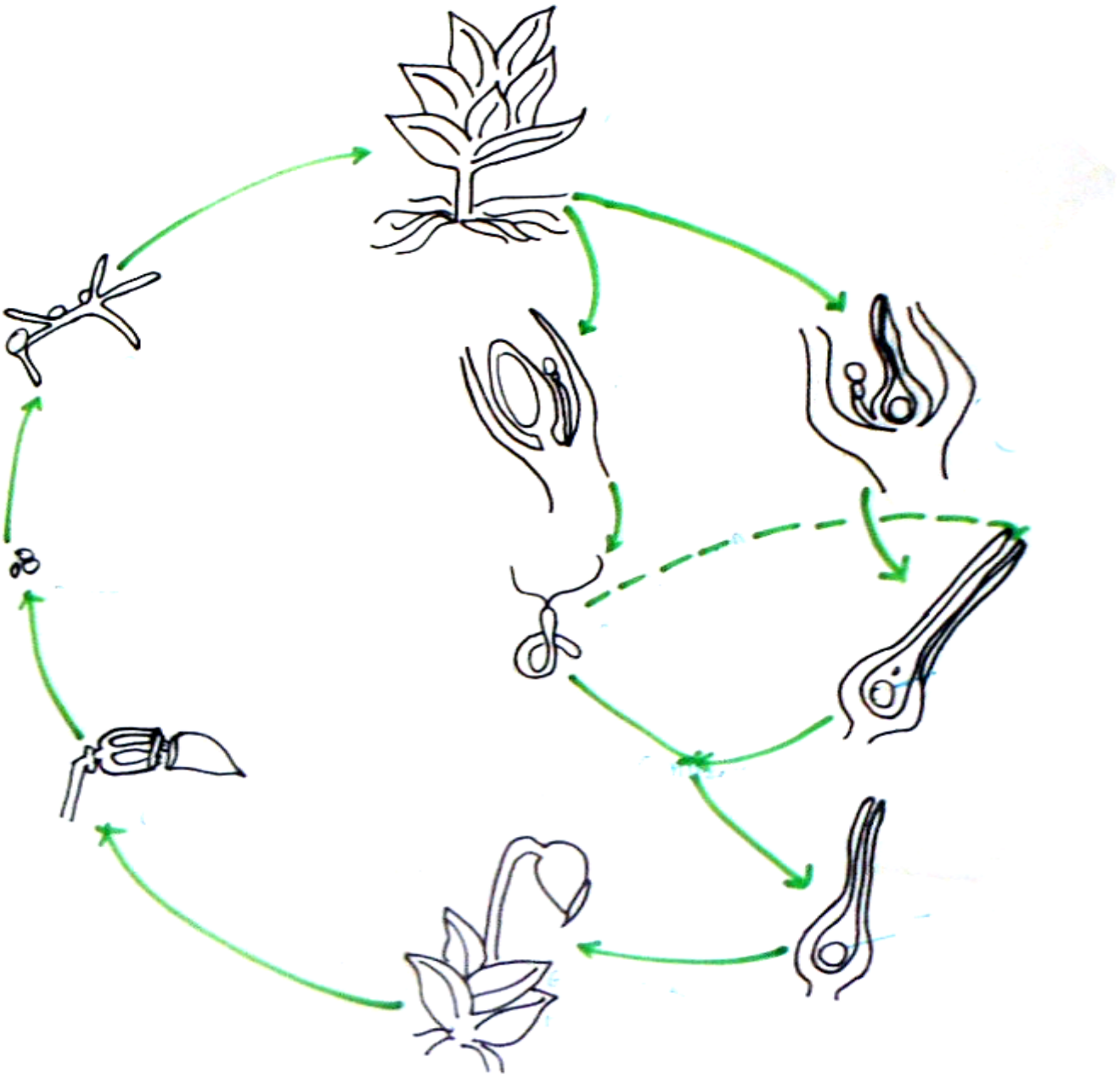
Please fill-in the terms as described in the slideshow



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

Provide some terminology about the life cycle of a seedless vascular plant.



Part 2 Lesson 5 Seedless Vascular Plants

The seedless non-vascular plants consist of the following divisions.

Psilophyta
Lycophyta
Sphenophyta
Pterophyta (Ferns)

Psilophyta species were one of the earliest terrestrial plants during the Devonian Period.

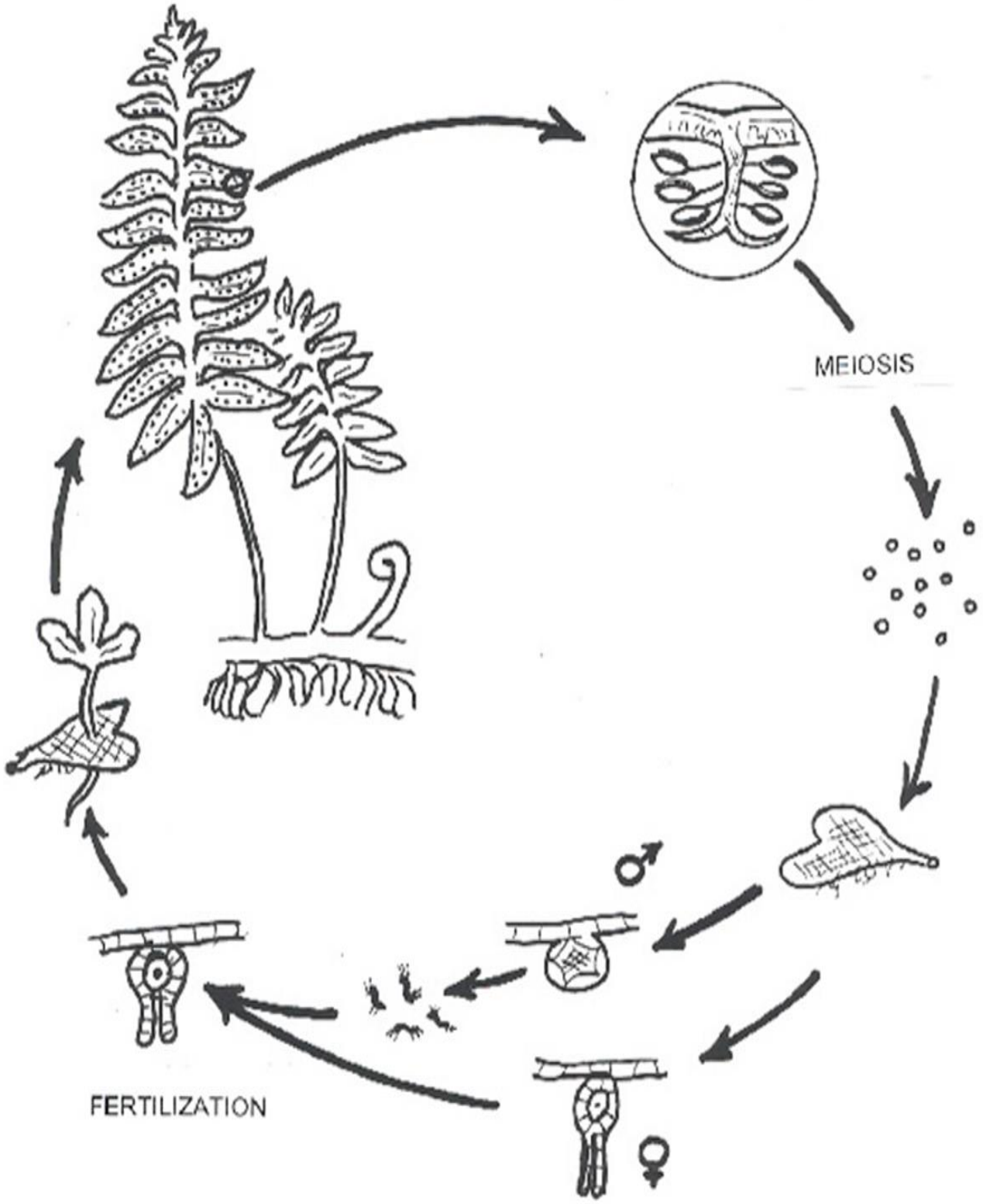
Lycophyta: They have root like structures called rhizomes, and spores are clustered in a cone-like strobilus.

Sphenophyta: Horsetails or scouring rushes. The plant has a scaly stem, it has roots. They reproduce with spores located at the top of the horsetail.

Pterophyta (Ferns): Second largest division in the plant world consisting of 20,000 different species.

Ferns: Flowerless and seedless vascular plant, having true roots from a rhizome, and fronds that uncurl upwards; and reproduces with bisexual spores.

Please provide some terminology about the life cycle of a seedless vascular plant.



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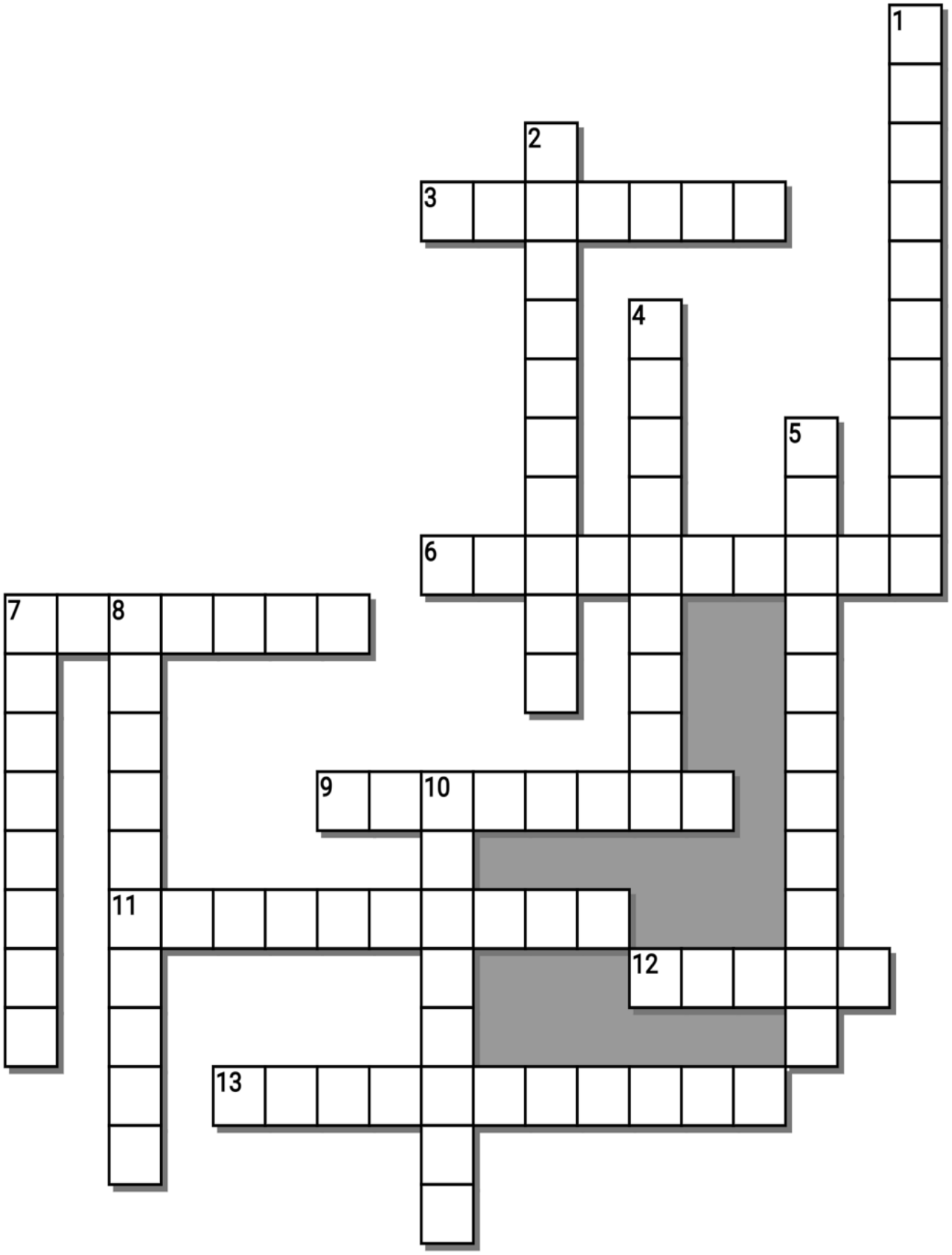
1
2
3
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13

Across

3. Two haploid gametes (sperm and egg) fuse, a _____ zygote is formed.
6. Mosses (B_____: Division of non-vascular plants that have no roots, stems, or leaves and transport nutrients using diffusion.
7. Two _____ gametes (sperm and egg) fuse, a diploid zygote is formed.
9. Non-_____ plants are plants without a vascular system consisting of xylem and phloem. Instead, they may possess simpler tissues that have specialized functions for the internal transport of water.
11. P_____: species were one of the earliest terrestrial plants during the Devonian Period.
12. Flowerless and seedless vascular plant, having true roots from a rhizome, and fronds that uncurl upwards; and reproduces with bisexual spores.
13. S_____: Horsetails or scouring rushes. The plant has a scaly stem, it has roots.

Down

1. A small flowerless green plant with leaflike stems or lobed leaves, occurring in moist habitats. Liverworts lack true roots and reproduce by means of spores released from capsules.
2. The zygote of bryophytes grows inside the archegonia and will eventually become a diploid _____.
4. L_____: They have root like structures called rhizomes, and spores are clustered in a cone-like strobilus.
5. The bryophyte lifecycle consists of _____ generations between the haploid gametophyte and the diploid sporophyte.
7. A group of bryophytes constituting the division Anthocerotophyta. The common name refers to the elongated horn-like structure, which is the sporophyte. As in mosses and liverworts, the flattened, green plant body of a hornwort is the gametophyte plant.
8. P_____ (Ferns): Second largest division in the plant world consisting of 20,000 different species.
10. Peat Moss / S_____: The partially decomposed remains of various mosses. Retains water, adds to the acidity of the soil pH.

----------teacher can remove word bank to make more challenging----------

Possible Answers

BRYOPHYTES, FERNS, HORNWORT, LIVERWORTS, LYCOPHYTA, PSILOPHYTA , PTEROPHYTA, SPHAGNUM, SPHENOPHYTA, VASCULAR, ALTERNATING, DIPLOID, HAPLOID, SPOROPHYTE

Part 2 Review Game

Name:

Part 2 Lesson 6 Review Game

10 pts each, bonus +1 pt, 5 pt wager

TOTALLY NOT TUBULAR	ANYTHING GROWS	-Bonus- FERNLANDIA
1)	6)	*11)
2)	7)	*12)
3)	8)	*13)
4)	9)	*14)
5)	10)	*15)

Final Question =5 point wager Wager=_____ Score=_____

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Part 2 Non-Vascular Plants Name:
Part 2 Lesson 1 Introduction

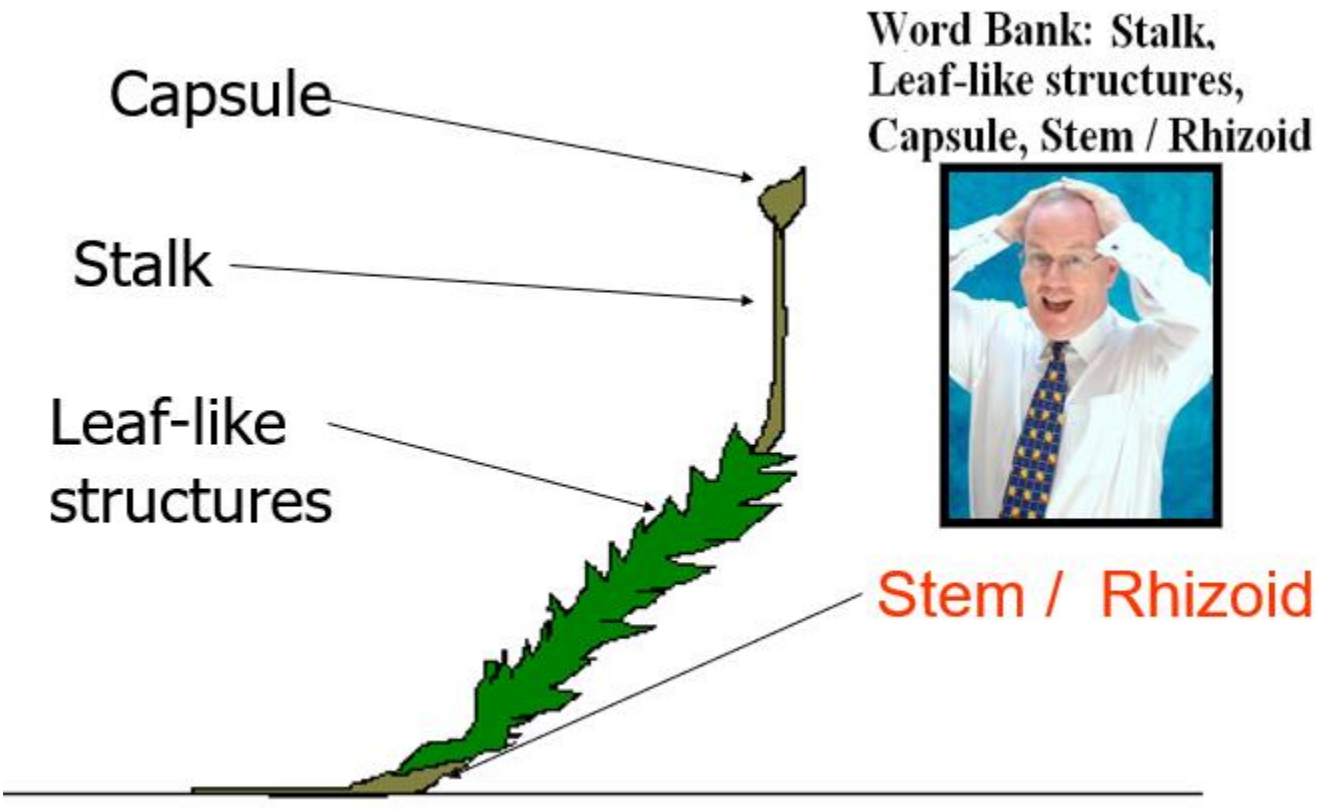
Non-vascular plants….
-Lacks tubes (vascular tissues) in the plant to bring water and food up and down.
-Do not produce seeds or flowers.
-Are low to the ground because they lack the woody tissue necessary for support on land.

Activity! Quiz Wiz, Vascular or Non-Vascular Plant. 1-10

1) Vascular	2) Vascular	3) Vascular
4) Non-vascular	5) Vascular	6) Non-vascular
7) Vascular	8) Non-vascular	9) Vascular
10) Non-vascular	*11) Cabbage Patch Kids	

Part 2 Lesson 2 Bryophyta "Moss"

Bryophytes: Division of non-vascular plants that have no roots, stems, or leaves and transport nutrients using diffusion.



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Part 2 Lesson 3 Moss Study and Water

Masses of Moss Partners:_____

Please design your own test to determine how much water can be absorbed by moss. You must collect some form of numerical data in your study.

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Hypothesis:_____

Independent Variable:_____

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Spreadsheet to collect data

Graph your findings. Title =

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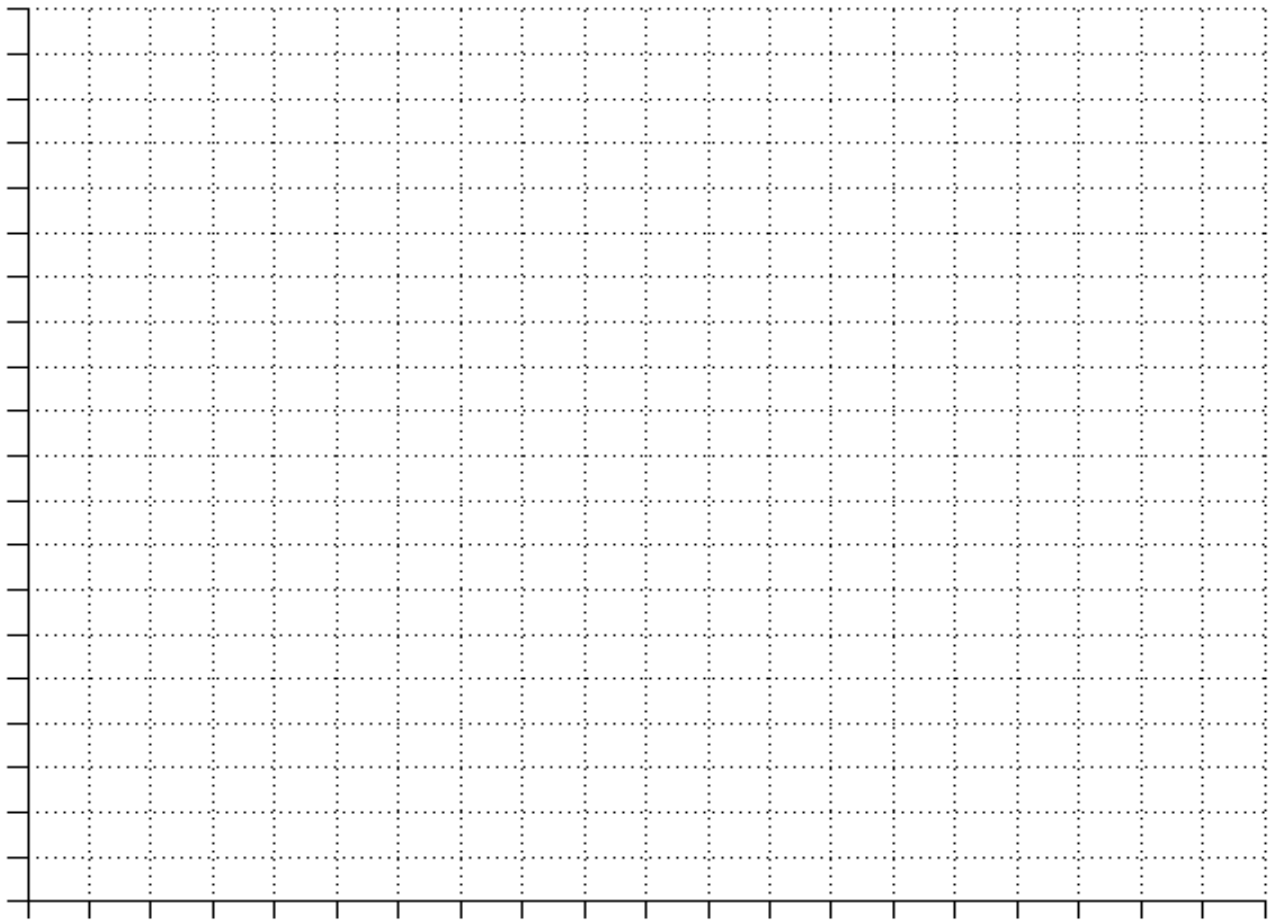

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Mosses.
Liverworts
Hornworts

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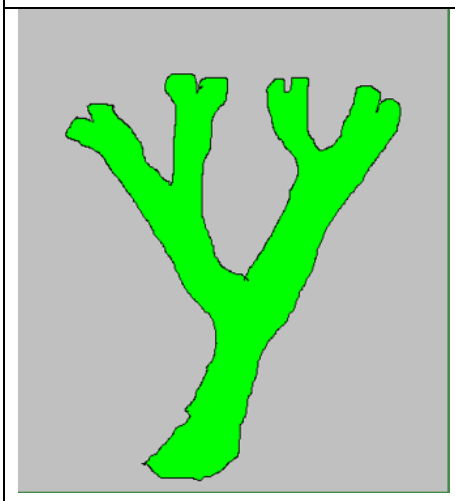	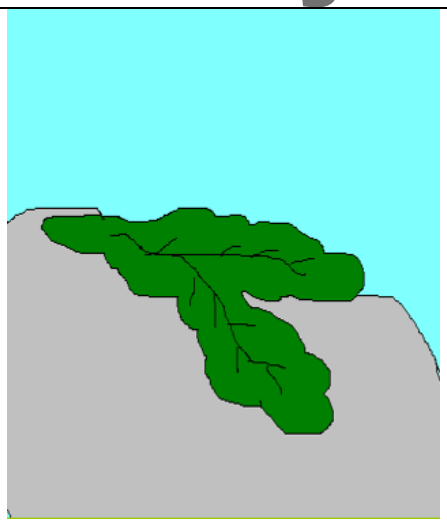

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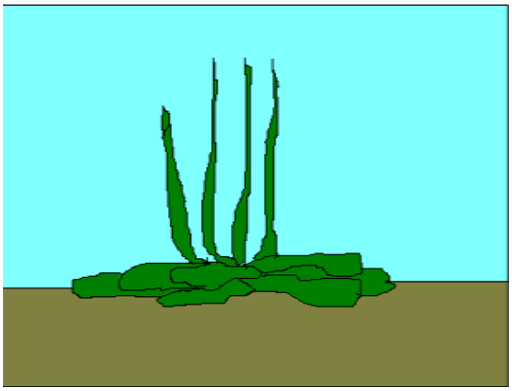
Please sketch out a hornwort below.



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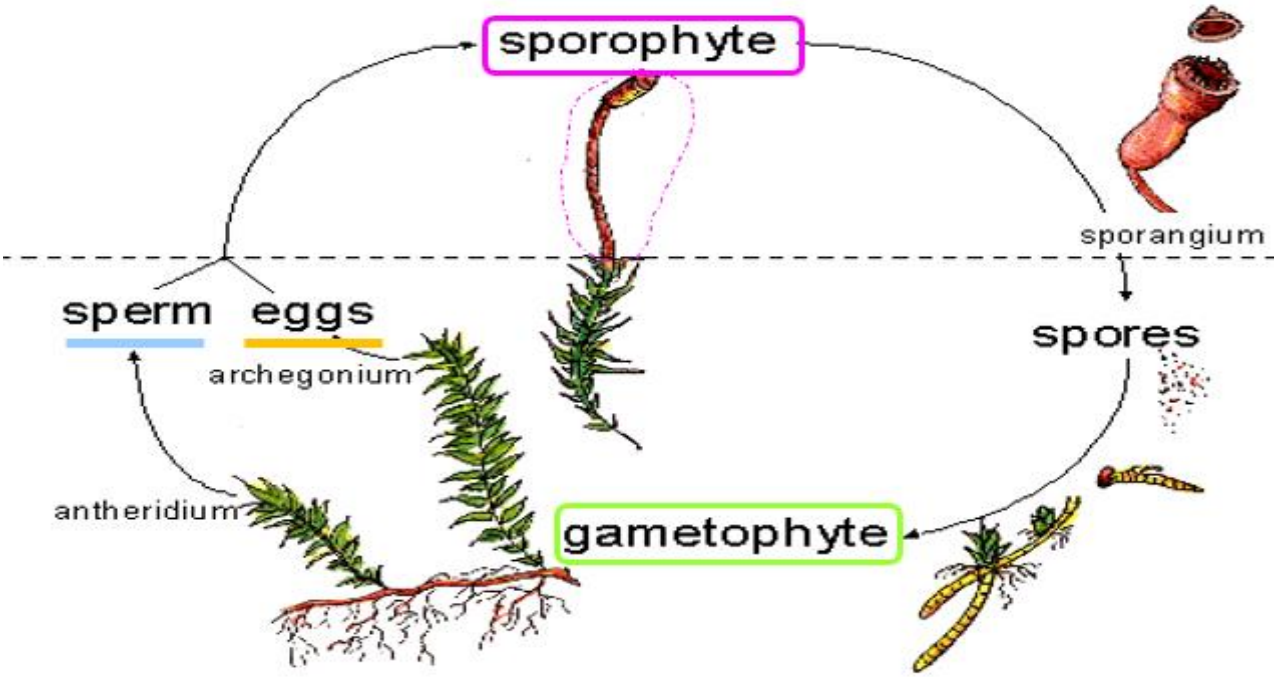
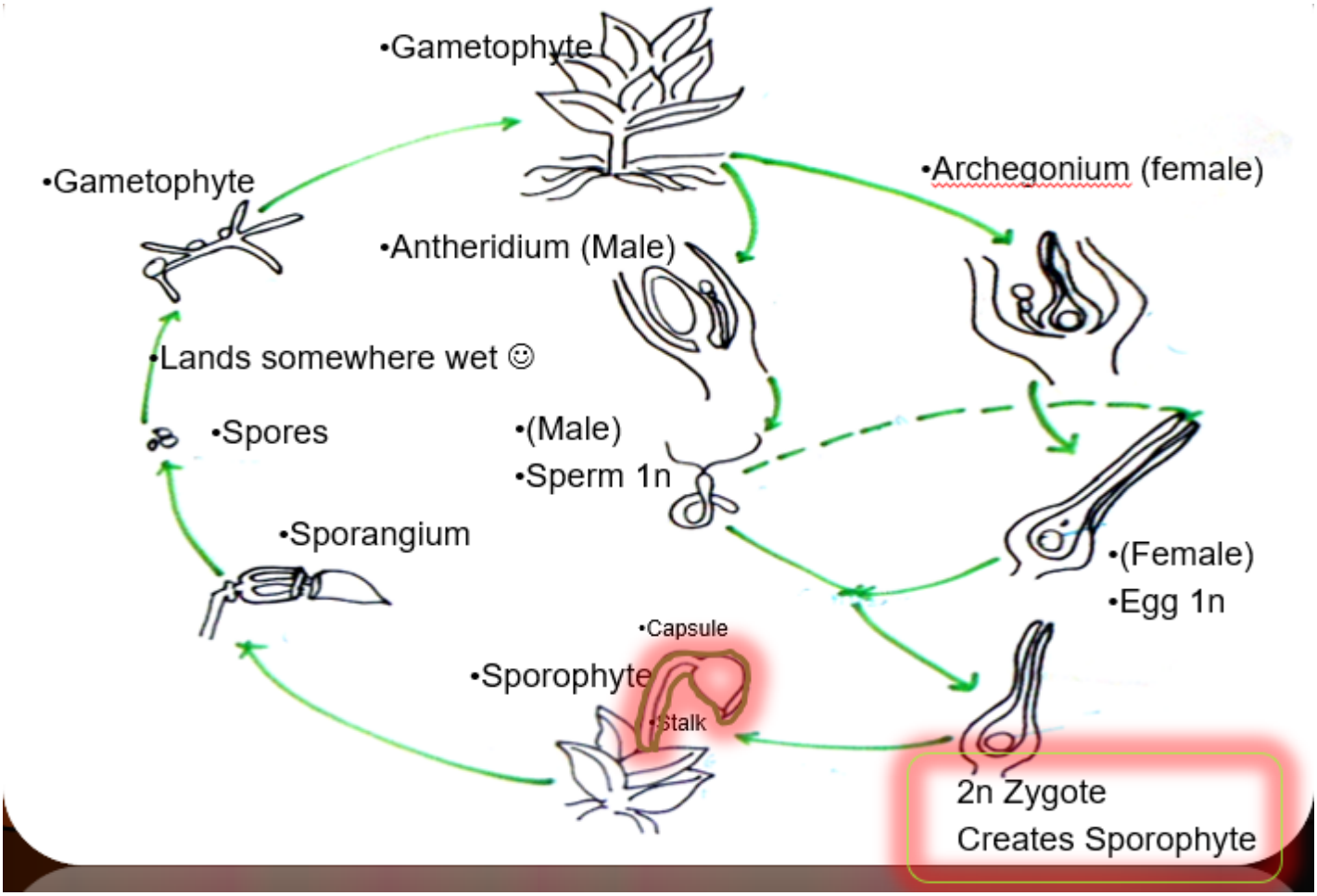


Please correctly name the type of non-vascular plant in the boxes under the picture.

 Liverwort	 Moss	 Hornwort

Provide some terminology about the life cycle of a seedless vascular plant.



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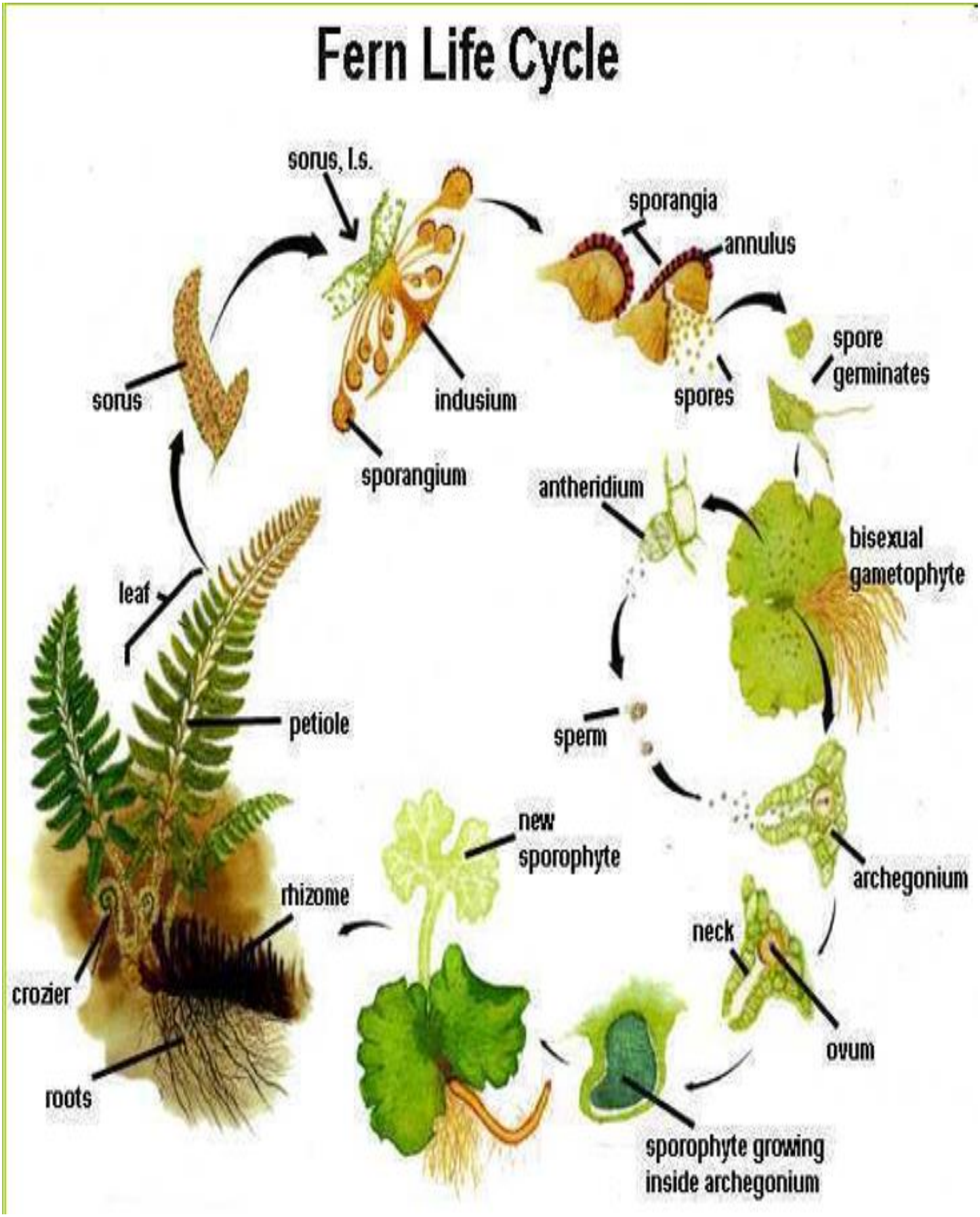
Fern Life Cycle
sorus, l.s.
sporangia
annulus
spore
germinates
sorus
indusium
spores
sporangium
antheridium
bisexual
gametophyte
leaf
petiole
sperm
new
sporophyte
archegonium
rhizome
neck
crozier
ovum
roots
sporophyte growing
inside archegonium

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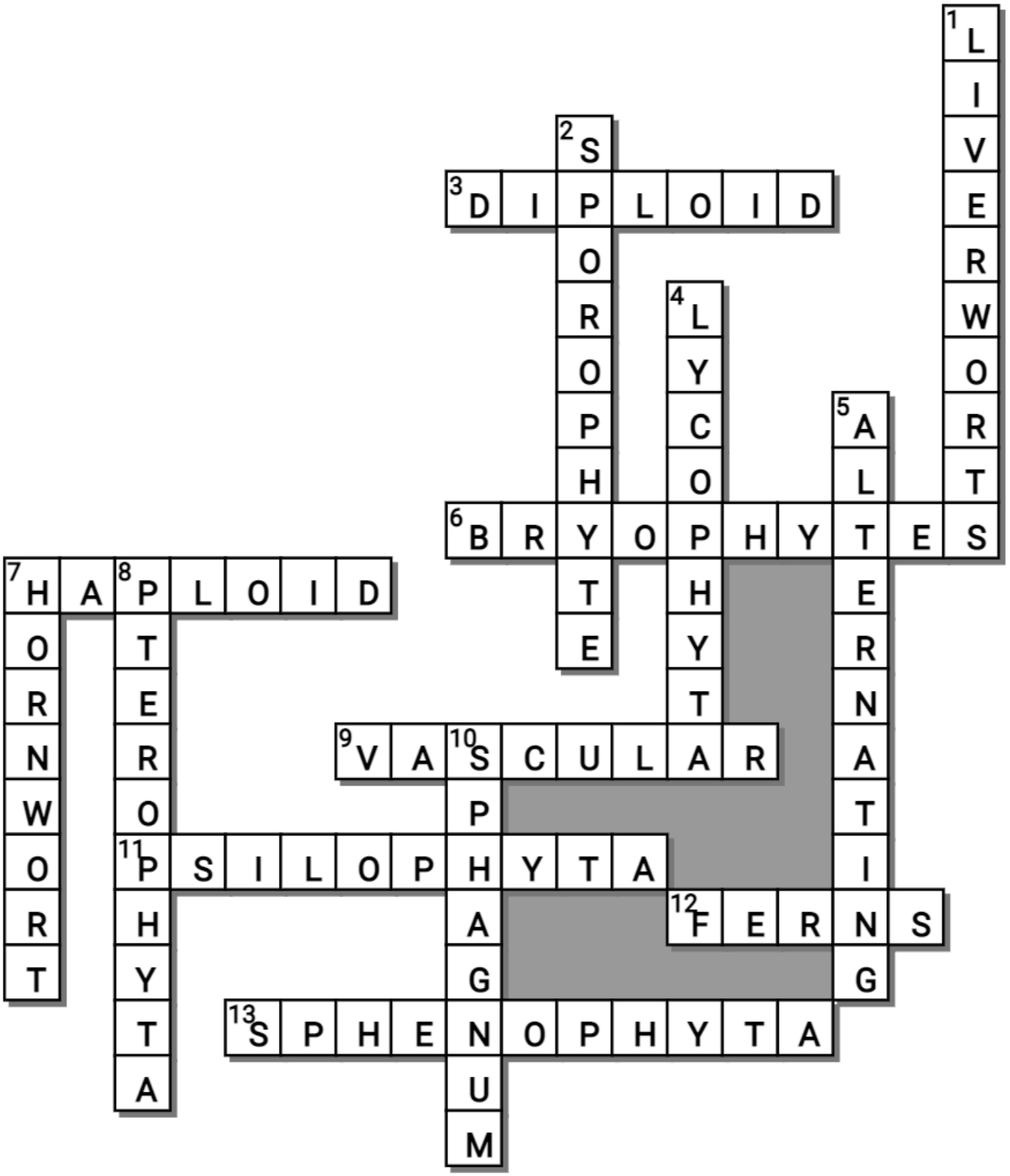

Across

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Part 2 Review Game Name:
Part 2 Lesson 6 Review Game
10 pts each, bonus +1 pt, 5 pt wager

TOTALLY NOT TUBULAR	ANYTHING GROWS	-Bonus- FERNLANDIA
1) Vascular tissues	6) True	*11) The Lost World Jurassic Park
2) Bryophytes	7) Horsetails (Sphenophyta)	*12) Red
3) Moss	8) Spores	*13) Twilight
4) A= Sporophyte B= Gametophyte	9) D: Sporangia	*14) Survivor
5) A= Liverwort B= Hornwort	10) Fiddleheads	*15) Predator

Final Question =5 point wager Wager=_____ Score=_____

Bisexual Gametophyte, located in the Archegonium.

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