



SCIENCE
FOR ♥
Little Hearts
AND
Hands ♥
♥

FIELDS *and* FLOWERS

PARENT GUIDE



SCIENCE FOR LITTLE HEARTS AND HANDS
FIELDS AND FLOWERS

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TABLE OF CONTENTS

About This Course	4	Seeds	24	Worms.....	48
Lesson Overview	5	Garden Flowers.....	26	Crustaceans.....	50
Frequently Asked Questions ..	6	Desert Plants	28	Slithery Snakes.....	52
Correlated Books	7	Plants That Eat.....	30	Grasshoppers and Crickets...	54
Activity Supplies.....	8	Parts of a Plant.....	32	Lizards.....	56
Trees That Live and Sleep ...	10	Edible Plants.....	34	Ladybugs	58
Trees Year Round	12	Butterflies.....	36	Dragonflies.....	60
The Tallest Trees	14	Honeybees	38	Fireflies.....	62
Tree Bark.....	16	Ants.....	40	Frogs.....	64
Tree Sap and Syrup.....	18	Snails and Slugs.....	42	Fish.....	66
Mushrooms and Moss	20	Mosquitoes.....	44	Water Plants.....	68
Wildflowers.....	22	Beetles	46		



About This Course

Little children's hearts and minds are most impressionable during the preschool and early elementary years, so it's an important time for molding the way they view learning. Your enthusiasm while teaching in a positive and uplifting manner can help foster a love of learning and a desire for all things good and beautiful. This course strives to assist you in creating a solid educational foundation through fun, interactive, hands-on lessons that require minimal preparation.

What Does the Course Set Include?

- **Full-color Parent Guide**
- **The Big Book of Science Stories**
The Big Book of Science Stories contains beautifully illustrated stories that will inspire interest and wonder in a variety of science topics.
- **Lesson Videos**
Lesson videos are included and will be accessed every other lesson. These videos share interesting facts about the topics studied in a fun and engaging manner.

How to Get Started with This Course

No preparation time is required for this course. Some activities will need additional supplies, which are listed on pages 8 and 9.

To complete lessons, simply follow the instructions on each page. Instructions in orange text are for you; text in black is what you read to the child.



Lesson Overview

The *Science for Little Hearts and Hands: Fields and Flowers* course consists of 30 lessons. Each lesson is 2 pages, is parent-directed, and provides detailed teaching for young learners. The lessons are taught either in story or video format, with directions for the parent included in the lesson. These lessons can be completed in any order, which allows the parent to follow his or her child's interests.

Lesson Text

To complete lessons, simply follow the instructions on each page. Instructions in orange text are for you; text in black is what you read to the child.



Each lesson has a brief introduction, then instructs you either to read one story from *The Big Book of Science Stories* or to watch a short video. Finally, return to this *Parent Guide* for discussion questions and optional activities.

The Big Book of Science Stories

If instructed to do so in the lesson, read the suggested story to the child, taking time to enjoy the detailed illustrations. Every other lesson includes a story from this resource.

Videos

Video lessons can be found at goodandbeautiful.com/heartsandhands (password is "littles"). Every other lesson includes a video from this resource.

Activities

Opening activities are listed at the beginning of each lesson, and optional activities are listed at the end of each lesson. Any supplies needed are listed on pages 8 and 9 and at the beginning of each lesson. These activities are not required but are offered as enhanced learning opportunities for you to complete with your child. Some optional activities are suggestions for crafts or games, while others will direct you to The Good and the Beautiful Blog at goodandbeautiful.com/littlesactivities for additional ideas.

Important Safety Notice

The optional activities in this course may suggest using small items such as dried beans. Please monitor all young children in your home around these items to prevent problems with choking. If you feel these items put any of your children at risk, do not use them.

Frequently Asked Questions

How long will a lesson take?

Lesson length will vary greatly between children. Have the child do as much work each day as the child's attention span will allow. You do not need to complete one lesson a day. You might do more or less than that. Look for cues of frustration or fatigue to help you know when to finish. The child will learn much from you as you display love, patience, and enthusiasm for learning. At this age, it's important that the learning feels more like fun to the child than something forced or unpleasant.

Do you include any specific doctrine?

No, the goal of our curriculum is not to teach doctrines specific to any particular Christian denomination but to teach general principles, such as honesty, hard work, and kindness.

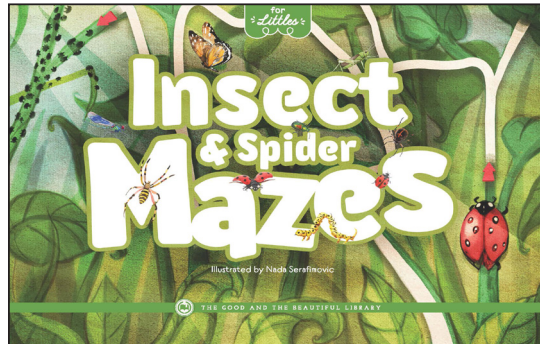
Is there anything I need to do to prepare for a lesson?

This course is written as an open-and-go course. Activity supplies are listed on pages 8 and 9, and access to the video link is needed for half of the lessons.



Correlated Books

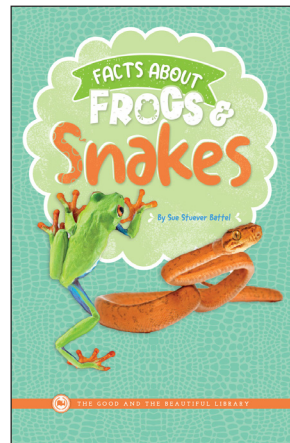
The Good and the Beautiful Library has several books that correlate well with *Little Hearts and Hands: Fields and Flowers*. It can be a wonderful experience for children to read books on their levels related to the subjects they are learning in science. The library includes both fiction and nonfiction books organized according to reading level.



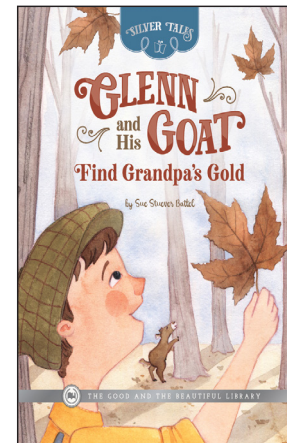
Insect & Spider Mazes



Butterflies and Beetles Flip Books



Facts About Frogs and Snakes
by Sue Stuever



Glenn and His Goat Find Grandpa's Gold
by Sue Stuever

Activity Supplies

Opening activities are listed at the beginning of each lesson, and optional activities are listed at the end of each lesson. Optional activities are not required but are offered as enhanced learning opportunities for you to complete with your child.

Lesson 1: Trees That Live and Sleep

Optional Activity

- paper
- several leaves
- several crayons

Lesson 2: Trees Year Round

Optional Activity

- pine cones and/or evergreen branches
- magnifying glass
- tweezers

Lesson 3: The Tallest Trees

Opening Activity

- measuring tape

Optional Activity

- driveway chalk



Lesson 4: Tree Bark

Opening Activity

- 1 cinnamon stick per child

Lesson 5: Tree Sap and Syrup

Optional Activity

- ingredients for favorite waffle or pancake recipe
- pure maple syrup



Lesson 8: Seeds

Opening Activity

- a fruit with seeds (more than one variety if desired)

Lesson 9: Garden Flowers

Optional Activity

- 1 or 2 store-bought flower bouquets
- 1 or 2 flower vases

Lesson 10: Desert Plants

Opening Activity

- 1 toothpick

Optional Activity

- world map or globe

Lesson 11: Plants That Eat

Optional Activity

- store-bought Venus flytrap or other carnivorous plant

Activity Supplies cont.

Lesson 12: Parts of a Plant

Optional Activity

- 1 small plant from outside

Lesson 13: Edible Plants

Opening Activity

- 1 piece of fruit
- 1 vegetable

Optional Activity

- lettuce
- other edible salad ingredients

Lesson 14: Butterflies

Opening Activity

- toilet paper

Lesson 16: Ants

Opening Activity

- a few moderately heavy household items

Optional Activity

- ant farm

Lesson 17: Snails and Slugs

Opening Activity

- 1 piece of paper
- 1 spoon
- white craft glue
- optional decorative craft items

Optional Activity

- 1 piece of paper
- writing utensil

Lesson 18: Mosquitoes

Opening Activity

- 1 drinking cup per child
- 1 straw per child
- 1 rubber band or hair elastic per child
- clear wrap or foil
- water



Lesson 19: Beetles

Opening Activity

- crunchy food like an apple or a few nuts

Lesson 20: Worms

Opening Activity

- several pillows
- several comforters
- several blankets

Lesson 21: Crustaceans

Optional Activity

- some pieces of clothing that are too small for the child
- some pieces of clothing that fit the child properly

Lesson 25: Ladybugs

Optional Activity

- ladybug kit

Lesson 26: Dragonflies

Opening Activity

- a few pieces of a snack, such as pretzels, raisins, or small crackers

Optional Activity

- 1 craft stick per child
- 1 piece of craft paper per child
- white craft glue

Lesson 27: Fireflies

Opening and Optional Activity

- 2 flashlights or phones with flashlight capability

Lesson 30: Water Plants

Optional Activity

- 5 pieces of green craft paper, cut in half



TREES THAT LIVE AND SLEEP



OPENING



Read to the child, holding up your fingers for the number of trees as you read the poem.

One Tall Tree by Shannen Yauger

One tall tree with leaves so pretty and green;
 One tall tree with green leaves to be seen.
 One tall tree with leaves of yellow and gold;
 One tall tree with stories to be told.
 One tall tree, all bare and brown;
 One tall tree, its leaves all fell down.
 One tall tree with little green leaves;
 One tall tree growing new leaves with ease.



Read to the child: Have you ever noticed how many different kinds of trees there are? Some are tall and thin and stay green all year. Others are tall with round tops made from big, flat leaves and sturdy brown trunks. These last types of trees lose their leaves when it's cold outside. Then they grow new leaves when it starts to warm up. Let's find out more about these amazing trees that God created!

Movie Time

Access this lesson's video at goodandbeautiful.com/heartsandhands.

Watch *Trees That Live and Sleep* with the child, and then return to the *Parent Guide* for discussion questions.

Discussion

- * Q: Do you remember what the word "deciduous" means? How did the trees get that name?
- * A: Deciduous trees grow new leaves and flowers in the spring and then lose or drop the leaves and flowers in the fall and winter. The trees are called deciduous because it means "to fall off."
- * Q: Have you noticed that sometimes the sun sets earlier in the evening than at other times? Which two seasons have less sunlight than the other two seasons?
- * A: Fall and winter.
- * Q: The leaves of a deciduous tree have a big job to do in the spring and summer. What is their main job?
- * A: Leaves use sunlight to make food for the tree.

Optional Activity

Collect any type of leaves from your yard or local park and create leaf rubbings. Place a collected leaf under a piece of paper. Remove the paper wrapper from a crayon and rub the crayon over the paper with the leaf underneath. Observe the different parts of your leaf rubbing!





DESERT PLANTS



Supplies Needed

- Opening Activity
- * 1 toothpick
- Optional Activity
- * world map or globe

OPENING



Hand the child a toothpick. Read to the child: Gently feel the tip of this toothpick. What does it feel like? Would you want to bump into a plant covered in spikes like this toothpick? Neither would I! It's almost as sharp as a cactus spine!

Story Time

Read to the child "Desert Plants" on page 52 of *The Big Book of Science Stories*, and then return to the *Parent Guide* for discussion questions.





Discussion

- * Q: Pokey Pete sure does love his desert plants. Did you love learning about them? What was your favorite fact?
- * A: Answers will vary.
- * Q: If you could invent another way for a cactus to store water, what would it be?
- * A: Answers will vary.
- * Q: What do you think is the most clever difference about desert plants that helps them live in very dry weather?
- * A: Answers will vary.

Optional Activity

Research different types of cacti around the world and have the child locate each cactus' home on a map or globe.

BUTTERFLIES

Supplies Needed

Opening Activity

* toilet paper

OPENING



Have your child stand with his or her arms close to his or her sides. Gently wrap the child up in toilet paper from the shoulders to the waist. **Read to the child:** Butterflies go through a life stage as caterpillars wrapped in a hard case called a pupa, or chrysalis. I've just wrapped you in a chrysalis like a caterpillar! Next, you will grow wings, become a butterfly, and fly away. **Instruct the child to raise his or her arms and break out of the chrysalis.** Now fly away!

Story Time

Read to the child: Today, we will learn about the stages a butterfly goes through before it becomes what you see flying around in the sky. This is called the butterfly's life cycle. You will also get a close-up look at the three parts of a butterfly's body and learn about the different purposes of each section.

Read to the child "Butterflies" on page 78 of *The Big Book of Science Stories*, and then return to the *Parent Guide* for discussion questions.





Discussion

- * Q: A butterfly's life cycle is so interesting. Do you remember what happens after an egg hatches?
- * A: A caterpillar crawls out.
- * Q: Butterflies eat something that humans don't usually eat. Can you name what it is?
- * A: Nectar.
- * Q: Where would you fly if you were a butterfly? What would you see below you as you were flying through the air?
- * A: Answers will vary.

Optional Activities

Check out The Good and the Beautiful Blog at goodandbeautiful.com/littlesactivities for optional activities for this lesson.

The Good and the Beautiful Library offers a book set in our For Littles collection, *Butterflies and Beetles Flip Books*, that would be a wonderful addition to this lesson.

SNAILS AND SLUGS



OPENING



Hand the child a piece of paper. Then hand the child a spoon with a little bit of white glue on the bottom. Read to the child: Let's pretend that this spoon is a snail or a slug. Guide the child's hand as he or she makes glue trails on the paper with the bottom of the spoon. As a snail or slug moves, it leaves a sticky trail of slime. Can we make this snail or slug leave a trail in a circle? What about in the shape of an "S" for "snails" and "slugs"? The child can decorate the glue trail with household craft items.

Supplies Needed

- | | |
|--------------------|-----------------------------------|
| Opening Activity | * optional decorative craft items |
| * 1 piece of paper | |
| * 1 spoon | Optional Activity |
| * white craft glue | * 1 piece of paper |
| | * writing utensil |

Read to the child: Snails and slugs are two animals that have a lot in common. For example, they both produce a slime that helps them crawl and climb. Let's learn more about snails and slugs!

Movie Time

Access this lesson's video at goodandbeautiful.com/heartsandhands.

Watch *Snails & Slugs* with the child, and then return to the *Parent Guide* for discussion questions.





Discussion

- * Q: Why is slime important to snails and slugs?
- * A: Slime helps snails and slugs stick to things, move, and stay safe from their predators. Slime also cleans water before it is absorbed into their skin.
- * Q: How are snails and slugs the same? How are they different?
- * A: Similarities: they both produce slime, move using a muscle called a foot, and hibernate. Difference: a snail has a shell on the outside of its body.
- * Q: Do you like snails or slugs better? Why?
- * A: Answers will vary.

Optional Activities

A snail's shell grows in a spiral pattern. Draw a spiral pattern for your child and have him or her trace it with his or her finger. See if you can find other items that you encounter each day that have this same spiral pattern.

CRUSTACEANS

Supplies Needed

Optional Activity

- * some pieces of clothing that are too small for the child
- * some pieces of clothing that fit the child properly

OPENING



Read to the child: Each year you grow bigger and bigger! As you grow, have you noticed that clothes that used to fit you are now too small? How does it feel if you put on a shirt that is too small? You feel a little squished! That's how animals called crustaceans might feel when they grow out of their shells!



Read to the child: Have you ever seen an animal that has a skeleton on the outside of its body? Crustaceans do! There are so many more interesting facts to learn about these animals. Watch today's video to learn more about these interesting creatures.

Movie Time

Access this lesson's video at goodandbeautiful.com/heartsandhands.

Watch *Crustaceans* with the child, and then return to the *Parent Guide* for discussion questions.



Discussion

- * Q: What is an exoskeleton, and what is its purpose?
- * A: It is the hard shell that protects the soft inside body parts of the animal.
- * Q: Which crustacean would you like to learn more about: crab, crayfish, lobster, hermit crab, or pill bug?
- * A: Answers will vary.
- * Q: Have you ever eaten a crustacean? If so, what kind? If not, would you like to?
- * A: Answers will vary.
- * Q: Why do barnacles stick themselves to hard surfaces? Which surface do you find most interesting for a barnacle to be attached to: pipes, rocks, boats, or whales?
- * A: Barnacles attach to hard surfaces by their foreheads so they can use their legs to eat; answers will vary.

Optional Activity

Have your child put on clothing that is too small for him or her and tell you about how he or she feels. Does the child feel squished? Is it harder to move? Have the child change into clothing that fits properly and talk about how it is easier to breathe, move, and enjoy life in his or her new "shell" of clothing.





OPENING



Read to the child: Are you ready for some Lizard Stretching? We're going to stretch our bodies and get ready for this awesome lesson about lizards!

Komodo dragon stretch: Komodo dragons are the biggest lizards on the earth. They are strong and fierce, like warriors. Stand facing me with your feet really wide apart. Turn your right foot so that it goes straight out to the side. Stretch your hands high toward the sky. Now bend your elbows and flex your arm muscles to show me how strong you are.

Gecko crawl: Some geckos have sticky pads on their feet to help them climb. Get on your hands and knees in a tabletop position. Walk your hands forward so that most of your weight is on your hands. Now lift your knees off the ground so some weight is on your toes. Pretend you have sticky pads on your hands, and reach your right hand forward slowly. Stick it to the ground, then bring your left toes forward slowly. Stick them to the ground. Repeat with your left hand and your right leg. Keep going across the room!

Read to the child: If you could have any pet in the entire world, what would it be? Did you think of a scaly, rough-feeling reptile who lives in a tank? Some lizards can make good pets, while others are meant to live only in the wild. But all lizards are interesting and fun to study!

Story Time

Read to the child: Today, we are going to read a story about lizards. We will follow Anthony as he chooses a pet lizard to bring home from the pet shop.

Read to the child "Anthony and His Lizard" on page 150 of *The Big Book of Science Stories*, and then return to the *Parent Guide for discussion questions*.





Discussion

- * Q: Anthony said that lizards can't make their own body heat. What did he have to buy for his tank so that Spots would be able to stay warm enough?
- * A: A heat lamp.
- * Q: Anthony knew he did not want an iguana. Can you remember why iguanas don't make good pets? Which lizard that you learned about today would not make a good pet for you?
- * A: Iguanas grow to be 2 meters (6.5 feet) long, and they don't like to be held; answers will vary.
- * Q: There were so many interesting lizards in the pet shop! Which one would you choose as a pet? What do you like about it?
- * A: Answers will vary.

Optional Activity

Search online for lizards around the world. There are many beautifully colored lizards as well as some that look quite silly!



FIREFLIES



OPENING

Teacher and child should each have a flashlight. After reading the instructions, turn the lights off or go into a dark room. Read to the child: I'm going to turn my flashlight on and off in a pattern. When I'm done, you shine your flashlight in the same pattern. See how well you can match what I did. Next, it will be your turn to shine your flashlight in an on-off pattern for me to match. We can use long or short flashes, and we can do any combination of short and long flashes to make a different pattern every time!

Supplies Needed

Opening/Optional Activity

* 2 flashlights or phones with flashlight capability

Read to the child: Fireflies look like little flashing lights in the sky. They can be found in fields or even around the bushes in a backyard in the evening. These insects make their own light! Watch today's video to learn more about these unique, shining bugs.

Movie Time

Access this lesson's video at goodandbeautiful.com/heartsandhands.

Watch **Fireflies** with the child, and then return to the *Parent Guide* for discussion questions.





Discussion

- * Q: Now that you have seen these pretty bugs in the video, what do you imagine it would feel like to gently hold one in your hands?
- * A: Answers will vary.
- * Q: Fireflies are insects, but are they actually flies? Do you remember what kind of insect fireflies are?
- * A: No, they are not flies; they are beetles.
- * Q: If you live in an area that has fireflies, what can you do to help the firefly population increase instead of get smaller?
- * A: Possible answers: turn off outside lights at night, provide a water source, use natural fertilizers, plant native trees, let them go after catching them.

Optional Activity

Play an evening game of Firefly Hide and Seek. Make sure you and the child each have a flashlight. Have the seeker count to ten while the other person hides. Once hidden, the hider flashes his or her light on and off so the seeker can see the light to find him or her. Remind the child that fireflies use their flashing lights to communicate with one another.