

## **Biology for the Grammar Stage Teacher Guide**

Updated Edition, 2nd Printing  
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### **Digital Edition**

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# Biology for the Grammar Stage Introduction to the Updated Edition

Since writing the first edition of *Biology for the Grammar Stage*, I have co-authored *Success in Science: A Manual for Excellence in Science Education* with Bradley Hudson. The purpose of this updated edition was to re-align this program with our research. It now reflects the components of the Classic Method of elementary science instruction suggested in the book. This method is loosely based on the ideas for classical science education that are laid out in *The Well-trained Mind: A Guide to Classical Education at Home* by Jessie Wise and Susan Wise Bauer.

In *Success in Science*, we compare the elementary student to an empty bucket that is waiting to be filled with meaningful information. My goal in writing this curriculum was to provide you with tools to give your elementary student exposure to the topics of animals, the human body and plants, thus building a knowledge base for future studies. For this reason, I have included weekly scientific demonstrations, reading suggestions, notebooking assignments, and additional activities.

This program is designed to be used during the elementary years, specifically 1<sup>st</sup> through 4<sup>th</sup> grade. It includes a buffet of options that can be completed in either two days or five days each. Alternatively, if you desire, you could set aside an hour a week to be your science day in which you do all the readings, narrations, and activities planned for the week. Please feel free to act as the student's scribe as you complete the narration pages and lab reports.

## Student Workbook (SW)

This teacher's guide is designed to work in conjunction with the *Biology for the Grammar Stage Student Workbook*. This workbook is sold separately, but it is critical to the success of this program. It contains all the pages you will need to complete the narrations, lab reports, and multi-week projects. The student workbook gives the students the ability to create a lasting memory of their first journey through biology.

## Scientific Demonstrations

The scientific demonstrations scheduled in the guide generally use easy to find materials and tie into what is being studied. Each one has a corresponding lab report in the student workbook. At this age, you will be the driving force behind these demonstrations, meaning that you will be the one in control and the student will be watching and participating when necessary. These demonstrations are designed to give them a beginners' look at the scientific method and how scientific tests work. It is not necessary to ask them to predict the outcome of the demonstration as they have no knowledge base to determine what the answer should be. However, if the students enjoy predicting or they are able to tell you what will happen, please feel free to let them do so.

Each lab report includes four sections:

1. The "Our Tools" section is for the materials that were used during the demonstration.

2. The “Our Method” section is for a brief description of what was done during the scientific demonstration. This should be in the students words.
3. The “Our Outcome” section is for what the students observed during the demonstration.
4. The “Our Insight” section is for what the students learned from the scientific demonstration.

Any time you see a box for a picture on the lab report you can have the students draw what happened or you can take a picture of the demonstration and glue it in the box. For younger students, I recommend that you do most (if not all) the writing for them on the lab reports.

## Science-oriented Books

The science-oriented books section includes reading assignments from encyclopedias, discussion questions, and additional books for every lesson. Each of the reading assignments should be read with the students or, if they are capable, have them read the assignments on their own. After the reading assignment is completed, discuss the topic with the students using the provided discussion questions. These questions are meant to help them begin to gather their thoughts in preparation for giving a narration.

In this edition of *Biology for the Grammar Stage*, I have also included a list of additional books for you to choose from each week. These are meant to be checked out from the library, and are not necessary to the success of this program. It is there in case you decide that you would like to dig a little deeper into the topics. I have done my best to choose in-print, widely available books, but since every library is different, the books listed may not be available in your area. If that is the case, simply look up the topic in your local card catalog.

## Notebooking

For the notebooking component, you will ask the students to narrate what they have learned from the science-oriented books. They should add their narration to their student workbook. For younger students I recommend that you have them dictate what they have learned to you and then you write this into their student workbook. You can also have the students copy their narration into the workbook. You only need to expect one to two sentences from a first or second grade student.

Next, have the students color the provided picture on the narration page. All the pages and pictures you need are included in the student workbook. I suggest that you read over these pages monthly so that the students get a review of what they have been learning. I have also included optional lapbook assignments in the case that your students prefer to use lapbooks over notebooking.

Finally, go over the vocabulary with the students and enter it into their glossary at the rear of the student workbook. You can write this for them, have them copy the definition, or dictate the definition to the students. If you choose to have the students look up the definitions, I have included a glossary of the terms in this program in the Appendix on pp. 202-204.

## Multi-week Projects and Activities

This guide includes ideas for multi-week projects and additional activities that coordinate with each lesson. The pages and pictures needed for the multi-week projects are included in the student workbook, while the directions for creating them are found in this guide. The additional activities include crafts and other activities that can enhance the students' learning time. There are no sheets to record these additional activities in the student workbook. However, I have included a project record sheet template on pg. 206 of the Appendix of this guide.

## Memorization

The elementary student is very capable of receiving and memorizing information. With this in mind, I recommend that you capitalize on this fact by having your students memorize the included vocabulary and basic facts related to biology. A list of simple poems that you can use to help them memorize the characteristics of animals, plants, and the body systems is included on the unit overview sheet of each unit. Remember that these poems are included as a resource for you to augment students' learning experience and they are not required to use this program successfully.

## Possible Schedules

I have written this updated edition to contain a buffet of activities that you can choose from when guiding the students through their first look at biology. This gives you, the teacher, complete freedom in what you would like to utilize to present and explore the concepts each week. However, I have also included two potential schedules for you to give an idea of how you could schedule each week. You can choose to use these as your guide or create your own. I have included two schedule templates on pp. 207-208 of the Appendix of this guide for you to use.

## Quizzes

We have also created a set of weekly quizzes to use with this program, which can be found at the back of the student workbook. Although these quizzes are not essential, they are helpful in assessing how much the students are retaining. You can also use the quizzes as a review of what the students have studied by giving the quiz orally or by having the students fill each quiz out with the assistance of their workbooks. The correct answers for the quizzes are included at the end of each week in this guide.

## Coordinating Products

The following products by Elemental Science coordinate with this program. These two eBooks are available separately through our website.

- ✦ ***Biology for the Grammar Stage Lapbooking Templates*** — We have created templates for four lapbooks to coordinate with *Biology for the Grammar Stage*. You can use these lapbooks as a means of review or in place of the student workbook. The directions for using these templates are found in this guide under the notebooking section.

- ✦ ***Biology for the Grammar Stage Coloring Pages*** — We have also created a set of coloring pages to use with this program. Although they are not essential, they are helpful for adding in younger students or for reinforcing key concepts for artistic students.

## Helpful Articles

Our goal as a company is to provide you with the information you need to be successful in your quest to educate your student in the sciences at home. This is the main reason we share tips and tools for homeschool science education at our blogs. As you prepare to guide your students through this program, you may find the following articles helpful:

- ✦ ***Classical Science Curriculum for the Grammar Stage Student*** — This article explains the goals of grammar stage science and demonstrates how the classical educator can utilize the tools they have at their disposal to reach these goals.  
 ☞ <http://elementalblogging.com/classical-science-curriculum-grammar/>
- ✦ ***Scientific Demonstrations vs. Experiments*** — This article shares about these two types of scientific tests and points out how to employ scientific demonstrations or experiments in your homeschool.  
 ☞ <http://elementalscience.com/blogs/news/89905795-scientific-demonstrations-or-experiments>
- ✦ ***The Basics of Notebooking*** — This article clarifies what notebooking is and describes how this method can be a beneficial addition to your homeschool.  
 ☞ <http://elementalblogging.com/the-basics-of-notebooking/>

## Additional Resources

The following page contains quick links to the activities suggested in this guide along with several helpful downloads:

- ☞ <https://elementalscience.com/blogs/resources/bgs>

## Final Thoughts

As the author and publisher of this curriculum I encourage you to contact me with any questions or problems that you might have concerning *Biology for the Grammar Stage* at support@elementalscience.com. I will be more than happy to answer them as soon as I am able. You may also get additional help at our yahoo group ([http://groups.yahoo.com/group/elemental\\_science/](http://groups.yahoo.com/group/elemental_science/)). I hope that you will enjoy *Biology for the Grammar Stage*!

## Required Book List

The following books are scheduled for use in this guide. You will need to purchase them or find a suitable substitute to complete this program.

### Encyclopedias

**Animals Unit** (Choose **one** age-appropriate option.)

- ☞ *Kingfisher First Encyclopedia of Animals (best for K through 2<sup>nd</sup> grade)* **OR**
- ☞ *DK Encyclopedia of Animals (best for 2<sup>nd</sup> through 4<sup>th</sup> grade)*

**Human Body Unit** (Choose **one** age-appropriate option.)

- ☞ *DK First Human Body Encyclopedia (best for 1<sup>st</sup> through 3<sup>rd</sup> grade)* **OR**
- ☞ *Kingfisher Science Encyclopedia (best for 4<sup>th</sup> through 6<sup>th</sup> grade)*

**Plants Unit** (Choose **one** age-appropriate option.)

- ☞ *Basher Science: Biology - Life as we know it! (best for 1<sup>st</sup> through 4<sup>th</sup> grade)* **OR**
- ☞ *Usborne Science Encyclopedia (best for 3<sup>rd</sup> through 5<sup>th</sup> grade)*

### Scientific Demonstration Books

You will need both of these books to complete the scientific demonstrations in this program.

- ☞ *Janice VanCleave's Biology for Every Kid* **AND**
- ☞ *Janice VanCleave's Science Around the World*

## Additional Books Listed by Week

The books listed below are completely optional! They are not required to complete this program. Instead, this list is merely a suggestion of the additional books that are available to enhance your studies. This list is by no means exhaustive.

### Animals Unit

#### Animals Week 1

- ☞ *A Desert Habitat (Introducing Habitats)* by Kelley Macaulay and Bobbie Kalman
- ☞ *About Habitats: Deserts* by Cathryn P. Sill
- ☞ *Life in the Desert (Pebble Plus: Habitats Around the World)* by Alison Auch
- ☞ *A Grassland Habitat (Introducing Habitats)* by Kelley Macaulay and Bobbie Kalman
- ☞ *Grasslands (About Habitats)* by Cathryn P. Sill
- ☞ *A Savanna Habitat (Introducing Habitats)* by Bobbie Kalman
- ☞ *A Rainforest Habitat (Introducing Habitats)* by Molly Aloian

#### Animals Week 2

- ☞ *A Forest Habitat (Introducing Habitats)* by Bobbie Kalman
- ☞ *Northern Refuge: A Story of a Canadian Boreal Forest* by Audrey Fraggalosch
- ☞ *The Arctic Habitat (Introducing Habitats)* by Molly Aloian and Bobbie Kalman

## Supplies Needed by Week

### Animals Unit

Week	Supplies needed
1	Shoe-box, Construction paper, Glue, Markers
2	Newspaper, Plain paper, Black and green construction paper
3	2 Toilet paper tubes, Piece of foil, Piece of black construction paper, 2 Rubber bands, Flashlight
4	A pack of colored pipe cleaners, 4 Wooden stakes (or pencils), String (about 80 ft.), Ruler
5	4x4 Piece of cardboard, 1 Cup sand or salt, Dime, Large jar lid
6	2 Small cans, Washcloth, Rubber band
7	Paper cups, Ticking watch, Ruler
8	Two thermometers, 2 Glasses, One large bowl
9	Rubber bands
10	2 Glass jars, Box at least 2 inches wider and taller than the jars, Cotton balls, 2 Thermometers
11	Plastic soda bottle, Wood dowel, Seeds
12	1 Clear glass bowl, Measuring cup, Liquid oil, Powdered detergent, Measuring spoon
13	Scissors, Notebook paper, Ruler
14	1 Raw egg, 1 Jar with lid, White vinegar, Measuring tape
15	2 Thermometers, Trowel, White towel
16	No supplies needed.
17	Salt, Measuring spoon, 2 Shallow bowls, 1 Small cucumber, Masking tape, Marker
18	Suction cup, Rock
19	String
20	Paper clip, Printout from Science Around the World, Paint for butterfly, Construction paper

### Human Body Unit

Week	Supplies needed
1	Typing paper, Pencil, Clear tape, Magnifying glass

<b>Week</b>	<b>Supplies needed</b>
<b>2</b>	1 Raw chicken bone, 1 Jar with lid, White vinegar
<b>3</b>	Items of various weights, such as a paper clip, toothbrush, glass, a can, a book
<b>4</b>	A large book or something else that will make a loud noise, Cotton balls (or rolled-up paper towels), See-through barrier (a wire screen, plastic or glass window)
<b>5</b>	Mirror, Toothpicks, Blindfold, Clothespin, Apple, Onion, Pencils, Masking tape
<b>6</b>	Modeling clay, Paper, Match
<b>7</b>	Plastic dishpan, 2 Feet of aquarium tubing, 1 Gallon milk jug, Masking tape, Pens
<b>8</b>	Paper towels, Slender glass jar, Masking tape, Marking pen
<b>9</b>	Family pictures
<b>10</b>	Milk, Measuring cup, 2 Pint Jars

### Plants Unit

<b>Week</b>	<b>Supplies needed</b>
<b>1</b>	Alcohol, Green leaf, Coffee filter, Pencil, Baby food jar, Ruler
<b>2</b>	Measuring cup, 2 Glasses, 1 White carnation with long stem, Red and blue food coloring
<b>3</b>	10 or 12 Dry pinto beans, Jar, Paper towels
<b>4</b>	Pine cone (tightly closed), Magnifying glass
<b>5</b>	1 Glass, A piece of wilted celery, Blue food coloring
<b>6</b>	Paper towels, 4 Pinto beans, Masking tape, Drinking glass, Marking pen

# Plants Unit Overview

## (6 weeks)

### Books Scheduled

#### Encyclopedias

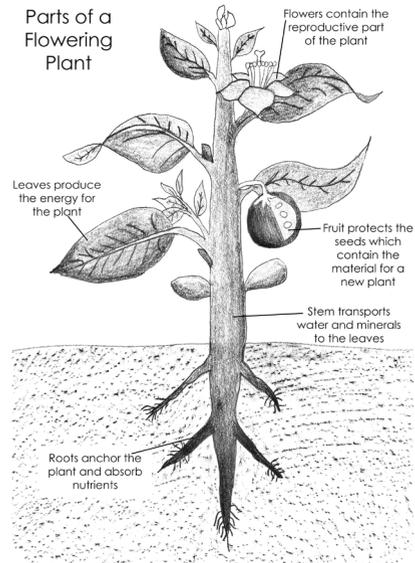
 *Basher Science: Biology - Life as we know it!*

OR

 *Usborne Science Encyclopedia*

#### Scientific Demonstration Book

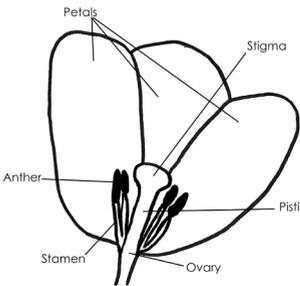
 *Janice VanCleave's Biology for Every Kid*



### Sequence for Study

-  Week 1: Leaves
-  Week 2: Flowers
-  Week 3: Fruits and Seeds
-  Week 4: Nuts, Cones, and Spores
-  Week 5: Stems
-  Week 6: Roots

### Plant Poems to Memorize



#### Parts of a Flower

The bud becomes a flower  
 It's happening this very hour  
 The flower has petals so bright  
 It attracts the insect in flight  
 The stamen provides the pollen it needs  
 To join with the pistil and make a seed

#### Parts of a Plant

The plant stem holds it up high  
 The leaves reach way up to the sky  
 It has roots that go into the ground  
 Gathering nutrients and keeping balance sound

### Supplies Needed for the Unit

Week	Supplies needed
1	Alcohol, Green leaf, Coffee filter, Pencil, Baby food jar, Ruler

<b>Week</b>	<b>Supplies needed</b>
<b>2</b>	Measuring cup, 2 Glasses, 1 White carnation with long stem, Red and blue food coloring
<b>3</b>	10 or 12 Dry pinto beans, Jar, Paper towels
<b>4</b>	Pine cone (tightly closed), Magnifying glass
<b>5</b>	1 Glass, A piece of wilted celery, Blue food coloring
<b>6</b>	Paper towels, 4 Pinto beans, Masking tape, Drinking glass, Marking pen

### **Unit Vocabulary**

1. **Leaf** - The part of the plant that makes the food for the plant.
2. **Bud** - A swelling on a plant stem containing tiny flower parts ready to burst into a bloom.
3. **Flower** - The reproductive parts of a plant.
4. **Seed** - The part of the plant that contains the beginnings of a new plant.
5. **Cone** - A type of dry fruit produced by a conifer.
6. **Stem** - The part of the plant that holds it upright and supports the leaves and flowers.
7. **Roots** - The part of the plant that anchors the plant firmly to the ground and absorbs water and nutrients.

## Week 1: Leaves Lesson Plans

### Scientific Demonstration: Leaf Colors

#### Supplies Needed

- ✓ Alcohol
- ✓ Green leaf
- ✓ Coffee filter
- ✓ Pencil
- ✓ Baby food jar
- ✓ Ruler

#### Purpose

This demonstration is meant to help the students to see the different colors in a leaf.

#### Instructions and Explanation

The instructions and explanation for this scientific demonstration are found on pp. 38-39 of *Janice VanCleave's Biology for Every Kid*. Have the students complete the Lab Report on SW pg. 77.

#### Take it Further

Repeat the demonstration with different colored leaves to see if you get a different result. (*The students should see different colors. For example, if the leaf is orange, they will see red and yellow.*)

### Science-Oriented Books

#### Reading Assignments

- ☞ *Basher Biology* pg. 114 (*Leaves*), pg. 112 (*Chlorophyll*)
- ☞ *Usborne Science Encyclopedia* pp. 258-259 (*Leaves*), pp. 264 (*Plant Food*)

**(Optional) Additional topic to explore this week:** Leaf Structure (USE pp. 260-261)

#### Discussion Questions

After reading the selected pages from the encyclopedias, ask the following questions in your discussion time:

##### Leaves

- ? What does the leaf do for a plant?
- ? Are all leaves the same color, size, and shape?

##### Photosynthesis

- ? What does chlorophyll do?
- ? What is photosynthesis?

#### (Optional) Additional Books

- ☞ *Why Do Leaves Change Color?* (*Let's-Read-and-Find... Science, Stage 2*) by Betsy Maestro
- ☞ *Leaves (Designs for Coloring)* by Ruth Heller

- ☞ *Leaf Jumpers* by Carole Gerber
- ☞ *Leaves* by David Ezra Stein
- ☞ *Photosynthesis: Changing Sunlight Into Food (Nature's Changes)* by Bobbie Kalman

## Notebooking

### Writing Assignments

- ☐ **Narration Page** – Have the students dictate, copy, or write one to four sentences on what they have learned about leaves and photosynthesis on SW pg. 76. For example, this week, the student could dictate, copy, or write the following for leaves:

*They are different from each other.*

*They change color to brown when they die.*

*The leaves make the plant's food.*

- ☐ **(Optional) Lapbook** – Throughout this unit, the students can complete a Parts of a Plant Tab-book. For this week, have the students cut out and color the cover and leaves page on pg. 51 from *Biology for the Grammar Stage Lapbooking Templates*. Ask the students what they have learned about leaves this week and then add their narration to that page of the tab-book. Have them color the pictures on the two sheets and save them until they assemble the booklet in the last week of the unit.

### Vocabulary

The following definition is a guide. The students' definitions do not need to match word for word.

- 🔍 **Leaf** – The part of the plant that makes the food for the plant. (SW pg. 94)

## Multi-week Projects and Activities

### Unit Project

- ✂ **Plant Growth Project** – During this unit, the students will record the growth of a bean plant. This week, have the students begin this project by planting their seeds. They will need dirt, a small pot, water, and a pinto bean seed. Have them fill the pot with dirt and gently press the bean seed just under the surface of the dirt. Have them water the pot well before placing it on a windowsill that receives direct sun light. Over the week, have them check their pots and water the plant when the soil is dry. On Friday, have them measure and record how much it has grown on the Plant Growth Record Chart on SW pg. 75.
- ✂ **(Optional) Nature Walk Sheets** – Each week, take a nature walk to look for flowers and unique leaves. If possible, have the students collect the leaves to take them home and press; if not, take a picture of the samples. Once you are back at home, have the students identify the flowers and leaves they found using a field guide book from the library or the Internet. Have them record their findings on a Nature Walk Sheet found in the Appendix of this guide on pg. 198.

## Projects for this Week

- ✂ **Coloring Pages** = You can have the students color the following pages from *Biology for the Grammar Stage Coloring Pages*: Leaves pg. 92, Photosynthesis pg. 93.
- ✂ **Leaves** = Have the students make a leaf rubbing booklet. Go on a nature walk and collect several different kinds of leaves—try to include pine needles in the collection. Once at home, have the students use the samples to make a booklet of leaf rubbings. Have them begin this process by identifying the leaves they have collected. Then, have them place each leaf under a piece of paper and rub on the top of the same paper with a crayon until the shape of the leaf appears. Have them label the page with the type of leaf and set it aside. Once they have created a page for each of the leaves, have them bind the book together and create a cover.
- ✂ **Photosynthesis** = Have the students test to see if light is really necessary for photosynthesis. They will need a live plant and a dark room, like a closet, for this activity. Have the students place the plant in the dark room where it will not receive any light for three days. Have them check the plant every day and observe what happens. After three days, have them place the plant back in the full sun and observe what happens over the next few days. Be sure to have the students water the plant as needed throughout the week.

## Memorization

- 🦋 This week, begin working on memorizing the *Parts of a Flower* poem. (SW pg. 103)

### Parts of a Flower

The bud becomes a flower  
 It's happening this very hour  
 The flower has petals so bright  
 It attracts the insect in flight  
 The stamen provides the pollen it needs  
 To join with the pistil and make a seed

## Quiz

### Weekly Quiz

- 🦋 “Plants Unit Week 1 Quiz” on SW pg. Q-35.

### Quiz Answers

1. Leaf
2. Photosynthesis
3. True
4. Answers will vary

## Possible Schedules for Week 1

Two Days a Week Schedule	
<input type="checkbox"/> Read about Leaves <input type="checkbox"/> Add information on leaves to the Narration Page <input type="checkbox"/> Do the Scientific Demonstration: Leaf Color <input type="checkbox"/> Begin the Plant Growth Project <input type="checkbox"/> Define leaf	<input type="checkbox"/> Read about Chlorophyll (or Plant Food) <input type="checkbox"/> Add information on photosynthesis to the weekly Narration Page <input type="checkbox"/> Measure and record the growth of your plant for the Plant Growth Project <input type="checkbox"/> Work on memorizing the <i>Parts of a Flower</i> poem <input type="checkbox"/> Take the Plants Week 1 quiz

Five Days a Week Schedule				
<input type="checkbox"/> Begin the Plant Growth Project <input type="checkbox"/> Define leaf	<input type="checkbox"/> Read about Leaves <input type="checkbox"/> Add information on leaves to the Narration Page <input type="checkbox"/> Do the Leaves Project	<input type="checkbox"/> Do the Scientific Demonstration: Leaf Color	<input type="checkbox"/> Read about Chlorophyll (or Plant Food) <input type="checkbox"/> Add information on photosynthesis to the Narration Page <input type="checkbox"/> Do the Photosynthesis Project	<input type="checkbox"/> Take the Plants Week 1 quiz <input type="checkbox"/> Measure and record the growth of your plant for the Plant Growth Project
<b>All Week Long</b> <input type="checkbox"/> Work on memorizing the <i>Parts of a Flower</i> poem				

### Notes

## Week 2: Flowers Lesson Plans

### Scientific Demonstration: Water Flow

#### Supplies Needed

- ✓ Measuring cup
- ✓ 2 Glasses
- ✓ 1 White carnation with a long stem
- ✓ Red and blue food coloring

#### Purpose

This demonstration is meant to help the students to see how water is transported through plant stems.

#### Instructions and Explanation

The instructions and explanation for this scientific demonstration are found on pp. 18-19 of *Janice VanCleave's Biology for Every Kid*. Have the students complete the Lab Report on SW pg. 79.

#### Take it Further

Repeat the demonstration with different colors of food coloring or with different kinds of flowers, such as a daisy, to see if you get a different result.

### Science-Oriented Books

#### Reading Assignments

☞ *Basher Biology* pg. 34 (*Flowering Plants*), pg. 118 (*Flower*), pg. 120 (*Pollen*)

☞ *Usborne Science Encyclopedia* pp. 270-271 (*Flowering Plants, part 1*)

(Optional) Additional topic to explore this week: Pollination (USE pp. 272-273)

#### Discussion Questions

After reading the selected pages from the encyclopedias, ask the following questions in your discussion time:

##### Flowering Plants

- ? What is common to all flowering plants?
- ? What types of plants are flowering plants?

##### Flowers

- ? Why do flowers have bright colors?
- ? What can flowers produce?

##### Pollen

- ? What is pollen?
- ? Where is the pollen produced in the flower?

#### (Optional) Additional Books

☞ *The Reason for a Flower (World of Nature)* by Ruth Heller

- ☞ *A Weed Is a Flower* by Alike
- ☞ *Flower (Life Cycle of A...)* by Molly Aloian

## Notebooking

### Writing Assignments

- ☐ **Narration Page** – Have the students dictate, copy, or write one to four sentences on what they have learned for flowering plants, flowers, and pollen on SW pg. 78. They can include information that they find interesting on each topic or material that you would like them to remember. (*See Plants Week 1 for a sample.*)
- ☐ **(Optional) Lapbook** – Have the students work on their Parts of a Plant Tab-book. For this week, have the students cut out and color the cover and flowers page on pg. 52 from *Biology for the Grammar Stage Lapbooking Templates*. Ask the students what they have learned about leaves this week and then add their narration to that page of the tab-book. Have them color the pictures on the sheet and save it until they assemble the booklet in the last week of the unit.
- ☐ **(Optional) Lapbook** – Have the students complete the Pollen Mini-book on pg. 54 from *Biology for the Grammar Stage Lapbooking Templates*. Have them cut out and color the mini-book. Ask them what they have learned about pollen. Write their narration sentences on the inside of the book. Finally, glue the mini-book into the lapbook.
- ☐ **(Optional) Lapbook** – Have the students complete the Parts of a Flower Mini Tab-book on pg. 55 from *Biology for the Grammar Stage Lapbooking Templates*. Have them cut out and color the pages of the mini tab-book. Then, have them label the bud page with bud and stem, and the flower page with pistil, stamen, and petals. Finally, have the students staple the pages together and glue the mini tab-book into the lapbooks.
- ☐ **(Optional) Lapbook** – Have the students add the Parts of a Flower Poem on pg. 54 from *Biology for the Grammar Stage Lapbooking Templates* to their lapbook. Have them cut out and color the poem sheet. Once they are finished, have the students glue the poem into the lapbook.

### Vocabulary

The following definitions are a guide. The students' definitions do not need to match word for word.

- 📖 **Bud** – A swelling on a plant stem containing tiny flower parts ready to burst into a bloom. (SW pg. 91)
- 📖 **Flower** – The reproductive parts of a plant. (SW pg. 93)

## Multi-week Projects and Activities

### Unit Project

- ✂ **Plant Growth Project** – During this unit, the students will record the growth of a bean plant. This week, have them water the plant as necessary. On Friday, have them measure and record how much it has grown on the Plant Growth Record Chart on SW

pg. 75.

- ✂ **(Optional) Nature Walk Sheets** = Each week, take a nature walk to look for flowers and unique leaves. If possible, have the students collect the leaves to take them home and press; if not, take a picture of the samples. Once you are back at home, have the students identify the flowers and leaves they found using a field guide book from the library or the Internet. Have them record their findings on a Nature Walk Sheet found in the Appendix of this guide on pg. 198.

### Projects for this Week

- ✂ **Coloring Pages** = You can have the students color the following pages from *Biology for the Grammar Stage Coloring Pages*: Flowering Plants pg. 94, Flowers pg. 95, Pollen pg. 96.
- ✂ **Flowering Plants** = Plant a flower box with different types of flowers with the students. As you plant the flowers, talk about the similarities and differences between the plants. Also take some time to point out the various parts you have studied so far.
- ✂ **Flowers** = Dissect a flower with the students. Purchase a lily or other flower with clearly visible parts. As you dissect the flower, be sure to point out the various parts to the students. For a more detailed explanation of this project, visit the following website:  
 ☞ <https://elementalscience.com/blogs/science-activities/94044099-how-to-dissect-a-flower>
- ✂ **Pollen** = Have the students learn about pollination with cheetos. You can find the directions for this project at the following website:  
 ☞ <http://littlekinderwarriors.com/2011/04/pollination-science-lesson.html>

### Memorization

- ☛ Work on memorizing the *Parts of a Flower* poem. (SW pg. 103)

#### Parts of a Flower

The bud becomes a flower  
 It's happening this very hour  
 The flower has petals so bright  
 It attracts the insect in flight  
 The stamen provides the pollen it needs  
 To join with the pistil and make a seed

### Quiz

#### Weekly Quiz

- ☛ “Plants Unit Week 2 Quiz” on SW pg. Q-36.

#### Quiz Answers

1. True
2. All
3. False (*Flowers come in many different shapes and sizes.*)
4. Answers will vary

## Possible Schedules for Week 2

<b>Two Days a Week Schedule</b>	
<input type="checkbox"/> Read about Flowering Plants (or Flowering Plants, 1st page) <input type="checkbox"/> Add information on flowering plants to the Narration Page <input type="checkbox"/> Do the Scientific Demonstration: Water Flow <input type="checkbox"/> Define bud and flower <input type="checkbox"/> Work on memorizing the <i>Parts of a Flower</i> poem	<input type="checkbox"/> Read about Flowers and Pollen (or Flowering Plants, 2nd page) <input type="checkbox"/> Add information to the weekly Narration Page <input type="checkbox"/> Measure and record the growth of your plant for the Plant Growth Project <input type="checkbox"/> Take the Plants Week 2 quiz

<b>Five Days a Week Schedule</b>				
<input type="checkbox"/> Read about Flowering Plants (or Flowering Plants, Intro) <input type="checkbox"/> Add information on flowering plants to the Narration Page <input type="checkbox"/> Do the Flowering Plants Project	<input type="checkbox"/> Read about Flowers (or Flowering Plants, 1st page) <input type="checkbox"/> Add information on flowers to the Narration Page <input type="checkbox"/> Do the Flowers Project	<input type="checkbox"/> Do the Scientific Demonstration: Water Flow <input type="checkbox"/> Define bud and flower	<input type="checkbox"/> Read about Pollen (or Flowering Plants, 2nd page) <input type="checkbox"/> Add information on pollen to the Narration Page <input type="checkbox"/> Do the Pollen Project	<input type="checkbox"/> Take the Plants Week 2 quiz <input type="checkbox"/> Measure and record the growth of your plant for the Plant Growth Project
<b>All Week Long</b>				
<input type="checkbox"/> Work on memorizing the <i>Parts of a Flower</i> poem				

## Notes

# Biology for the Grammar Stage

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Student Workbook

### Plant Growth Chart

18						
17						
16						
15						
14						
13						
12						
11						
10						
9						
8						
7						
6						
5						
4						
3						
2						
1						
Inches	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6



# Leaf Colors

## Our Tools

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## Our Method

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## Our Outcome

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## Our Insight

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**My Results**





### Flowering Plants

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### Flowers

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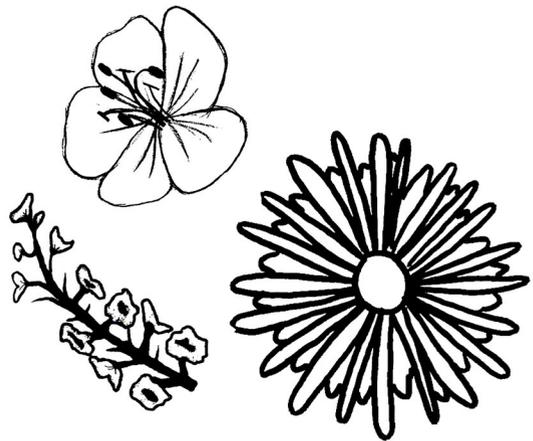
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### Pollen

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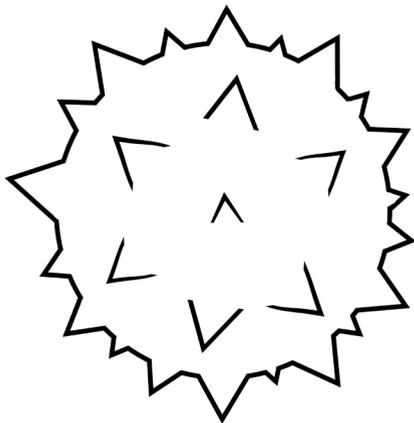
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# Lab Report: Water Flow

## Our Tools

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## Our Method

What it looked like

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## Our Outcome

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## Our Insight

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# Biology for the Grammar Stage

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## Glossary

Alveoli —



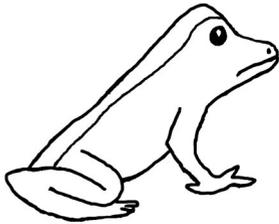
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Amphibian —



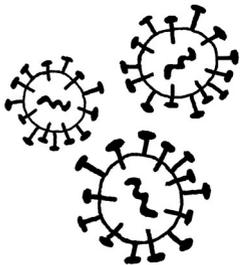
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Bacteria —



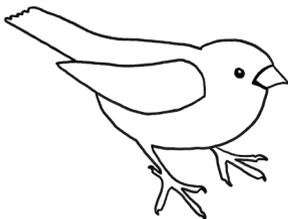
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Bird —



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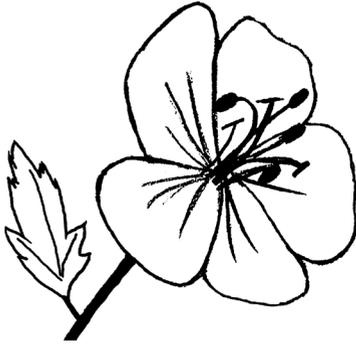
# Biology for the Grammar Stage

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Memory Work

## Plants Unit

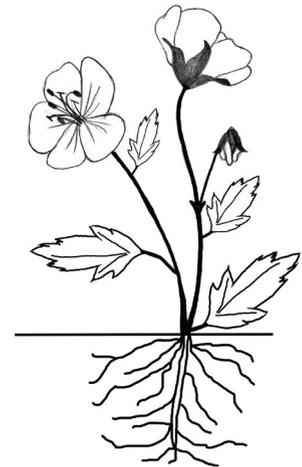
### Parts of a Flower



The bud becomes a flower  
 It's happening this very hour  
 The flower has petals so bright  
 It attracts the insect in flight  
 The stamen provides the pollen it needs  
 To join with the pistil and make a seed

### Parts of a Plant

The plant stem holds it up high  
 The leaves reach way up to the sky  
 It has roots that go into the ground  
 Gathering nutrients and keeping balance  
 sound



# Biology for the Grammar Stage

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Quizzes

## Plants Week 1 Quiz

1. A \_\_\_\_\_ is the part of the plant that makes the food.

leaf

stem

flower

2. Circle the name of the process where light energy is turned into food for a plant.

respiration

photosynthesis

churning

3. **True or False:** Chlorophyll is able to absorb sunlight.

4. What is the most interesting thing you learned this week?

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## Plants Week 2 Quiz

1. **True or False:** Pollen is made in the male parts of the flower and fertilizes the \ female parts of the flower.
2. Circle all of the things flowers do for the plant.

Produce seeds

Attract insects

Are the reproductive part of the plant

3. **True or False:** All flowers are the same size.
4. What is the most interesting thing you learned this week?

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