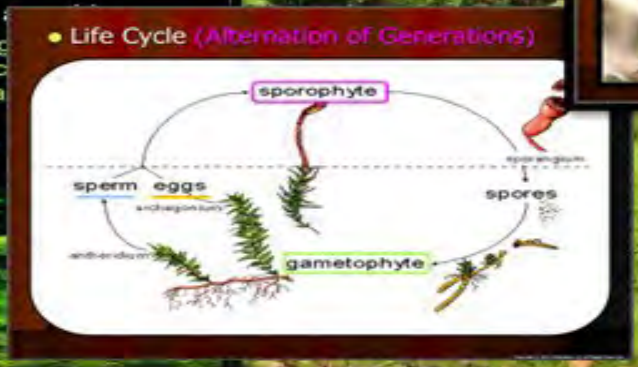
Non-vascular Plants

Preview is a compressed file



6 Lessons

Interactive Slideshows

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

- The growth, death, and decay of mosses produces more humus, and soon there is enough to support the growth of grasses.

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

- https://www.youtube.com/watch?v=ogOhGlcJSuQ

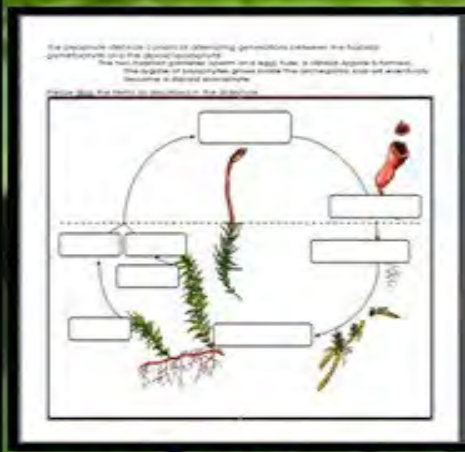
- Quiz Wiz 1-10 Stand and Identify the Non-vascular Bryophyte with a symbol
  - Moss, Liverwort, Hornwort.

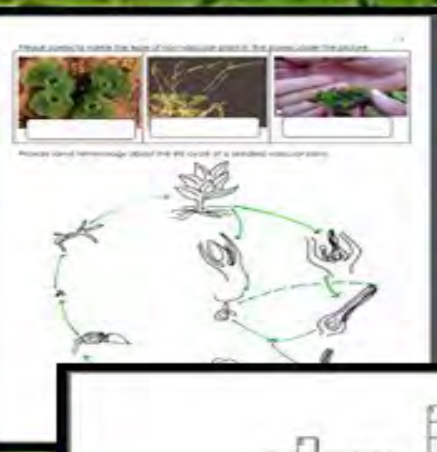
Follow Along Bundle

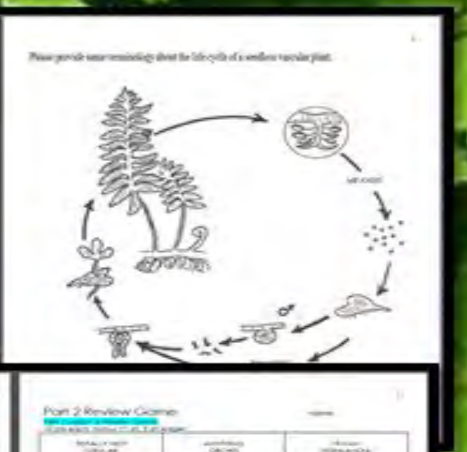

Part 2 Non-Vascular Plants

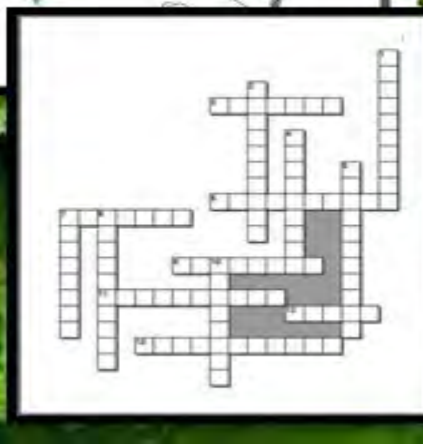

Masses of Moss


Branched Type | Leafy Type

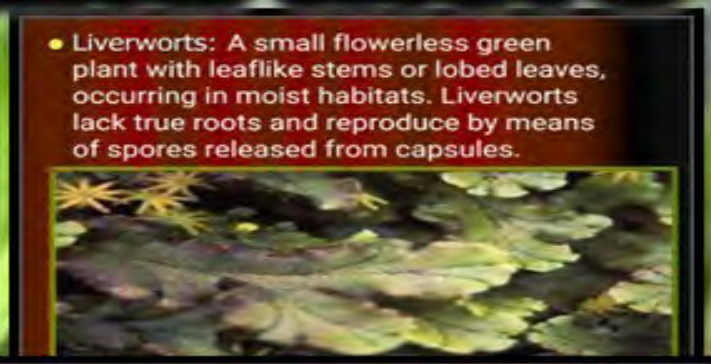








Activities, Built-in Assessments, and more



Botany Unit Part 2:6 Lessons of 50 Minutes and 12 Page Work Bundle, Non-Vascular Plants, Visual Quiz of Vascular vs. Non-vascular, Bryophytes, Moss, Parts of a Bryophyte, Sphagnum Moss, Moss Water Retention Study where students create their own to study to record how much water a clump of moss can retain, Liverworts, Hornworts, Visual Quiz, Bryophyte Life Cycle Diagram, Sporophyte, Gametophyte, Alternations of Generations, Seedless Vascular Plants, Ferns, Fern Life Cycle, Horsetails, Box Games, Crossword Puzzle, End Unit Assessment

Botany Unit Part 2

Part 2 Lesson 1 Intro

Part 2 Lesson 2 Mosses

Part 2 Lesson 3 Moss Water Study

Part 2 Lesson 4 Liverwort Hornwort

Part 2 Lesson 5 Ferns Horsetails

Part 2 Lesson 6 Review Game

Part 2 Lesson 7 Review Game Answers


Part 2 Work Bundle Answers

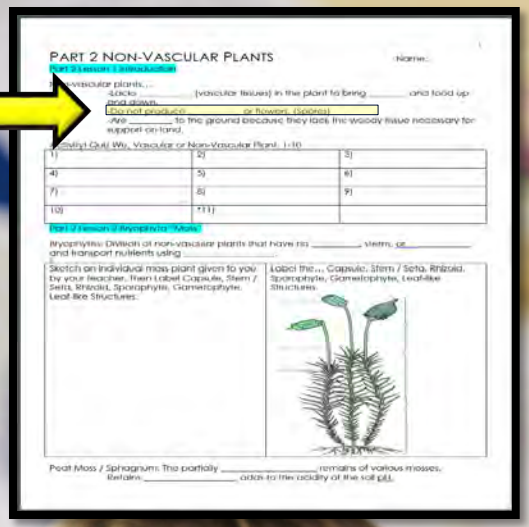

Part 2 Work Bundle Print

SlideSpark Science

MIDDLE-LEVEL EDUCATIONAL RESOURCES

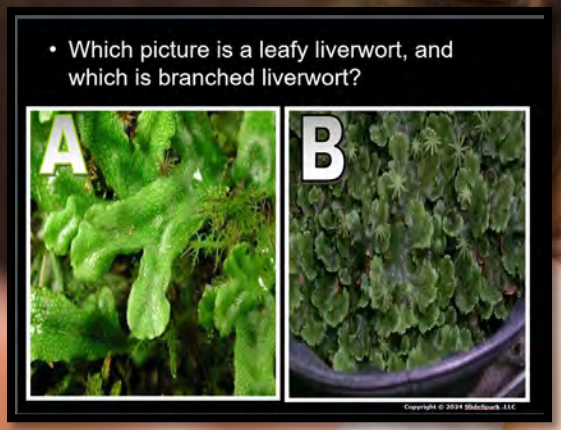
Interactive slideshows provide the roadmap for an amazing learning experience for students in grades 5-9. A Detailed set of work bundles chronologically follow the digital learning, providing a clear and intuitive roadmap to understanding. As the teacher or student advances through a slideshow, exciting hands-on activities, fantastic visuals, fill-in notes, review opportunities, video links, assessments, and much more are strategically placed throughout. Interactive learning unfolds step by step and supported by the work bundle to reach all types of learners. Everything you need to run to an amazing learning experience is provided in this one-of-a-kind science curriculum.

Each unit in the curriculum is designed to help teachers deliver the best possible learning experience for their students. Our interactive science slideshows are filled with questions and answers, important fill-in notes, hands-on activities, projects, games, built-in quizzes, and end of the unit assessment pieces. Students follow along with a work bundle that documents the entire learning experience for a fantastic review and assessment piece.



Red Slide Notes: Help students record important information in a fun and easy-to-understand way. Designed red-colored slides contain a few pieces of crucial information that students must record into their work bundle to complete the notes. Students will use these important notes throughout the work bundle.

The set-up of the slideshows are designed to make learning fun and interactive for students. With a mix of questions and answers, teachers can use these slides to get their students thinking and actively participating in their education. Plus, the answers are always revealed on the next slide, providing students with immediate feedback and helping teachers assess their understanding.



Next Slide

Slideshow supports Work Bundle

Lesson Planning

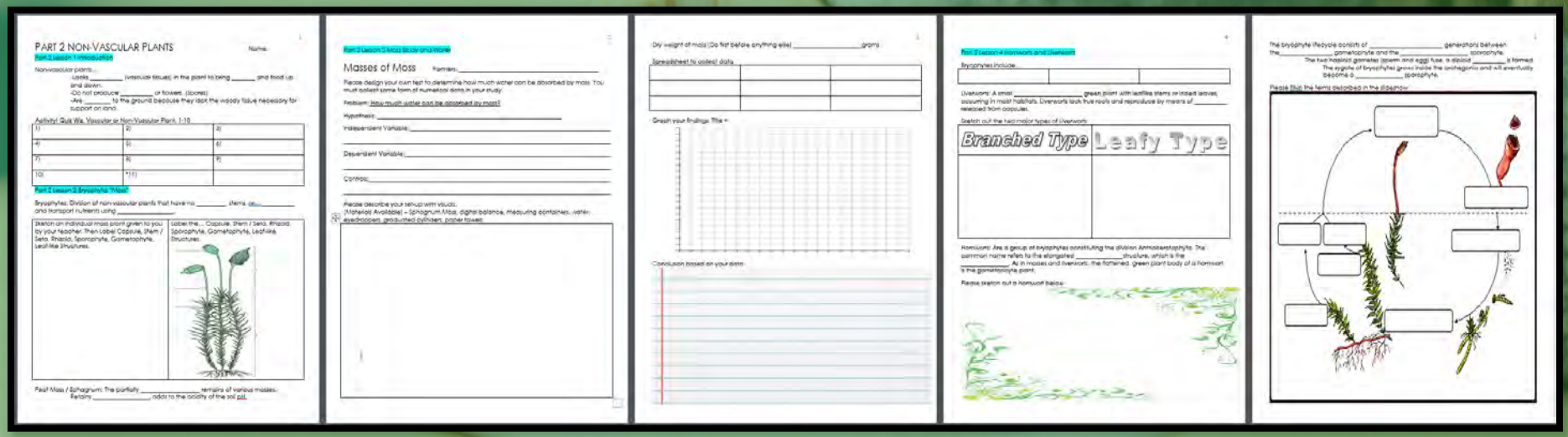
Daily lessons space exciting hands-on activities, red slide notes, video and academic links, projects, simulations, readings, built-in quizzes, and review opportunities throughout the slideshows. A typical day may have many different learning styles being targeted. Daily lesson planning becomes advancing through the slideshow roadmap the night before. Each lesson is roughly 50 minutes, but sometimes things can speed up or slow down. The best strategy is just to go at your classes own pace. The work bundle chronologically follows the interactive slideshow and you can always spend extra time assessing the quality of the writing within. If you don't quite finish a lesson, you can always pick it up the next day where you left off. The only real trick in timing is not starting a larger activity if you don't have the available time to complete. The slideshows have been designed to be a low stress, go at your classes own pace experience. Most activities are designed to be cost effective, using general materials that can be gathered from your local stores.

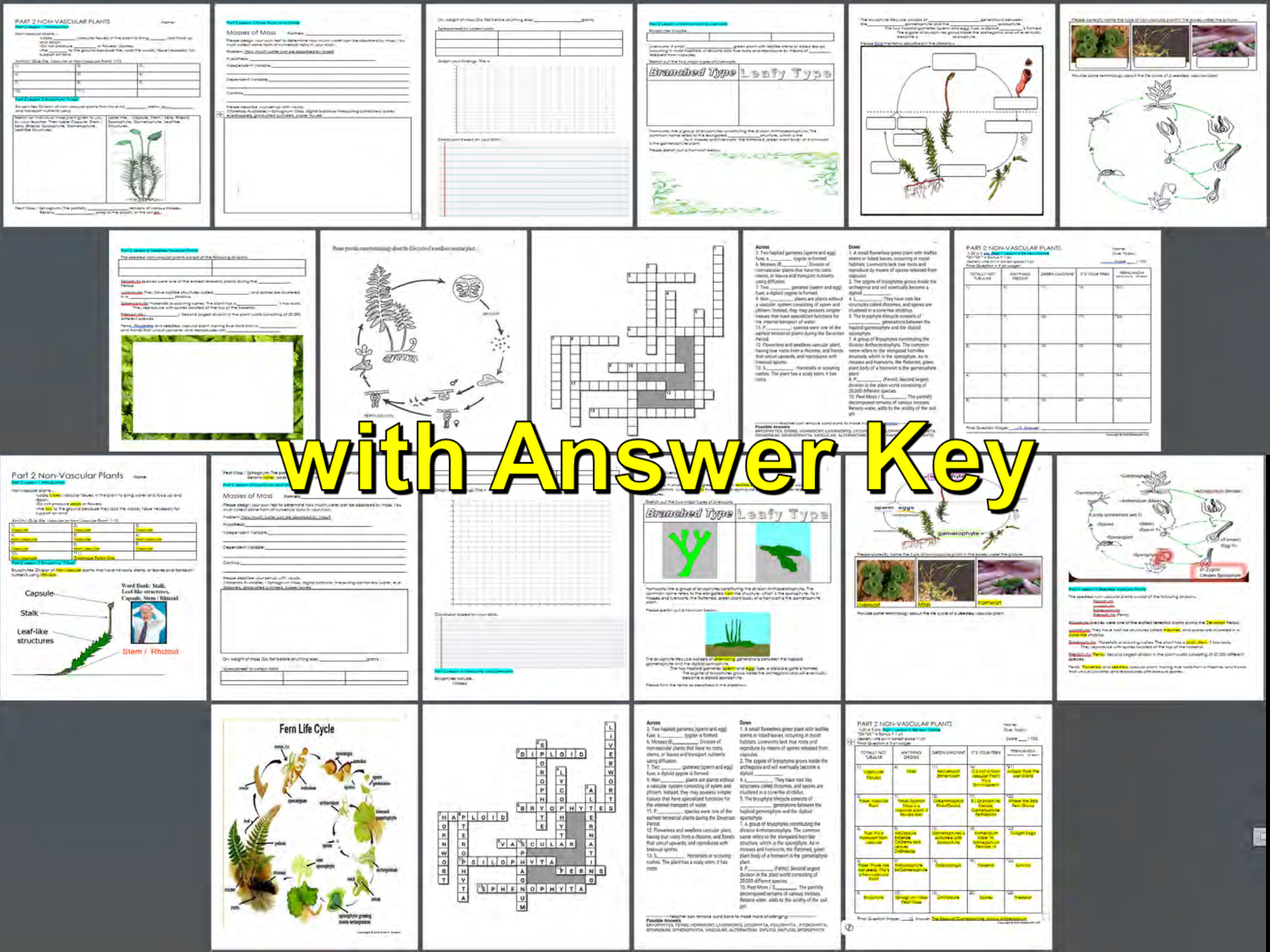
Part 2 of 6

Lessons chronologically follow a single work bundle

Follow Along Work Bundle

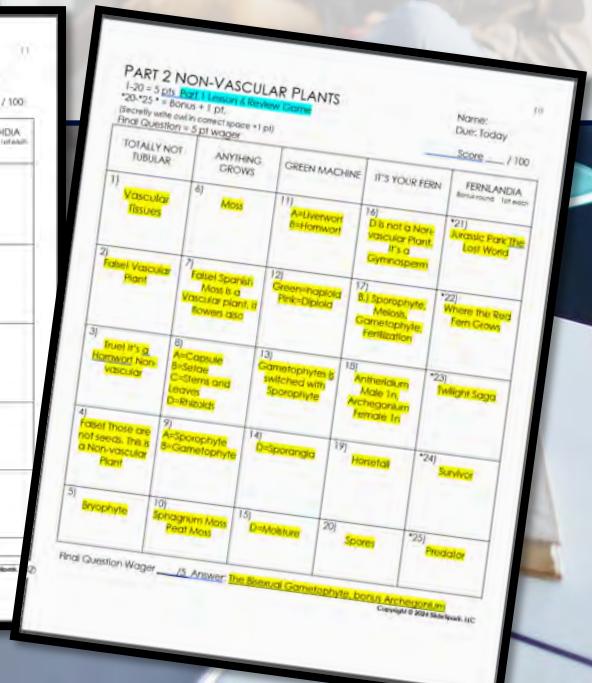
Each science unit includes a single printable work bundle that stays with students from start to finish. Just print and distribute on day one—no daily handouts needed. The bundle follows the unit chronologically and includes everything: fill-in notes, diagrams, quizzes, lab activities, with follow up questions and much more. It's used daily, supports the end-of-unit quiz game, and is handed in for an additional assessment. Answer keys, some writable .pdf versions, and digital versions are also included for flexible classroom use..



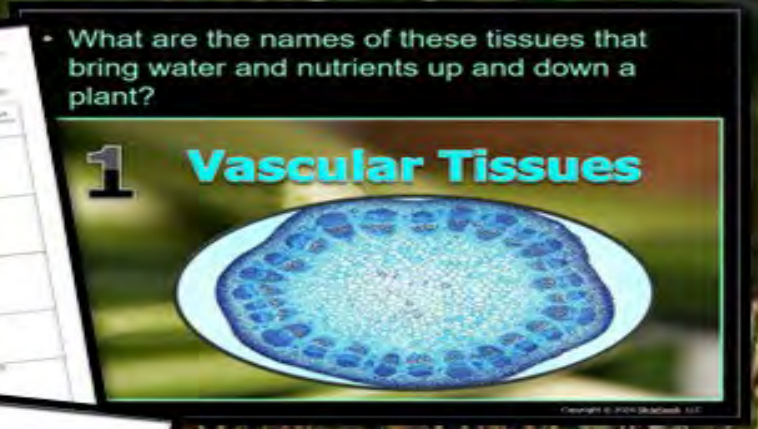

with Answer Key

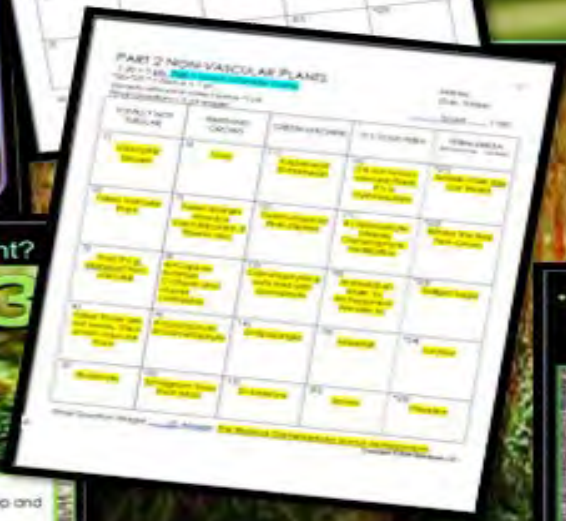
Review Games / Assessments

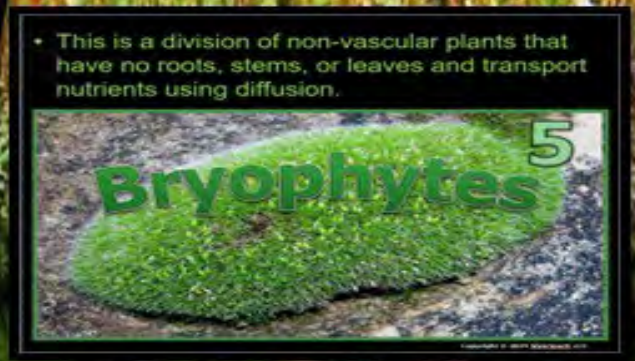
This unit concludes with a review quiz. Answers are provided in slideshow form so students can self assess. A blank template sheet is provided in the work bundle. Students can benefit from working together in small table groups with quiet communication. You can decide if you want to allow the use of work bundles or not. These are a nice review opportunity and get the students looking through their work bundles for the answers.



Quiz Game
Non-vascular plants







- Ferns reproduce using bisexual spores.

8

SPORES

- Name this non-vascular plant?

6

Moss

- True or False? This is true moss hanging from these trees in the Southern United States.

False! Called Spanish Moss but its not a moss.

7

It's a bromeliad, a flowering plant related to pineapples. It's also an epiphyte, meaning it grows on other plants for support but doesn't derive nutrients from them.

- True or False? These are seeds on this bryophyte.

False!

4

These are moss capsules that contains spores

- Which is the gametophyte generation and which is the sporophyte generation?

9

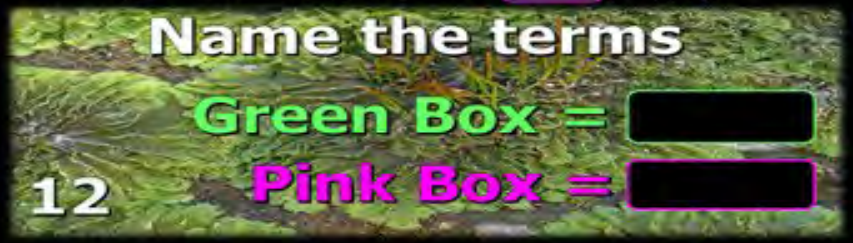
- Name the parts of this moss

8

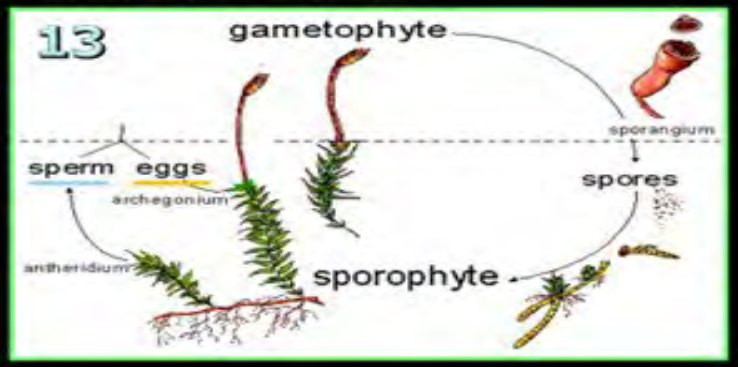
20 Questions

- Sphagnum moss is moisture loving moss that carpets the ground in wet areas.
  - They play a vital role in the creation of peat moss / bogs: by storing water in their spongy forms, they prevent the decay of dead plant material.

- The bryophyte lifecycle consists of alternating generations between the [ ] gametophyte and the [ ] sporophyte.
  - The two [ ] gametes (sperm and egg) fuse, a [ ] zygote is formed.
    - The zygote of bryophytes grows inside the archegonia and will eventually become a [ ] sporophyte.



- Which terms are switched?



- This is a picture of a fern...
  - A.) Gametophyte
  - B.) Setae
  - C.) Rhizome
  - D.) Sporangia
  - E.) Frond

- The moss life cycle relies heavily on this for fertilization...
  - Mosses produce both male and female sex organs (antheridia and archegonia, respectively) on their leafy gametophytes. These organs require a film of water for the male sperm to swim to the egg and complete fertilization. After fertilization, a sporophyte develops, which then produces spores that are dispersed, and the cycle restarts when these spores land on a wet surface and germinate

A.) Soil
B.) Air
C.) Nutrients
D.) Moisture
E.) Roots
F.) Insects

- Nam[illegible]o plants?

with Answer Version

- Which one is not a seedless vascular plant?

A. Lycophyta (Seedless Vascular)

B. Sypheophyta (Seedless Vascular)

C. Psilophyta (Seedless Vascular)

D. Gymnosperm (Cone / Seed Bearing Vascular Plant)

E. Pterophyta (Seedless Vascular)

16

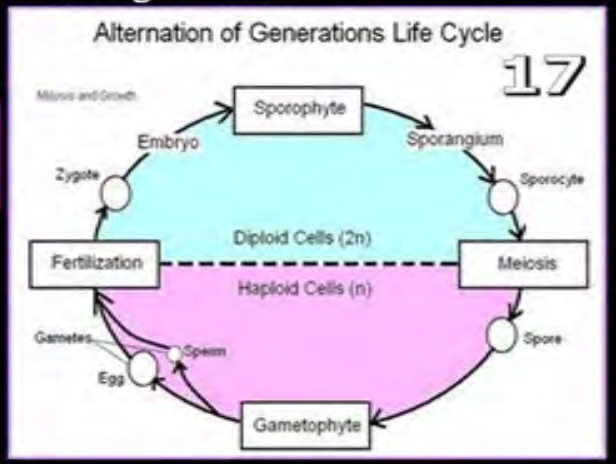
- What is in the missing boxes…

A.) Egg, Spore, Gamete, Water

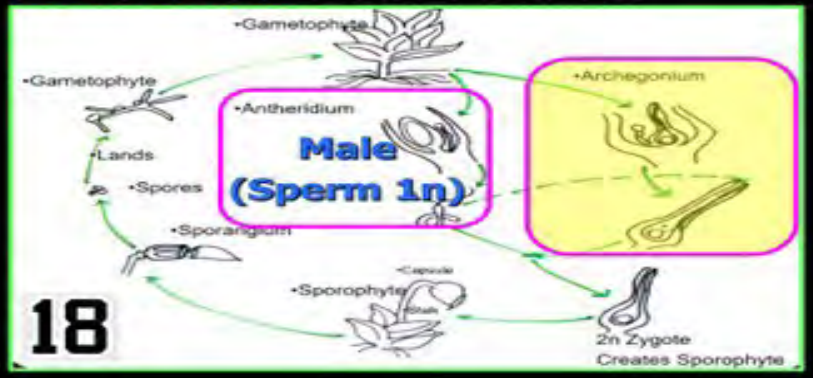
B.) Sporophyte, Meiosis, Gametophyte, Fertilization

C.) Water, Spores, Seeds, Flower

D.) Sporangia, Water, Mitosis, Eggs



- Which is male? and which is female?



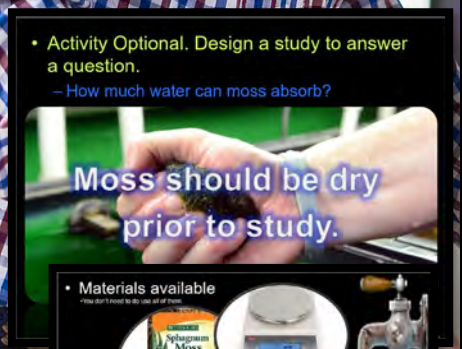
- Name this plant?

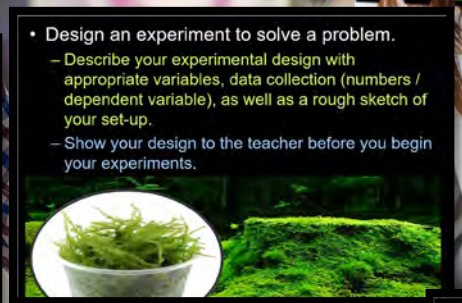
- Ferns reproduce using bisexual spores.

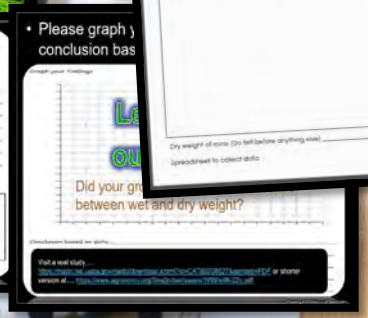
Activities / Labs

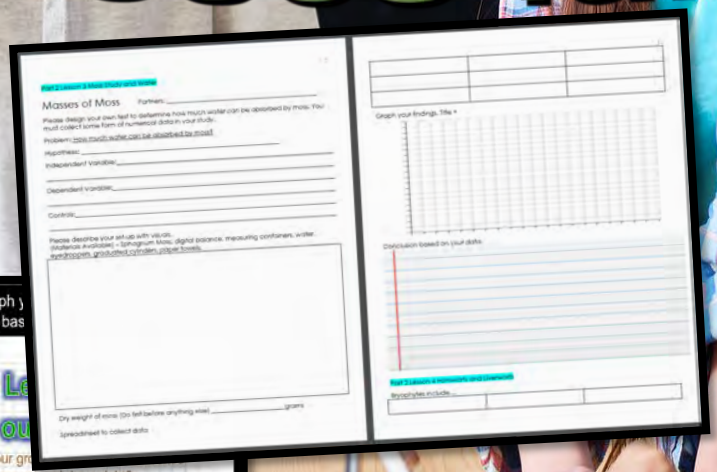
Our science activities are designed to help students explore and understand complex scientific concepts in an engaging and interactive way. Each science unit includes several hands-on activities that encourage students to collect data and think critically about the world around them. Our easy-to-follow slideshow provides detailed visuals, simple materials, and clear directions, making it easy for both students and teachers to navigate the activities.

Mass of Mosses lab









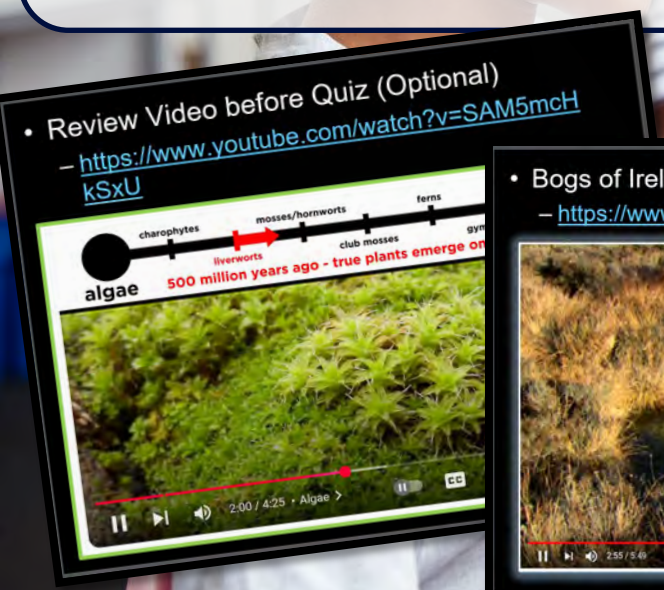
Built-in Assessment

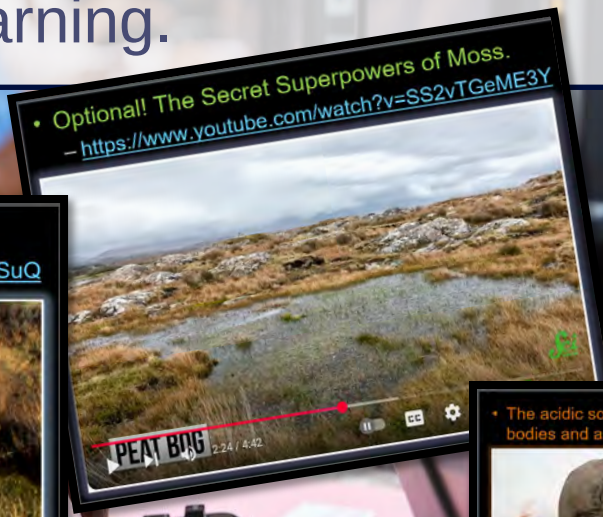
Each unit contains several built-in assessment questions that students answer in their work bundle. With the question revealed before the answer, the teacher can easily call on individual students or table groups to respond. These provide an effective and efficient way for teachers to assess student learning.

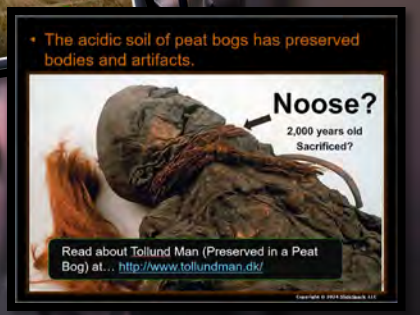
Questions in Work Bundle

Built-in Video Links

Our science education program is designed with the modern, multimedia learner in mind, and our video links are a perfect complement to our educational materials. These short clips are embedded into the slideshow at just the right places for a fantastic review. Whether you're studying biology, chemistry or physics, our video links are an excellent way to reinforce your learning.

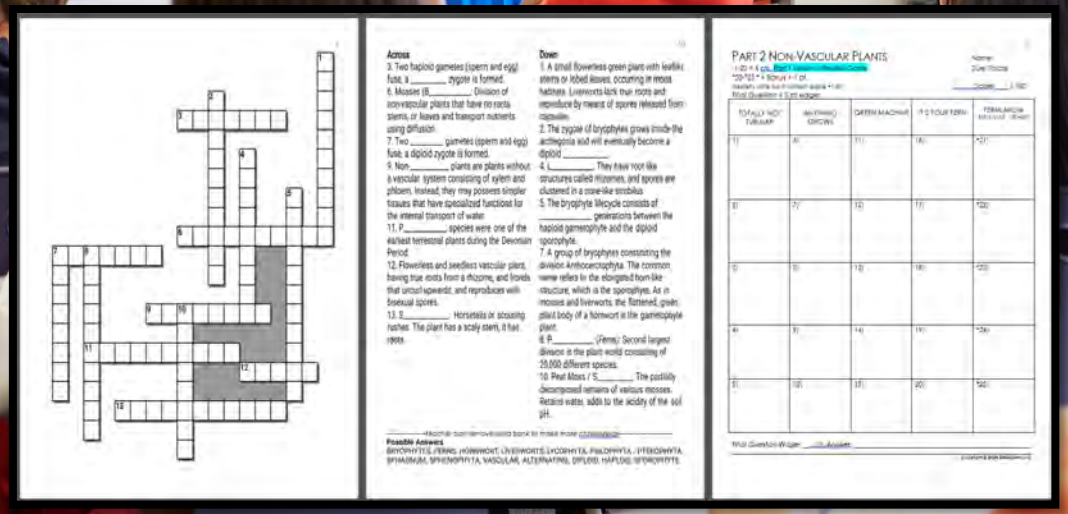


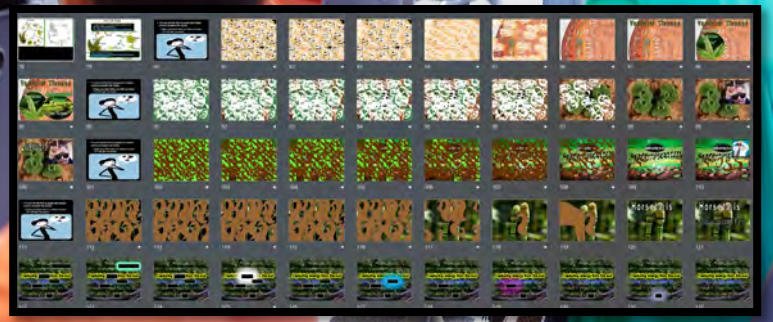




Games and Review

Games are a fantastic way for students to learn scientific concepts while having fun. We incorporate a variety of games into our curriculum, including interactive quizzes and puzzles that challenge students to think critically about the material. Our Hidden Box Games are a particularly popular feature, which conclude each unit by revealing a picture related to the topic. Students try to guess what the picture might be, making learning an engaging experience.

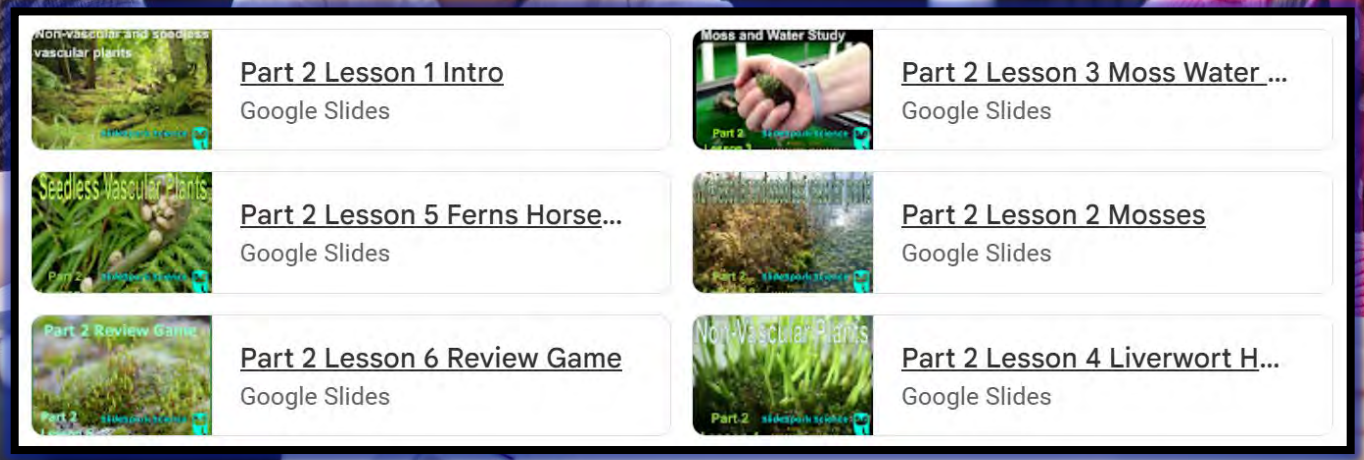




The Owl - Each Part of the slideshow has a small clipart Owl hiding somewhere in a slide. The owl is incredibly small and blended into just the right slide. If a student spots the “Owl” they can raise their hand high into the air. When you call upon the student they can say “Owl" and be the student who spotted the Owl. Each PowerPoint Review game also has an owl hiding in it worth one point. Remind the students that they secretly write the word "owl" rather than yell it out during the review games. The Owl search is not included in every lesson. A slide at the beginning of the lesson will alert the students that today is an “Owl’ day. Everything arrives editable so delete if you wish. You will find that some students will become the expert owl hunters in the group.

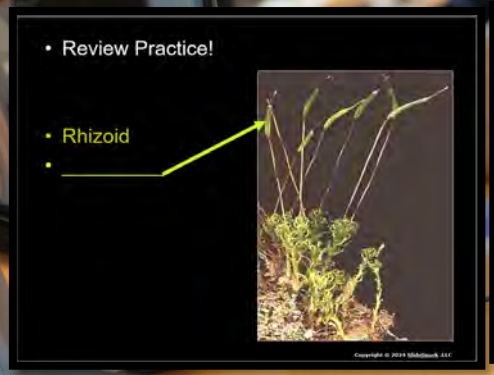
Google Classroom Compatible

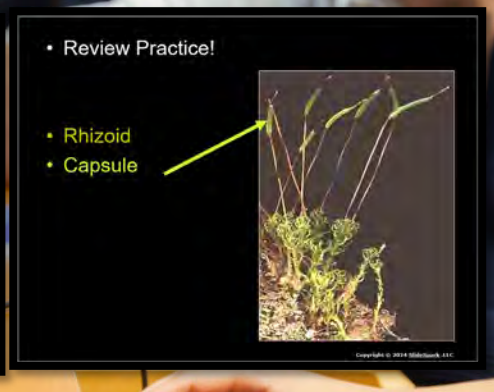
Our digital learning programs are designed for students to learn science in a flexible and engaging environment. Our Google Classroom-compatible units provide a seamless learning experience whether your students are in the classroom or learning from home. Our step-by-step slideshows and student work bundles ensure that students can complete their work independently. The PowerPoint Slideshows and step-by-step work bundles can easily be loaded to your Google Drive and posted in your Google Classroom. These are great for daily lessons, students who need additional time, and for a student who was absent and looking to catch up in their work bundle.

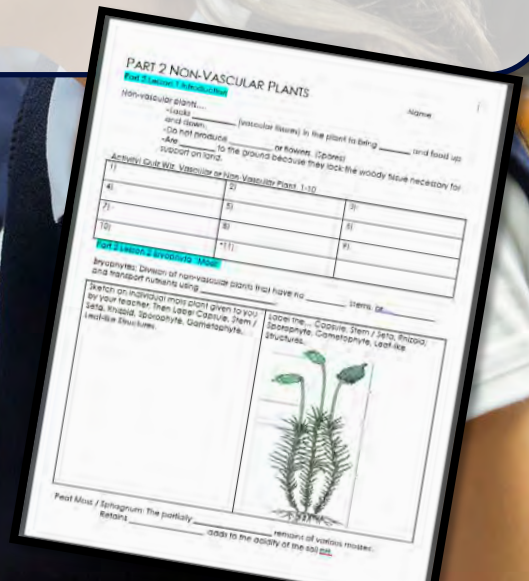


Built-in Questions and Assessments

Many slides will have relevant terms covered with a box. When advancing through the slideshow an outline around the box will glow with a bright color. The next slide will make the box disappear. These slides allow the teacher to call upon students or table groups / check for understanding before advancing. The team at SlideSpark has found that using this technique helps to keep the students focused. Constantly recalling and reviewing information learned is necessary when moving through a large unit. The slideshows don't just give everything away for free. Students should be able to demonstrate knowledge before moving on. Some slides have full questions instead of just covered terms. In these slides, the teacher should encourage small group work. The teacher can then call upon one or two groups to share before advancing the slide. The next slide will always reveal the correct answer.

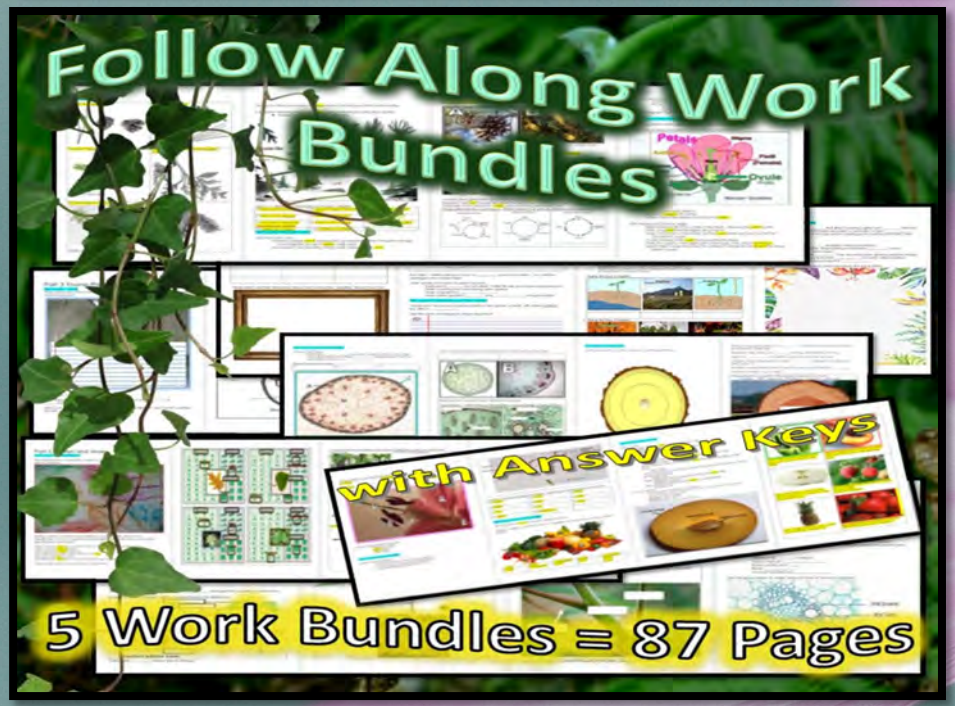







Botany Unit
Botany Unit
Pistil
Style
Hypocotyl
Epicotyl
Radicle
Cotyledon
True Leaves
Petiole: The
Internode: Portion of a plant stem between nodes.
Node: Place on stem where buds form.
and water from the surrounding soil.
Important plant nutrients for healthy
N
P
K
Cotyledon
Name A, B, and C?
Pollen
13
Anther
Stamen
5 Parts, 50 Lessons


Interactive Slideshows
Independent Variable (Change)
Dependent Variable (Observe)
Control Variable (Same)
Does fertilizer help a plant
Amount of fertilizer
Growth of the plant
Same amount of soil, light, water
The average / mean is the sum of all values divided by the total number of values
2.4 + 1.7 + 2.0 = 6.1 cm / 3 = 2.03 cm
2.4 cm
1.7 cm
2.0 cm
Study could examine different types of light on plant growth.
Two Types
Everything else is exactly the same
Independent Variable: The variable you have control over, what you can choose and manipulate.
Do not produce seeds or flowers.
Not a seed
Calyptra Covering a Spore
Old xylem doesn't transport water but supports plant. (Xylem is wood).
Gliders
– Natures perfect design.
Which flower uses wind to pollinate, and which uses
Why?
A Insects
B Wind
a Ginkgo and which is a
Hydroponics: The process of growing plants in sand, gravel, or liquid, with added nutrients but without soil.
Angiosperms produce seeds enclosed in a fruit /ovary.
Dendrochronology Available Sheet


Follow Along Work Bundles
with Answer Keys
5 Work Bundles = 87 Pages


Quizzes, Activities, More
What's the role of these?
A.) Create sugar in photosynthesis
B.) Disperse pollen.
C.) Disperse waste from the plant.
D.) Uptake water and nutrients.
E.) Resist plant hormones.
answer is...
4
Please name A and B.
– Hint. You can try and unscramble the words.
angiosperm
gymnosperm
Compound Leaves: They appear in groups and are made up of leaflets.
LEAFLETS
type of fruit is this plume? Drupe
– enveloped from ancestory and has seed inside.
– Please label the endocarp, mesocarp, and exocarp
A
B
C
20
Drupe
These are the types of plants and shrubs that lose leaves in fall and grow them back in spring.
Deciduous 8
Equation for Photosynthesis
6CO2 + 6H2O + Energy → C6H12O6 + 6O2
Carbon Dioxide + Water + Sunlight → Sugar + Oxygen
identify this type of tree
Maples
Stigma
Style
Pistil (Female)
Ovule (Egg)
Nectar Guides
Fully Editable

Botany Unit

Botany Unit

Plant Topics / Botany Unit

5 Parts, 50 Lessons, (5th-7th Grade -Medium Difficulty) Part 1 Introduces Plant Project and Plant Evolution, 7 Lesson 18 Page Work Bundle, Part 2 is about Non-vascular Plants and is 6 Lessons and 12 Page Work Bundle, Part 3 is Seeds and Young Plants, and has 8 Lessons and 19 Page Work Bundle. Part 4 has 11 Lessons and 20 Page Bundle, Part 5 is Leaves and Plant Life Cycles and has 10 Lessons and 18 Page Work Bundle.

-Areas of Focus in The Plant Unit: Cool Facts about Plants, Plant Evolution, Importance of Algae, Lichens, The Three Types of Lichens, Non-Vascular Plants, Bryophytes, Seedless Vascular Plants (Ferns), Seeds, Seed Dormancy, Factors that Break Seed Dormancy, Germination, Parts of a Young Plant, Monocots and Dicots, Roots and Water, Types of Roots, Water Uptake and Photosynthesis, Plant Hormones, Types of Plant Tissues, Xylem and Phloem, Woody Plants, Leaves, Light and Plants, Transpiration, Guard Cells, Leaf Identification, Plant Life Cycles, Seed Plant Life Cycles, Parts of a Flower, Matured Ovaries (Fruits), Types of Fruit.

Part 1 has 7 Lessons of 50 Minutes and 18 Page Work Bundle, Definition of a Plant and Breaking that Definition Down, Plant and Animal Cells, Ways Humans Use Plants, Energy Flow of Life, Visual Tour of Some Amazing Plants, Types of Scientist, Scientific Method, Step by Step Drawing of Scientific Method, Understanding Variables, Control, Setting Up Grow Study for Entire Unit, Averages, Finding Averages, Plant Evolution, Kingdoms of Life Diagram, Side Bar on Protists / Algae, Importance of Algae, Looking at Algae under microscope, How to make a Wet Mount Slide, Brown Algae, First Land Plants, Challenges of Early Plants to Terrestrial Environment, First Vascular Plants, Carboniferous Period and Fossil Fuels, Flow Chart of Plant Evolution, Cycads and Gingko, Gnetum & Welwitschia, Gymnosperms, Angiosperms, Timeline Review, Optional lesson on Lichens (Kingdom Fungi), Lichen, Algae Fungi Symbiosis, Types of Lichen, Lichen Field Trip Outside, Quiz on Types of Lichen, Types Introduction to Plants, Set-up of Grow Study, The Scientific Method, Plant Evolution, Plants, Set-up of Grow, Study, The Scientific Method, Plant Evolution

Part 2: 6 Lessons of 50 Minutes and 12 Page Work Bundle, Non-Vascular Plants, Visual Quiz of Vascular vs. Non-vascular, Bryophytes, Moss, Parts of a Bryophyte, Sphagnum Moss, Moss Water Retention Study where students create their own to study to record how much water a clump of moss can retain, Liverworts, Hornworts, Visual Quiz, Bryophyte Life Cycle Diagram, Sporophyte, Gametophyte, Alternations of Generations, Seedless Vascular Plants, Ferns, Fern Life Cycle, Horsetails, Box Games, Crossword Puzzle, End Unit Assessment

Part 3: 8 Lessons of 50 Minutes and 19 Page Work Bundle, Svalbard Seed Depository Case Study, Breakdown of the Definition of a Seed, Parts of a Seed, Seed Dissection Activity, Seed Coat, Seed Dormancy, Factors that Break Seed Dormancy, Parts of a Seed, Factors that break Seed Dormancy, Seed Dispersal, Wind, Male and Female Cones of Gymnosperm, Seed Dispersal Project where student design a seed to be dispersed by wind, Water Dispersal, Animal Dispersal, Tension Dispersal, Visual Quiz of Seed Dispersal Mechanism, Germination, Germination Observation Activity, Peanut Allergies, Parts of Young Plants, Cotyledon, Radicle, Gravitropism, Hypocotyl, Epicotyl, Foliage Leaves, Stems, Nodes, Internodes, Petioles, Visual Quiz Name that part of a Young Plant, Monocotyledons, Dicotyledons, Differences between the two, Visual Quiz of Mono or Dicot, Case Study on George Washington Carver, Box Game Review, Crossword Puzzle, End of Unit Assessment

Part 4: 11 Lessons of 50 minutes and 20 Page Work Bundle, Important Role of Roots, Types of Roots Water and Mineral Uptake, Root Hairs, Water Uptake and Photosynthesis, Hydroponics, Tropisms, + and – Tropism, Name that Tropism Challenge, Plant Hormones, Auxin, Gibberellins, Cytokinin, Abscisic Acid, Ethelene, Types of Plant Tissues, Xylem and Phloem, Woody Plants, Pith, Heartwood, Sapwood, Case Study on Maple Syrup, Cambium Layer, Porcupines and Beavers, Emerald Ash Borer, Inner Bark, Outer Bark, Tree Rings, Dendrochronology, Dendrochronology Lab, Chainsaw Safety, Breakdown of definition of a leaf, 3 Big Aspects of Plants and Light, Optional What's Inside a Leaf Chromatography, Chloroplasts, Photosynthesis, Photosynthetic Equation, Learning the Equation with M&M's, Review of Photosynthesis, Leaves, Light and Plants, Transpiration, Guard Cells, Box Games, Crossword Puzzle, Unit Assessment

Part 5: 10 Lessons of 50 Minutes and 18 Page Work Bundle, Leaf Identification, Leaf Rubbing Activity, Blades, Venation, Leaf Margins, Leaf Base, Leaf Apex, Petiole, Simple vs. Compound Leaves, Identifying some common leaves, Maples, Oak, Beech, Pines, Poisonous Plants, Case Study on Poison Ivy, Poison Ivy Identification, Ivy Identification Quiz, Other Poisonous Plants, Deciduous Trees, Conifers, Identifying Conifers, Tree Identification Visual Quiz, , Plant Life Cycles, Seed Plant Life Cycles, Gymnosperm, Male vs. Female Cone, Angiosperm, Pollen, Annuals, Biennials, Perennials, Interpretive Dance Plant Life Cycles Group Activity, Flowers, Amazing Flowers Visual Tour, Parts of a Flower, Step by Step drawing on a flower with Parts, Matured Ovaries (Fruits), Stamen, Filament, Anther, Pistil, Stigma, Style, Ovary, Ovule, Sepal, Petals, Nectar Guides, How Flowers Attract Pollinators, Flower Dissection Lab, Visual Quiz Name that Part of a Flower, Exotic Fruits Visual Tour, Poisonous Berries, How Flowers become Fruits, Fruit or Vegetable Visual Standing Quiz, Parts of a Fruit, Epicarp, Mesocarp, Endocarp, Fleshy and Dry Fruits, Simple Fruits, Berries, Drupe, Pome, Aggregate Fruit, Multiple Fruit, Dehiscent Dry Fruit, Legumes, Indehiscent, Animals and Fruits / Seed Dispersal, Uses of Plants Wrap-up, Box Game Review, Crossword Puzzle, Unit Assessment

Botany Unit Part 1 : Part 1 has 7 Lessons of 50 Minutes and 18 Page Work Bundle, Definition of a Plant and Breaking that Definition Down, Plant and Animal Cells, Ways Humans Use Plants, Energy Flow of Life, Visual Tour of Some Amazing Plants, Types of Scientist, Scientific Method, Step by Step Drawing of Scientific Method, Understanding Variables, Control, Setting Up Grow Study for Entire Unit, Averages, Finding Averages, Plant Evolution, Kingdoms of Life Diagram, Side Bar on Protists / Algae, Importance of Algae, Looking at Algae under microscope, How to make a Wet Mount Slide, Brown Algae, First Land Plants, Challenges of Early Plants to Terrestrial Environment, First Vascular Plants, Carboniferous Period and Fossil Fuels, Flow Chart of Plant Evolution, Cycads and Gingko, Gnetum & Welwitschia, Gymnosperms, Angiosperms, Timeline Review, Optional lesson on Lichens (Kingdom Fungi), Lichen, Algae Fungi Symbiosis, Types of Lichen, Lichen Field Trip Outside, Quiz on Types of Lichen, Types Introduction to Plants, Set-up of Grow Study, The Scientific Method, Plant Evolution, Plants, Set-up of Grow Study, The Scientific Method, Plant Evolution

Part 1 Lesson 1 Botany Intro

Part 1 Lesson 2 Method Grow Study

Part 1 Lesson 3 Plant Evolution

Part 1 Lesson 4 Plant Evo Cont

Part 1 Lesson 5 Opt Lichens

Part 1 Lesson 6 Review Game 10Q

Part 1 Lesson 7 Review Game Answers


Part 1 Work Bundle Answers


Part 1 Work Bundle Print

Part 1 Work Bundle Writable .pdf

Botany Unit Part 1

Botany Unit Part 2:6 Lessons of 50 Minutes and 12 Page Work Bundle, Non-Vascular Plants, Visual Quiz of Vascular vs. Non-vascular, Bryophytes, Moss, Parts of a Bryophyte, Sphagnum Moss, Moss Water Retention Study where students create their own to study to record how much water a clump of moss can retain, Liverworts, Hornworts, Visual Quiz, Bryophyte Life Cycle Diagram, Sporophyte, Gametophyte, Alternations of Generations, Seedless Vascular Plants, Ferns, Fern Life Cycle, Horsetails, Box Games, Crossword Puzzle, End Unit Assessment

Botany Unit Part 2

Part 2 Lesson 1 Intro

Part 2 Lesson 2 Mosses

Part 2 Lesson 3 Moss Water Study

Part 2 Lesson 4 Liverwort Hornwort

Part 2 Lesson 5 Ferns Horsetails

Part 2 Lesson 6 Review Game

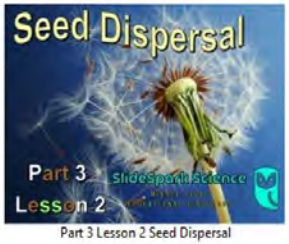
Part 2 Lesson 7 Review Game Answers


Part 2 Work Bundle Answers


Part 2 Work Bundle Print

Botany Unit Part 3 : 8 Lessons of 50 Minutes and 19 Page Work Bundle, Svalbard Seed Depository Case Study, Breakdown of the Definition of a Seed, Parts of a Seed, Seed Dissection Activity, Seed Coat, Seed Dormancy, Factors that Break Seed Dormancy, Parts of a Seed, Factors that break Seed Dormancy, Seed Dispersal, Wind, Male and Female Cones of Gymnosperm, Seed Dispersal Project where student design a seed to be dispersed by wind, Water Dispersal, Animal Dispersal, Tension Dispersal, Visual Quiz of Seed Dispersal Mechanism, Germination, Germination Observation Activity, Peanut Allergies, Parts of Young Plants, Cotyledon, Radicle, Gravitropism, Hypocotyl, Epicotyl, Foliage Leaves, Stems, Nodes, Internodes, Petioles, Visual Quiz Name that part of a Young Plant, Monocotyledons, Dicotyledons, Differences between the two, Visual Quiz of Mono or Dicot, Case Study on George Washington Carver, Box Game Review, Crossword Puzzle, End of Unit Assessment

Part 3 Lesson 1 Seeds

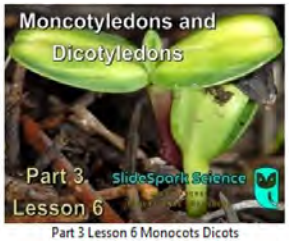


Part 3 Lesson 2 Seed Dispersal

Part 3 Lesson 3 Seed Dispersal Wrap Up

Part 3 Lesson 4 Young Plants

Part 3 Lesson 5 Young Plants Continued



Part 3 Lesson 6 Monocots Dicots

Part 3 Lesson 7 George Washington Carver

Part 3 Lesson 8 Review Game

Part 3 Lesson 9 Review Game Answers

Part 3 Work Bundle Answers

Part 3 Work Bundle Print

Botany Unit Part 3

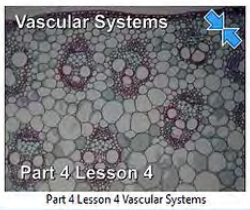
Botany Unit Part 4: 11 Lessons of 50 minutes and 20 Page Work Bundle, Important Role of Roots, Types of Roots Water and Mineral Uptake, Root Hairs, Water Uptake and Photosynthesis, Hydroponics, Tropisms, + and – Tropism, Name that Tropism Challenge, Plant Hormones, Auxin, Gibberellins, Cytokinin, Abscisic Acid, Ethelene, Types of Plant Tissues, Xylem and Phloem, Woody Plants, Pith, Heartwood, Sapwood, Case Study on Maple Syrup, Cambium Layer, Porcupines and Beavers, Emerald Ash Borer, Inner Bark, Outer Bark, Tree Rings, Dendrochronology, Dendrochronology Lab, Chainsaw Safety, Breakdown of definition of a leaf, 3 Big Aspects of Plants and Light, Optional What's Inside a Leaf Chromatography, Chloroplasts, Photosynthesis, Photosynthetic Equation, Learning the Equation with M&M's, Review of Photosynthesis, Leaves, Light and Plants, Transpiration, Guard Cells, Box Games, Crossword Puzzle, Unit Assessment

Botany Unit Part 4

Part 4 Lesson 1 Roots

Part 4 Lesson 2 Tropisms Hydroponics

Part 4 Lesson 3 Plant Hormones

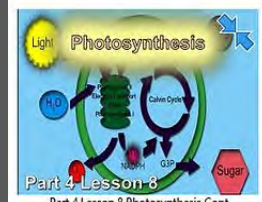


Part 4 Lesson 4 Vascular Systems

Part 4 Lesson 5 Woody

Part 4 Lesson 6 Dendrochronology

Part 4 Lesson 7 Leaf Processes

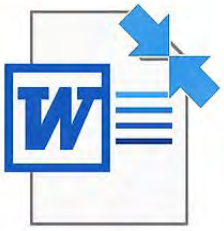


Part 4 Lesson 8 Photosynthesis Cont

Part 4 Lesson 9 Wrap Up

Part 4 Lesson 10 Review Game

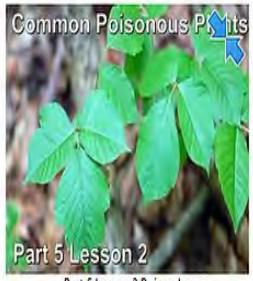
Part 4 Lesson 11 Review Game Answers


Part 4 Work Bundle Answers


Part 4 Work Bundle Print

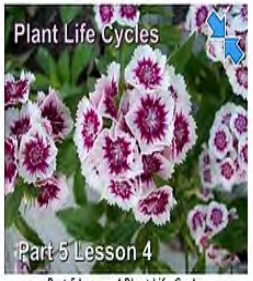
Botany Unit Part 5: 10 Lessons of 50 Minutes and 18 Page Work Bundle, Leaf Identification, Leaf Rubbing Activity, Blades, Venation, Leaf Margins, Leaf Base, Leaf Apex, Petiole, Simple vs. Compound Leaves, Identifying some common leaves, Maples, Oak, Beech, Pines, Poisonous Plants, Case Study on Poison Ivy, Poison Ivy Identification, Ivy Identification Quiz, Other Poisonous Plants, Deciduous Trees, Conifers, Identifying Conifers, Tree Identification Visual Quiz, , Plant Life Cycles, Seed Plant Life Cycles, Gymnosperm, Male vs. Female Cone, Angiosperm, Pollen, Annuals, Biennials, Perennials, Interpretive Dance Plant Life Cycles Group Activity, Flowers, Amazing Flowers Visual Tour, Parts of a Flower, Step by Step drawing on a flower with Parts, Matured Ovaries (Fruits), Stamen, Filament, Anther, Pistil, Stigma, Style, Ovary, Ovule, Sepal, Petals, Nectar Guides, How Flowers Attract Pollinators, Flower Dissection Lab, Visual Quiz Name that Part of a Flower, Exotic Fruits Visual Tour, Poisonous Berries, How Flowers become Fruits, Fruit or Vegetable Visual Standing Quiz, Parts of a Fruit, Epicarp, Mesocarp, Endocarp, Fleshy and Dry Fruits, Simple Fruits, Berries, Drupe, Pome, Aggregate Fruit, Multiple Fruit, Dehiscent Dry Fruit, Legumes, Indehiscent, Animals and Fruits / Seed Dispersal, Uses of Plants Wrap-up, Box Game Review, Crossword Puzzle, Unit Assessment

Part 5 Lesson 1 Leaf Identification



Part 5 Lesson 2 Poison Ivy

Part 5 Lesson 3 Tree Identification Conifer



Part 5 Lesson 4 Plant Life Cycles

Part 5 Lesson 5 Flowers

Part 5 Lesson 6 Dissection Quiz

Part 5 Lesson 7 Fruits and Vegetables

Part 5 Lesson 8 Parts of a Fruit

Part 5 Lesson 9 Review Game

Part 5 Lesson 10 Review Game Answers


Part 5 Work Bundle Answers


Part 5 Work Bundle Print

Botany Unit Part 5

Curriculum Guide

Number of Lessons in each unit (50 min, daily lessons) and difficult rating scale / intended grade level.

=Easier, 

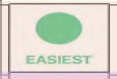
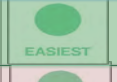
= More difficult, 

=Most difficult

Earth Science Units	Daily Lessons	Intended Grade	
Geology Topics Unit	60 Lessons	6-8 medium difficulty	MORE DIFFICULT
Weather and Climate Unit	40 Lessons	6-8 medium difficulty	MORE DIFFICULT
Astronomy Unit	60 Lessons	6-8 medium difficulty	MORE DIFFICULT
Weathering, Soil Sciences	28 Lessons	5-7 easier	EASIEST
Rivers and Water Quality	25 Lessons	5-7 easier	EASIEST
Water Molecule Unit	20 Lessons	5-7 easier	EASIEST

Earth Science Curriculum

Life Science Units

	Daily Lessons	Intended Grade	
Ecology Feeding Levels Unit	13 Lessons	5-6 easier	
Ecology Interactions Unit	30 Lessons	5-6 easier	
Ecology Abiotic Factors Unit	24 Lessons	5-6 easier	
Botany Unit	50 Lessons	5-7 easier	
Evolution and Natural Selection	40 Lessons	5-7 easier	
Taxonomy and Classification	50 Lessons	6-8 medium difficulty	
Infectious Diseases Unit	30 Lessons	7-9 more difficult	
DNA and Genetics Unit	42 Lessons	8-10 most difficult	
Human Body Systems Unit	85 Lessons	6-8 medium difficulty	
Cell Biology Unit	30 Lessons	8-10 most difficult	

Life Science Curriculum

Physical Science	Daily Lessons	Intended Grade	
Laws of Motion and Machines Unit	33 Lessons	8-10 most difficult	
Matter Energy and the Environment	58 Lessons	7-10 medium difficulty	
Atoms and Periodic Table Unit	44 Lessons	8-10 most difficult	
Science Skills Unit	30 Lessons	5-7 medium difficulty	

Physical Science Curriculum

Entire SlideSpark Science Curriculum

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SlideSpark Science

MIDDLE-LEVEL

EDUCATIONAL RESOURCES

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