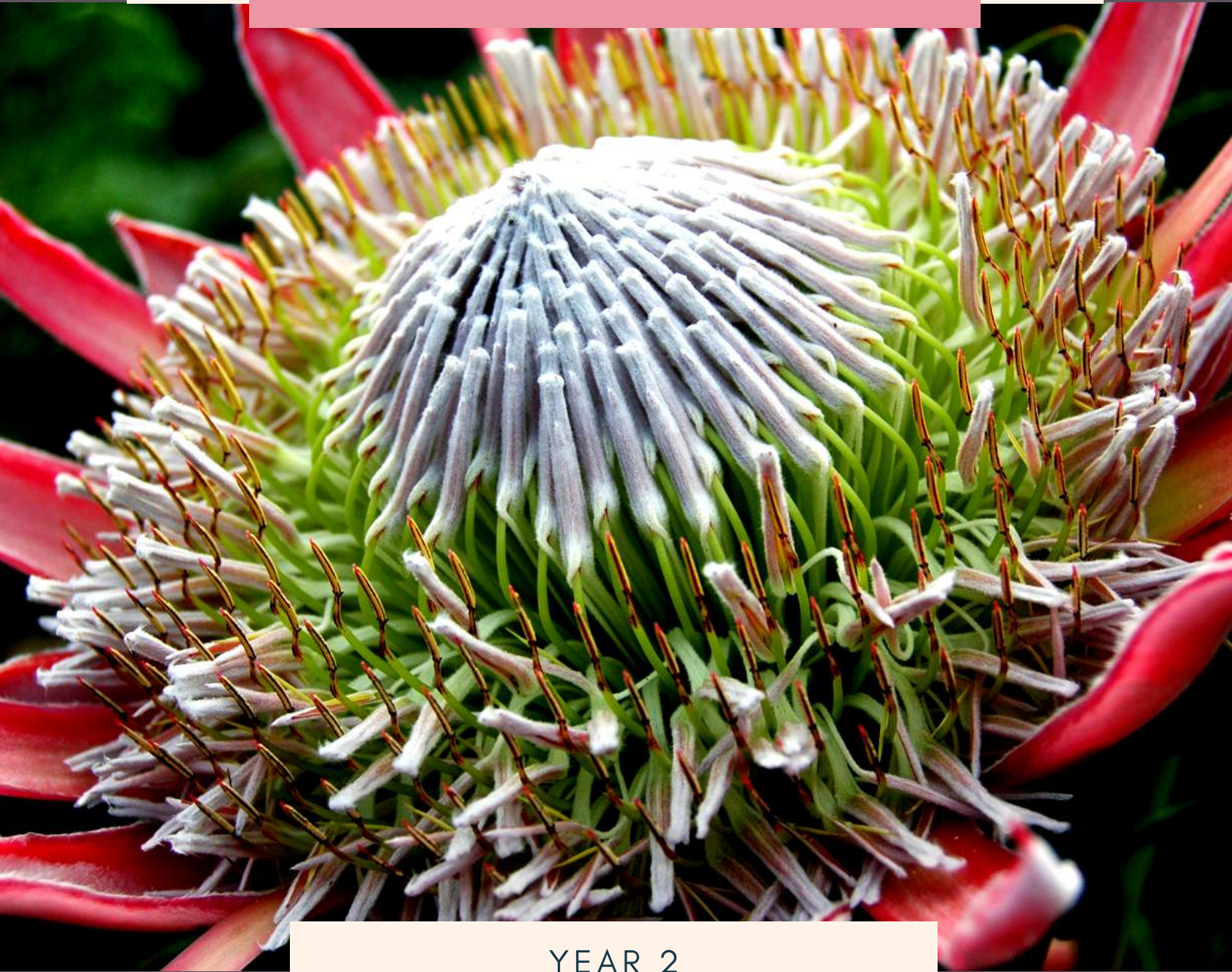


BLOSSOM & ROOT

ELEMENTARY SCIENCE // YEAR 2

Wonders of the Plant & Fungi Kingdoms

PARENT GUIDE



YEAR 2

Exploring the Plant and Fungi Kingdoms



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Blossom & Root

Elementary Science,
Year 2:

Wonders of the Plant & Fungi Kingdoms

A Complete, Hands-On Secular Science Curriculum

Grades 1 - 4

Blossom & Root Elementary Science
Year 2: Wonders of the Plant & Fungi Kingdoms

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Welcome to a Year of Wonder

A Relaxed, Hands-On, and Adventurous Approach to Science in the Early Grades

When I decided I wanted to homeschool my daughters, one of the most difficult tasks I faced was finding a science curriculum that suited our needs. We wanted curriculum that was completely secular, hands-on, and full of opportunities to take our learning outside. We wanted books, and lots of them! We wanted permission to explore, dig deeper, and go off to explore rabbit trails from time to time. But we also wanted structure--just enough to build concepts upon one another in a linear way without the pressure of a rigid schedule. When it came to recording our discoveries, we wanted freedom from the worksheets, tests, and time-consuming lap books that seemed to dominate most of our options--something more akin to a scientist's field journal.

When I couldn't find this particular unicorn, I decided to do what I had done for my early years and kindergarten curriculum--I created it. Since I knew we couldn't be the only family looking for such a thing, I put my heart, soul, and complete focus into crafting a solution for those families too.

Wonders of the Plant and Fungi Kingdoms the second of six planned years of science curriculum, brought to you by Blossom and Root. It is designed to be flexible, adaptable, inspiring, and gentle. My fondest hope is that it will provide discovery, joy, and wonder for the families that use it.

Thank you for your support of Blossom and Root. Please feel free to reach out to me at any time--I am always happy to help!

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Options for Scheduling This Curriculum:

Traditional Schedule:

Aim to complete one unit per week, in order, for a 36-week school year. If you do science once a week, this may mean reading one of the suggested books, completing one of the activity options, and ending with your child recording their experience in the student notebook. If you do science twice a week or more, you may wish to incorporate multiple books and video links, and more of the optional activities per unit.

Relaxed Schedule:

Begin at the beginning and spend as much or as little time in each unit (or "wonder," as we call them) as desired. You can even split this curriculum into two year's worth of science by doing half of it in the first year, and half in the second. This will allow ample time for families that like to incorporate lots of field trips and projects, without added pressure to complete the entire curriculum in one school year.

Scheduling for Seasonal Relevance:

You are welcome to explore the wonders in any order you like, which means you can optimize topics by season. For example, you may want to save the unit on aquatic plants for your spring break trip to the lake district. Or perhaps you want to study conifers in the winter. If this sounds appealing to you, go through the list of wonders at the beginning of this guide and make a note of which ones you'd like to cover in a specific season. This is an excellent approach for families who like to spend a lot of time outdoors, or go on lots of field trips.

How to Plan Out Each Unit (the Simple Way):

A few weeks before you begin a unit, look over it and decide which books or video links you'd like to use and which projects you'd like to do. Highlight them in the teacher's guide here or write them into a separate planner. Refer to the Laboratory Guide for specific supplies you'll need to gather for the activities you'd like to include.

Make It Yours

How to Teach This Curriculum



This curriculum is designed to provide support and inspiration to the parent educator. Above all else, please make it *yours!*

Step One: Wonder

Each unit begins with an introduction to the wonder at hand--whether that is flowers, medicinal plants, or lichen. Together, you and your child will delve into the topic through engaging literature, short videos, and guided conversations.

Step Two: Explore

The next step is to explore the topic through hands-on activities, projects, demonstrations, and experiments. Our curriculum is flexible, providing several options for each wonder so that you may tailor it to your budget, time available, personal preferences, and your child's learning style.

Step Three: Record

The final step is to allow your child to record their experiences. Once again, our curriculum allows for maximum flexibility. Children who are already eager, confident writers may use the student notebook to employ written narration. Others may wish to draw or color a picture of their experience, below which their parent can dictate their oral narration. Still others may prefer to tape or paste in photographs taken of their adventures and activities during that unit--the choice is yours!

Permission to Go Off the Grid

One of the greatest gifts of homeschooling is the ability to follow rabbit trails, and to delve deeper when inspiration calls. We fully encourage this, and promise that the curriculum will be here, waiting for you when you're ready to come back and move on to the next wonder!

Step One: Wonder

Setting the stage for discovery

"Wisdom begins in wonder."

Socrates

The Main Goal

You will begin each unit (or "wonder" as we call them) by introducing the topic to your child through books, short videos, and guided conversations. **The primary goal of this stage is simply to introduce the topic and inspire curiosity.**

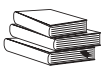
Options for Step One

As with the rest of this curriculum, we focus on providing multiple options for you to choose from, unit by unit:



Category 1: For the Minimalists

If you're pressed for time, short on resources, or simply not as excited about a specific unit, stick with Category 1: For the Minimalists to introduce the topic. This category is designed to touch on the main points with as few resources and as little of time as possible.



Category 2: For the Book Basket Folks

This category will provide a rich list of engaging literature to pick and choose from for your initial introduction. **You absolutely do not need to provide all of these books, every week.** This list is meant to provide *options* for families that prefer a literature-based approach to learning.



Category 3: For the Visual Learners

Some children prefer a more visual model for receiving information, and some topics can be difficult to explain without a visual demonstration. Therefore we provide suggested video links, most of which are hosted on YouTube, to help introduce each topic. **Please screen them ahead of time to be sure they are in line with your family's values and developmental appropriateness for your child.**

For each unit,
choose from one
or multiple
categories to
introduce the
topic and inspire
curiosity.

Step Two: Explore

Choose your own adventure

The Main Goal

The next step for each unit is to explore the topic through hands-on activities, demonstrations, projects, and experiments. **The primary goal of this stage is to allow your child the opportunity to make discoveries about the topic at hand.**

Options for Step Two

As with the rest of this curriculum, we focus on providing multiple options for you to choose from, unit by unit:

Category 4: For the Outdoor Learners

This category was designed for families that prefer to do their learning outdoors. If you and your children love to explore, take field trips, and get your hands good and muddy, this is the category for you!



Category 5: For the Table-Lab Crowd

For families that love "table science" we have designed activities that can be done indoors using (mostly) common household objects. These activities and demonstrations can bring big ideas closer to home and provide hands-on fun for children of multiple ages.



Category 6: For the Crafts-and-Projects Families

Some families really love projects--hand-made exploration of a topic through art projects, crafts, and writing activities. For these families, we have provided suggested projects that are designed to be "on display."



Mix and Match to Choose Your Own Adventure!

Pick and choose from any of these categories to design a unit of science for your family. If you're short on time, one activity will do--you can even stick to the "minimalist" category in step one and call it a week. If you're loving a topic, you may wish to combine multiple categories for exploration and extend your learning for several weeks.

For each unit,
choose from one
or multiple
categories
to provide rich
and engaging
opportunities for
discovery.

Step Three: Record

Documenting the journey



The presentation of the topic belongs to you, the parent educator. What your child takes from that presentation belongs to them.

The Main Goal

The final step for each unit is to give your child a chance to document their experiences through the student notebook. **The primary goal of this stage is to allow your child to record whatever they are inspired to, concerning the topic you investigated together during the previous two steps.**

Options for Step Three

As with the rest of this curriculum, we focus on providing multiple options for you to choose from, unit by unit:

Oral Narration



For this option, your child will give a brief oral narration of what they have learned. You, the parent, may choose to take dictation of their words into the student notebook. They may wish to draw or color something before or after the oral narration in the student notebook. This can also be done in the form of casual conversations together.

Written Narration



If your child is already confidently writing, and enjoys doing it, they may wish to record their own written narration, with or without a drawing, in their student notebook.

Scrapbooking with the Student Notebook



You may wish to treat the student notebook as a scrapbook instead, allowing your child to tape or glue photographs into it that you (or they) take during your activities together. They may wish to add brochures or postcards from field trips, make drawings or notes in the margins, or have you take dictation.

For each unit, have your child document their experiences using one of these options for the student notebook.

Permission to Go Off-Grid

"Curiosity is the wick in the candle of learning."

William Arthur Ward

It's All About the Journey, NOT the Map!

As you move through the following "wonders," you will naturally come across forks in the road where your child wants to stop and dig deeper (e.g. what is it like to be a storm-chaser?) or follow a rabbit trail that springs up (e.g. learning about cacti makes them excited to investigate deserts.) These side-trails can provide some of the richest learning opportunities there are--curiosity-driven, interest-led investigations--so don't ignore them if you can help it.

Many of us feel nervous about "veering off the path" of a curriculum. The thought of learning gaps and self-imposed deadlines can keep us awake at night. We are here to assure you that it is 100 percent a-okay to follow your child's curiosity. This curriculum will be here when you are ready to come back and continue on.

It is also 100 percent a-okay to hurry through a topic that is not very interesting to you, or skip it entirely. We want this curriculum to be yours, so take the liberty to mold it the way you want it and be sure to indulge in those rabbits trails! *(We love them so much that we even flag you down in places where side-voyages may feel natural! If you see the rabbit icon, it means there's an opportunity for a possible rabbit trail.)*

Follow those rabbit trails



Bringing Big Ideas Closer to Home

Where Nature Study Fits Into This Curriculum

"We all have the need to be trained to see, and to have our eyes opened before we can take in the joy that is meant for us in this beautiful life."

Charlotte Mason

Why a Coordinating Nature Study?

With the exception of a stand-alone purchase of *Nature Study, Year Two: Wonders of the Plant and Fungi Kingdoms*, our science and nature study programs for year two are meant to be done together. This does not mean that you always must be on the same unit number in the science program as the corresponding week number in the nature study program (in fact, they don't even have week numbers.) It just means that these two programs were designed to be done throughout the same year.

We believe that science in the early grades should largely concern the natural and physical world of the child: the rocks and the trees and the worms that they can see and touch first-hand. However, many of the concepts in botany and other life sciences can be lofty and abstract for the young mind. Nature study--the investigation and observation of the intimate landscape immediately surrounding a child--can help to bring these big ideas closer to home.

For example, a child in the second grade may not be able to wrap their mind around the cellular structure of a plant, but if given the opportunity to explore leaves with a field microscope while on a hike, they will begin to notice the tiny squares on the leaf, and perhaps even the tiny chloroplasts within them, and ultimately that the concepts they learned in the related science unit are very much present in *their* world. Therefore, *they* are part of those big ideas too.



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Wonder No. 2: Plant
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Wonder / Unit

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Wonder No. 7: Needles

Welcome to Wonder No. 7: Needles

In this unit, you will be exploring needles. Once again, observation is such a great way for kids to learn about the parts of a plant. Get out for a nature walk and examine needles up close, if you can.

There are five "big picture" messages to focus on during this unit:

1) Needles are leaves. Just like broad plant leaves, they capture sunlight, and turn it into food for the plant.

2) Like broad leaves, needles "inhale" carbon dioxide, and "exhale" oxygen, providing the air for us to breath.

3) Instead of shedding every fall, like broad leaves often do in temperate climates, needles can last three or four years. (There are exceptions, like the larch tree.)

4) Needles came about as an adaptation when the climate shifted about 250 million years ago. The climate became cooler and drier than it had been. Needles have a thick, waxy coating that retains more water than a regular leaf. They can survive ice and snow, and have lower wind resistance than big, flat leaves, so they're less likely to make the tree fall over during a big storm.

5) Because of all of these adaptations, we will often find in colder biomes (like the taiga) that trees with needles dominate the landscape.



Possible Rabbit Trail: This is a wonderful time to begin introducing extension units on world biomes. Though we'll explore biomes further in the third grade year, learning about each biome from a foundation of plants really helps the child to see the big picture. During this unit, the **taiga / boreal forest biome** is an excellent extension topic.

1. For the Minimalists:

Look at pages 104 - 111 in *Nature Anatomy*, and pages 22 - 24 in *Botanicum*, and talk about the "big picture" messages for the week.

2. For the Book Basket Folks:

pages 10 - 11, 30 - 33 in *DK Eyewitness: Trees; The Tree Book for Kids and Their Grown-Ups* by Gina Ingoglia; *Redwoods* by Jason Chin; *Tall, Tall Tree* by Anthony D Fredericks; *Sequoia* by Tony Johnston; *Where Would I Be in an Evergreen Tree?* by Jennifer Blomgren; *The Littlest Evergreen* by Henry Cole; *A Walk in the Boreal Forest* by Rebecca L Johnson

3. For the Visual Learners:

From SciShow Kids: Guess That Tree!

Copy & Paste Link: <https://www.youtube.com/watch?v=qFVh2fTR2XA>

From SciShow Kids: Trees That Never Lose Their Leaves
Copy & Paste Link: <https://www.youtube.com/watch?v=hwfQEK29Wrg>

Note: Not all tree with needles are evergreen. See more in Wonder No. 9: Conifers.

From Patrick Haney: Taiga Adaptations. Copy & Paste Link: <https://www.youtube.com/watch?v=RPI3XI8K5bU>

A beautiful video showing Saskatchewan's Boreal Forest
Copy & Paste Link:
<https://www.youtube.com/watch?v=vaFz3cb0dF4&list=PLAzrWuMlidkhqPQoX2Tl6HrsCjo3P0BRz&index=3&t=0s>

From the Laboratory Guide:

4. For the Outdoor Learners:

Wonder No. 7 "Needles Scavenger Hunt"

5. For the Table-Lab Crowd

Wonder No. 7 "Guess the Needle Game"

Wonder No. 7 "Up-Close with Plant Needles Object Lesson"

6. For the Crafts-and-Projects Families:

Wonder No. 7 "Common Conifers Identification Poster, Part One: Needles"

Wonder No. 7 "Taiga / Boreal Forest Plants Collage"

From the Student Notebook:

Complete Wonder No. 7 Entry