ARTHROPODS

3–8 Science Unit Study

THE GOOD AND THE BEAUTIFUL

Arthropods

CREATED BY THE GOOD AND THE BEAUTIFUL TEAM

Table of Contents

Unit Information

Student Journal

All The Good and the Beautiful science units include activities in a student journal. Each student should have his or her own student journal, and the parent or teacher will direct the student regarding when to complete the activities in the lessons. This book can be purchased by going to **goodandbeautiful.com/science** and clicking on the *Arthropods* unit link.

Science Wall

All The Good and the Beautiful science units include vocabulary words to be placed on your science wall, which is a wall or trifold presentation board in your learning area on which you can attach the vocabulary words and other images. Cut out the vocabulary word cards at the beginning of the unit. The course will indicate when to place them on the wall.

Lesson Preparation

All The Good and the Beautiful science units include easy-to-follow lesson preparation directions at the beginning of each lesson.

Activities

Many of The Good and the Beautiful science lessons involve hands-on activities. An adult should always closely supervise children as they participate in the activities to ensure they are following all necessary safety procedures. This unit does not have any experiments.

Unit Videos

Some lessons include videos that were created by The Good and the Beautiful. Have a device available that is capable of playing the videos from **goodandbeautiful.com/sciencevideos** or on the Good and Beautiful Homeschool app.

Content for Older Children

Some lessons include extra content that is more applicable for older children (grades 7–8). Parents or teachers may choose to skip this content if instructing only younger children.

Versions

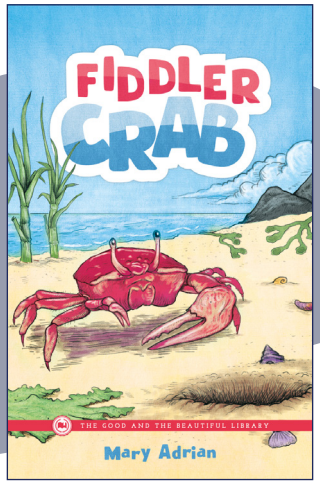
This course is reviewed and revised periodically to keep information as up to date as possible. This version is the third edition of this unit.

Read-Aloud Book Pack

The books below are optional read-aloud books that complement this unit. These books can be purchased as a book pack by going to **goodandbeautiful.com/science** and clicking on the *Arthropods* unit link.

The Boy Who Loved Bugs: The Story of Jean-Henri Fabre
By Molly Sanchez

The Story of Maria Merian
By Ashlee Klemm



Fiddler Crab
By Mary Adrian

CORRELATED BOOKS

The Good and the Beautiful Library has several books that correlate well with the *Arthropods* unit. It can be a wonderful experience for children to read books at their levels that are related to the subjects they are learning. The library includes both fiction and nonfiction books organized according to reading level. Find the correlated books by going to **goodandbeautiful.com/science** and clicking on the *Arthropods* unit product page.

GRADES 7–8

Lesson Extensions

How the Extensions Work

Each lesson has an optional lesson extension for children in grades 7–8. Complete the lesson with all the children, and then have the older children complete the self-directed lesson extension. These extensions are located in the *Grades 7–8 Student Journal*.

Answer Key

The answer key for the lesson extensions can be found on the free Good and Beautiful Homeschool app in the science section. Visit **goodandbeautiful .com/apps** for information on accessing the app. The app can be accessed from a computer, phone, or tablet.

Flexibility

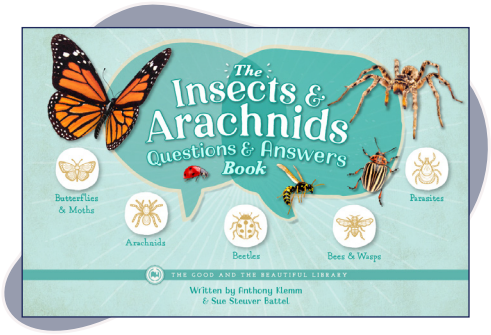
The amount of time it will take to complete each lesson extension will vary for each child. The average time is about 10–15 minutes per extension. Parents, teachers, and children may choose to omit parts of the lesson extension if desired. Encourage the children to stretch their capabilities, but also reduce work if needed.

Taking Notes

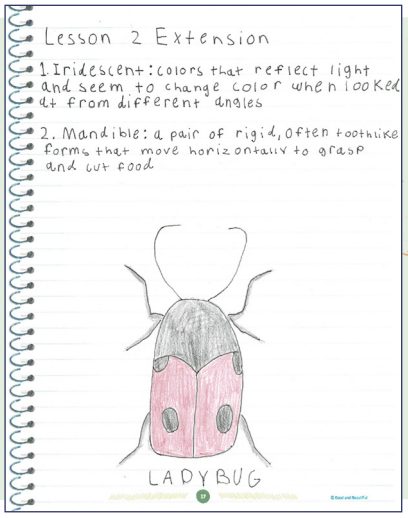
Some of the grades 7–8 lesson extensions have the children summarize the material read. Teach the children to look for key information, summarizing the most important points. Students can also add notes with their thoughts and the facts that are most interesting to them.

Optional Grades 7–8 Reading Book

We recommend *The Insects & Arachnids Questions & Answers Book* as extra reading for students in grades 7–8. This book can be purchased by going to **goodandbeautiful.com/science** and clicking on the *Arthropods* unit link.



The Insects & Arachnids Questions & Answers Book
By Anthony Klemm and Sue Stuever



SUPPLIES NEEDED

This section lists all the extra supplies needed for the activities within the lessons. There are no experiments in this unit.

Lesson 1

- scrap paper

Lesson 2

- none

Lesson 3

- brown clay (optional)
- 1 glow stick per child (not yet activated) (optional)
- small piece of silk fabric (optional)

Lesson 4

- small bowl
- candy or snack
- handful of cheese puffs
- paper towel
- sesame seeds
- ⅛-tsp measuring spoon
- small amount of honey
- 3 different essential oils or extracts (suggested: lemon, lavender, and vanilla)
- cotton balls

Optional Supplies:

- baking sheet
- parchment paper
- saucepan
- metal whisk
- candy thermometer
- 1 c honey
- ¼ c peanut butter
- ½ tsp pure vanilla extract

Lesson 5

- 1 game piece (or small piece of cereal, coin, etc.) per child
- 1 dice

Lesson 6

- ant farm (optional)
- 1 small snack or piece of cereal per child

Lesson 7

- none

Lesson 8

- 6 string or yarn pieces (15 ft, 12 ft, 10 ft, 8 ft, 6 ft, 4 ft)
- transparent tape
- a few drops of vegetable or olive oil

Lesson 9

- crayfish dissection kit (optional)
- glue or glue stick

Lesson 10 (optional supplies)

- a trapped arthropod OR
- a sheet or blanket OR
- a shovel; clear, pint-sized container; and small piece of fruit

Vocabulary

Instructions: Cut out the vocabulary cards in this section. Place them on your science wall when prompted to do so in the lessons. Review the vocabulary words several times during this unit and, if desired, at various times throughout the school year.

Arthropod

any member of the phylum Arthropoda—the largest phylum in the animal kingdom

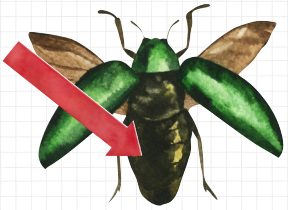
HAS:

- exoskeleton
- jointed body parts

DOES NOT HAVE:

- vertebrae (backbone)

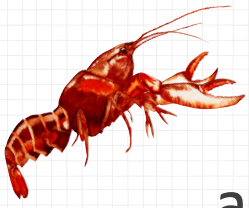
Exoskeleton



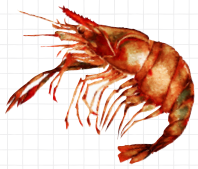
the hard covering that supports and protects some animals' bodies

Invertebrate

animal without a backbone



Crustaceans



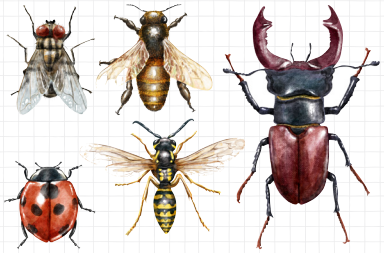
a large, mainly aquatic group of arthropods, including lobsters, crabs, crayfish, shrimp, krill, and barnacles

Molting

shedding an outer layer to allow a new layer to grow

Entomology

the study of insects



INSECT STATIONS

Objective

Help the children learn about and explore different types of insects, including termites, fireflies, mosquitoes, and silkworms.

Preparation:

- ☐ Cut out the "Firefly Images."
- ☐ Cut out the "Creating Silk" cards.
- ☐ Set up four stations around the house, classroom, or outdoors as indicated below.

Activity Supplies (optional):

- brown clay
- 1 glow stick per child (not yet activated)
- small piece of silk fabric

Station Setup:

Termites

- brown clay for the children to make "termite mounds" (optional)

Fireflies

- "Firefly Images" (included in the lesson)
- 1 glow stick per child (optional)

Mosquitoes

- "Life Cycle of the Mosquito" page (included in the lesson)

Silkworms

- "Creating Silk" cards (included in the lesson)
- silk fabric (optional)

☐ Incredible Insects

Read to the children: There are many incredible species of insects with unique capabilities, such as flying, creating threads used in fabric, building mighty structures, and even producing their own light! We are going to discover some of these incredible insect attributes today as we learn about termites, fireflies, mosquitoes, and silkworms.

☐ Insect Stations

Rotate to each of the following insect stations you have set up and follow the instructions given. Have the children turn to the "Insect Stations" pages in Lesson 3 of their student journals and complete each corresponding section with its station.

1 Termite Station

Watch the "Termites" video at goodandbeautiful.com/sciencevideos or on the Good and Beautiful Homeschool app.

Ask the children the following video review questions:

1. Where do termites build their nests? [some underground and some in aboveground mounds]
2. Do you remember what they use to make their nests? [mud, digested wood, saliva, and feces]
3. Why is it good that we have termites in our world? [they help decompose decaying wood and plants]
4. What do termites do that can be a problem

for humans? [chew on wood in houses and other objects]

5. What are some of the animals that eat termites? [anteaters, aardvarks, birds, large insects, and sometimes people]
6. Why have engineers and architects studied termite mounds? [to learn about their efficient building processes]

If desired, let the children create "termite mounds" with brown clay.

Have the children write down 1–2 facts that they learned from the video in the "Termite" box in their student journals.

2 Firefly Station

Lay out the image of the fireflies in the forest. Read to the children: What do you think is lighting up the forest? [fireflies] **Read the poem.** Who created an insect "all lit up and made to go on wings"? [God]

FIREFLY

By Elizabeth Madox Roberts

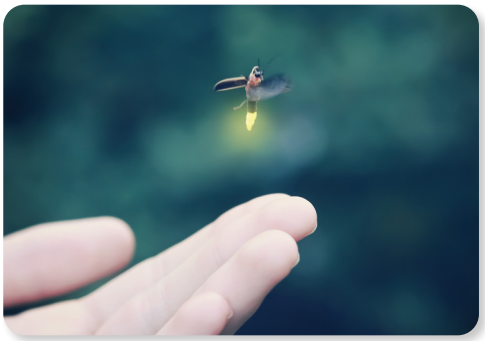
A little light is going by,
Is going up to see the sky,
A little light with wings.

I never could have thought of it,
To have a little bug all lit
And made to go on wings.

Lay out the two images of fireflies. These are what some species of fireflies look like. Fireflies are fascinating and are many people's favorite insects. Not everyone calls them fireflies, however. Some people call them lightning bugs. But no matter what you call them, they are really winged beetles, not flies at all!

If desired, give each child a glow stick that has not yet been activated. Have the children crack the tubes to activate the glow sticks. Glow sticks glow because a chemical reaction is taking place inside the tube. This reaction is similar to the one that occurs inside a firefly to make its abdomen glow. The firefly's light is produced when a protein called *luciferin*, an enzyme called *luciferase*, a fuel called *ATP*, and oxygen combine. This is one example of *bioluminescence*, or light produced by a living organism. The process is so efficient that almost 100% of the energy it produces goes toward making light. In contrast, a light bulb uses only 10% of the energy it produces to create light. Adult fireflies flash light signals to each other as a way of communicating their gender and species with other fireflies and to warn away predators.

Have the children draw and/or write at least two things they learned about fireflies in the box labeled "Firefly" in their student journals.



3 Mosquito Station

Read to the children: Let's learn about mosquitoes. **Have the children look at the sheet "Life Cycle of the Mosquito" while you read the following:**

Mosquitoes have distinct stages of their life cycles. The first three stages take place in the water. After a

female mosquito is able to have a blood meal, she has enough protein to make eggs. She then lays eggs in or near water. Some species of mosquitoes make an "egg raft" on which to lay their eggs.

The mosquito eggs hatch in water and are now known as *larvae*, as shown in the picture above. Within 7–10 days, they enter the pupal stage where the mosquitoes curl up, looking like a comma, and develop a thicker skin to protect themselves as they transform into fully developed mosquitoes. The life cycle of mosquitoes requires water. Thus, mosquitoes live near places that have standing water.

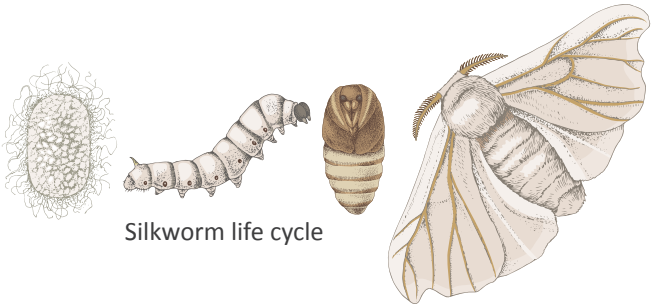
Have the children copy the "Life Cycle of the Mosquito" in the box labeled "Mosquito" in their student journals.

4 Silkworm Station

Read to the children: Chinese legend states that silk was discovered by the wife of the mythological Yellow Emperor, Huangdi, in about 3000 BC when a silkworm dropped from a tree overhead into her cup of tea. The hot tea unraveled the silkworm cocoon to

reveal beautiful, shiny threads. The empress not only discovered the source of silk but also invented the loom that would spin the silk threads into the luxurious and much sought-after fabric. In fact, the Silk Road trading route from China to Europe was named after the silk that China exported to the West.

Have the children draw the four stages of the silkworm life cycle in their student journals. Use the images below as an example.



Silkworm life cycle

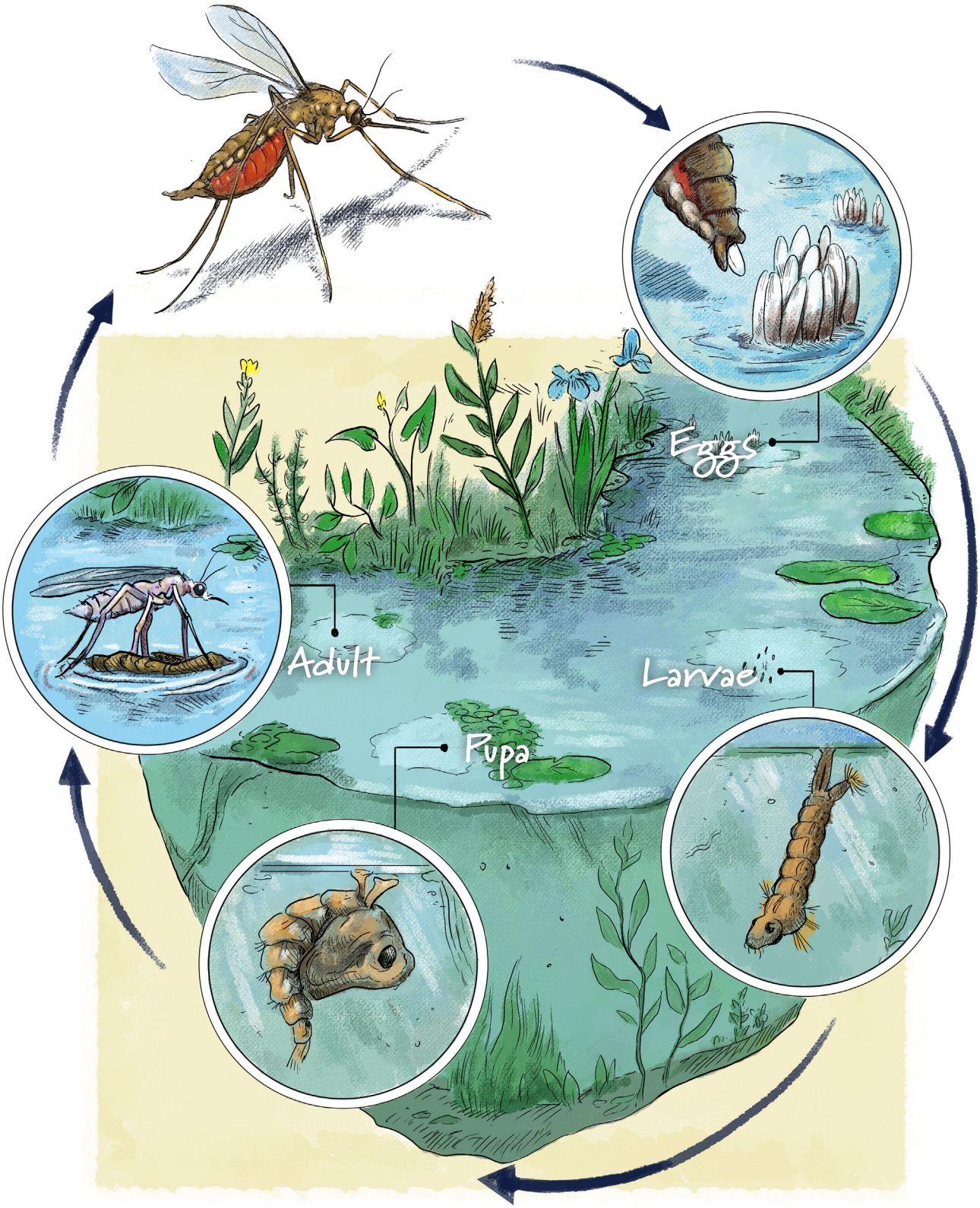
Give the children the cut-out "Creating Silk" cards. Have them work together to place the cards in order from egg to fabric, reading the description on the back before placing the card in the correct position. A key is provided at the end of the lesson. Let the children feel the piece of silk, if you have one.

Lesson 3 Extension

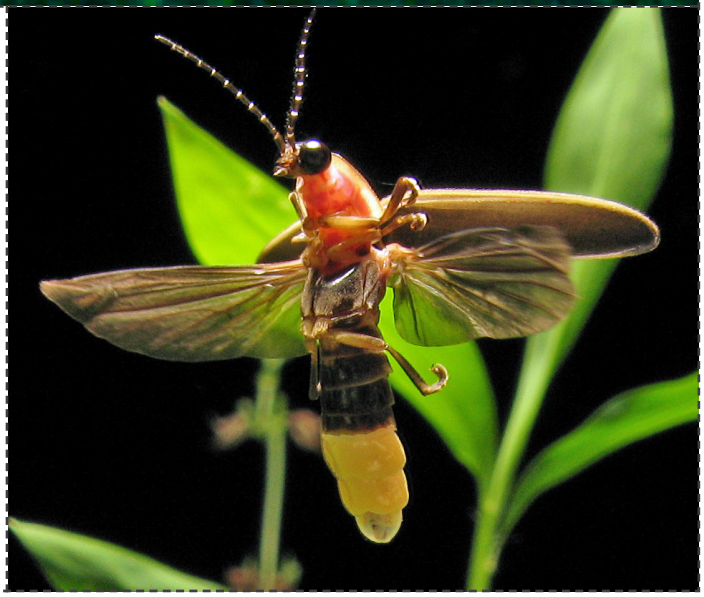
7–8

Have children grades 7–8 complete the self-directed Lesson 3 extension titled "Engineers of Light" in their student journals.

Life Cycle of the Mosquito



Firefly Images



Creating Silk

Creating Silk

Female *Bombyx mori* silk moths lay about 300–500 pinhead-sized eggs. These eggs hatch into larvae covered with tiny black hairs.

Silkworms are the caterpillar larvae of the silk moth. Their heads turn darker before they shed their skin (molt), and then they come out of their old skin a few days later as white silkworms with little horns on their backs.

After shedding its skin (molting) four times, the silkworm prepares to become a pupa. It produces two liquid proteins—*fibroin* and *sericin*—and spins a cocoon around itself. While it is making its cocoon, the silkworm twists in a figure eight about 300,000 times and spins about 1 km (3,280 ft, or more than half a mile) of silk thread! The cocoon hardens and protects the silkworm as it changes into a moth.

Moths produce liquids that make a hole in the cocoon so they can escape. Adult moths are white and furry with fernlike antennae. The female moths are about 2–3 times larger than the males. The male moths are the only ones that can fly, so they hurry to find a mate.

Just as the cocoon of long ago dropped into the tea of the Yellow Emperor's wife, cocoons must go into hot liquid to soften them. Once softened, the threads can unwind and be used for silk thread. The boiling process kills moths if they are still inside the cocoons. Today, ahimsa silk, or peace silk, is produced by allowing the pupa to complete its metamorphosis and escape from the cocoon before boiling the cocoon for silk.

As the threads soften, they begin to separate and are pulled onto a weaver's needlelike spindle into a uniform strand, sometimes referred to as a silk rope. Once gathered, the silk ropes are given their color in a dye bath.

The silk rope is then set on a loom where the threads are woven together in crisscross patterns to create a tight-knit fabric.

Finally, through this process, a smooth and shiny fabric known for its high-quality appearance and durability is complete. The silk fibers in this cloth are stronger than steel fibers with comparable thickness.

Have the children remove their hands. When the children "fly away," they will see that "pollen" from their fingers has been left on the second flower.

Bees: One of the Most Important Pollinators

Read to the children: Bees are one of the most important pollinators, pollinating 80% of flowering plants and 75% of the fruits, nuts, and vegetables grown in the United States. That's pretty amazing!

Give each child a sesame seed. The brain of a bee is only about the size of a sesame seed. It is an incredible witness of the might and majesty of God to see that He created such a sophisticated system in something so small. A bee's brain works at a much faster and superior rate than even an advanced computer. Bees complete complicated navigational calculations and have fantastic memories.

Some types of bees make honey. These bees suck up nectar from flowers with tubelike mouths. They store the nectar in a special pouch called a honey stomach. After visiting many flowers, they take turns with other bees, chewing the nectar until it turns into honey. Then they go back to their hives and spit the honey into honeycomb cells, where it will be thickened.

Fill the ⅛-tsp measuring spoon ¾ full with honey and show it to the children. The average bee produces only ⅟₁₂ of a teaspoon of honey in its lifetime, which is 5 weeks to 10 months long, depending on the type of bee. That is about as much as is in this measuring spoon. Can you imagine how many bees it takes to make enough honey to fill a whole jar?

Science Wall: Vocabulary Words

Place the vocabulary cards HIVE and CELL on your science wall. Read and discuss the words and their definitions.

Hives

Read to the children: The ***hive*** is where the colony, or group of bees or wasps, lives. A beehive is made up of beeswax-walled honeycombs that have hundreds of tiny ***cells*** on each of their faces. This amazing engineering marvel is achieved by the action of thousands of bees working together. Bees use these cells for food storage and for rearing their young.

Bee Responsibilities

Have the children turn to the "Bee Responsibilities" page in Lesson 4 of their student journals, and then read the following text to guide the children in completing the page according to the instructions in their journals. An answer key can be found at the end of the lesson.

Read to the children: We are going to learn about each type of bee that lives and works together in the hive. There are three types of bees in a colony: a *queen* bee, *worker* bees, and *drones*. As I read the following descriptions, complete the page in your student journals.

- **Queen Bee:** There is usually only one queen bee in a colony; she is bigger than all the other bees, and it is her job to lay the eggs. She is the leader of the colony and uses smells to communicate with the other bees.

Beekeepers Video

Watch the "Beekeepers" video at goodandbeautiful.com/sciencevideos or on the Good and Beautiful Homeschool app. Discuss the following questions:

1. Why are bees important for agricultural crops? [There are 156 different crops that need beekeepers' hives to pollinate them.]
2. What are some of the fruits and vegetables that must be pollinated? [The beekeeper mentioned tomatoes, watermelon, raspberries, and almonds. There are many others.]
3. How does pollination affect milk and meat? [The plants the animals eat must be pollinated.]
4. The beekeeper talked about the rhythm of the seasons. What work do the beekeeper and his bees do each season? [winter: store the bees in a cool space; spring: establish new queens; summer: produce honey; fall: prepare bees for winter]
5. How did the beekeeper say he learned most of what he knows about his craft? [by reading books]

Optional: Make Honey Candy

Follow the recipe below to make honey candy. *CAUTION: Hot liquids can cause serious burns. Be sure to use adult supervision to maintain safety.*

Lesson 4 Extension

7–8

Have children grades 7–8 complete the self-directed Lesson 4 extension titled "Bees vs. Wasps" in their student journals.

HONEY CANDY RECIPE

CAUTION: Hot liquids can cause serious burns. Be sure the following steps are carefully monitored by an adult.

Supplies and Ingredients:

- baking sheet
- parchment paper
- saucepan
- metal whisk
- candy thermometer
- 1 c honey
- 1/4 c peanut butter
- 1/2 tsp pure vanilla extract

Instructions:

Line the baking sheet with parchment paper. Cook the honey in a saucepan over medium heat while stirring constantly until it starts to boil. Continue to stir the honey until it reaches the hard-crack stage (149 °C or 300 °F). This will take about 15–20 minutes.

Remove from heat. Add peanut butter and vanilla. Stir thoroughly, and then immediately pour onto the baking sheet lined with parchment paper. Cool in refrigerator or freezer. Break into pieces.

BUTTERFLIES

Objective

Help the children learn about the life cycle of a butterfly, monarch migration, and butterflies in your area.

Preparation:

- ☐ none

Activity Supplies:

- 1 game piece (or small piece of cereal, coin, etc.) per child
- 1 dice

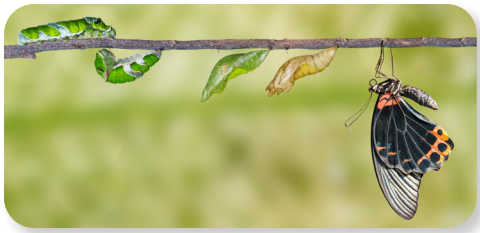
☐ Optional Read Aloud

At any point in the lesson, you may read one of the books from the optional Read-Aloud Book Pack. *The Story of Maria Merian* by Ashlee Klemm is suggested with this lesson.

☐ Butterfly Facts Game

Turn to the "Butterfly Facts Game" at the end of this lesson. Have each child place one game piece on "START." Have each child roll the game dice and move forward that number of spaces and then read the corresponding fact on the space he or she landed on. Continue rolling the game dice and moving each pawn until the first one to reach "FINISH" wins.

Once everyone has reached "Finish," take turns sharing your favorite fact and return to the board to read aloud any facts a player did not land on.



☐ Butterfly Life Cycle

Have the children turn to the "Life Cycle of a Butterfly" page in Lesson 5 of their student journals. Have them complete the corresponding section in their student journals, moving through the life cycle as you read the following. An answer key can be found at the end of the lesson.

1. **Have the children illustrate and label the first stage "egg" while you read the following:**

Butterflies and moths undergo a complete change in physical appearance, or *metamorphosis*, four times in four different life stages. These four stages can take one month to years to complete, depending on the type of butterfly or moth. The first stage of a butterfly's life is the egg, attached to a leaf or stem of the type of plant its species likes to eat.

2. **Have the children illustrate and label the second stage "caterpillar" while you read the following:**

When the larva (caterpillar) hatches from an egg, it is a tiny wormlike creature that is very hungry! With its tiny but incredibly powerful jaws, it first eats its egg shell, then goes on to eat the leaf on which it was born, and eventually, it may eat the entire plant. Because a caterpillar eats so much, it grows quickly. In fact, it grows so quickly that it outgrows its skin because the skin does not stretch or grow. Caterpillars shed their skin several times while they are growing and then get new skin. This is called *molting*.

3. **Have the children illustrate and label the third stage "pupa" while you read the following:**

When a caterpillar is fully grown, it finally stops eating and forms itself into a pupa [PEW–puh], also known as a chrysalis [KRIS–uh–lis]. This is a really fascinating stage. The caterpillar may travel quite a distance from where it was born to find a safe space to pupate. First, it spins a silk belt, sling, or button to attach itself to a sturdy surface. Then it molts one last time, and the new skin becomes the chrysalis. This can happen with the caterpillar hanging upside down, right side up, or even underground. Inside the chrysalis, which turns hard for protection, a rapid change takes place—a butterfly forms.

4. **Have the children illustrate and label the fourth stage "butterfly" while you read the following:**

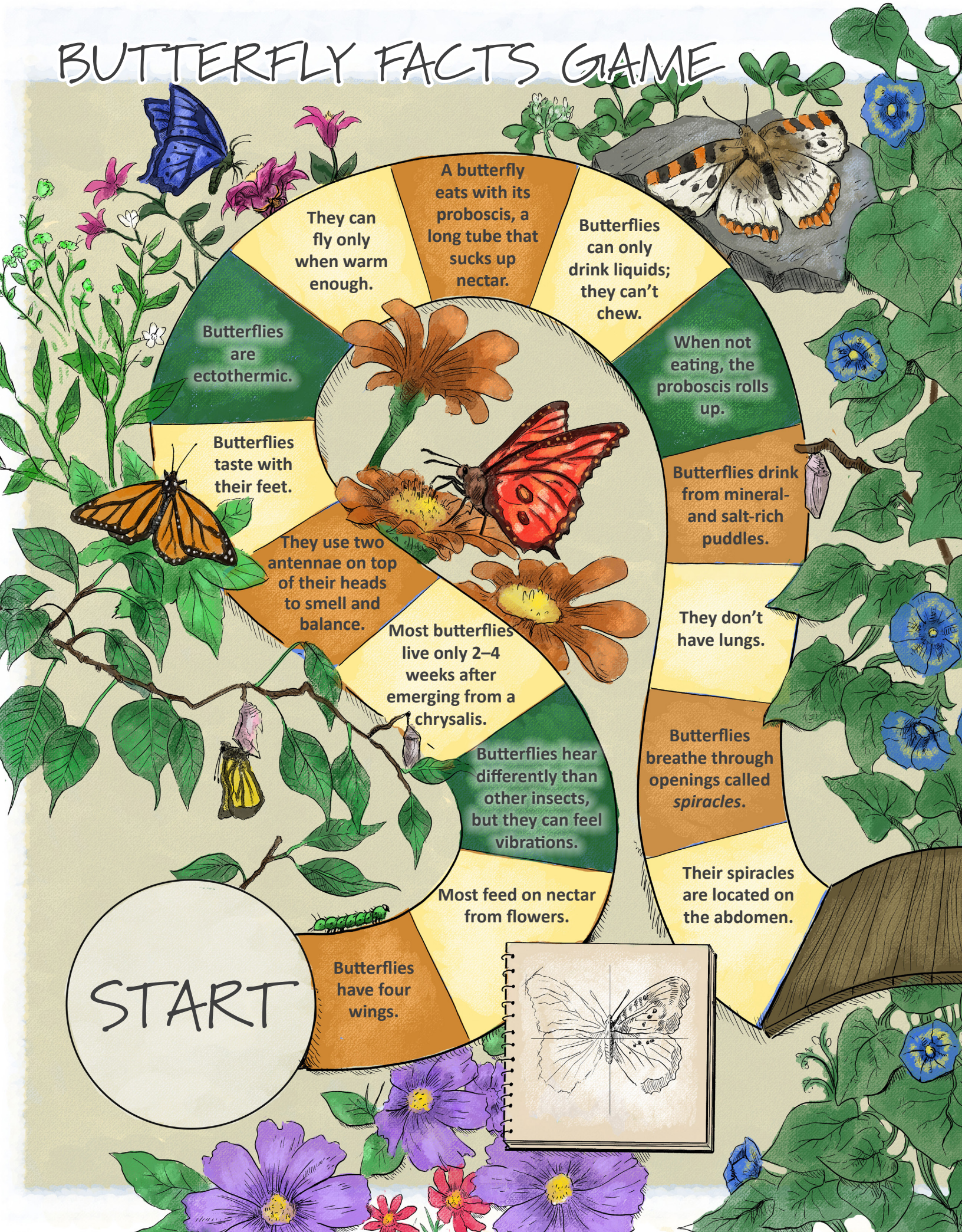
The pupal stage can last anywhere from 10 days to several years, depending on the species. After the pupa stage is over, the chrysalis opens, and an incredible, fully grown butterfly emerges. The butterfly's wings are damp, and the butterfly must wait until its wings have straightened and hardened enough to be able to fly. These beautiful adult creatures do not live long, with lifespans as short as a few days to as long as 13 months.

Monarchs Video

Watch the "Monarch Migration" video at goodandbeautiful.com/sciencevideos or on the Good and Beautiful Homeschool app. Ask the children these video review questions:

1. What time of year do the monarch butterflies begin to migrate south? [August and September]
2. In what part of the world do the monarchs hibernate? [California and Mexico]
3. What are some things that are special about the monarch migration? [Answers may vary, but they may include the following: They are the only butterfly species known to complete a round-trip journey. They have a beautiful, unique appearance.]

BUTTERFLY FACTS GAME




FINISH
They "glue" their eggs down on leaves to make sure they stick.
They live on all continents except Antarctica.
The largest butterfly species is the Queen Alexandra's birdwing at 28 cm (11 in) across.
Some species have clear wings.
A group of butterflies is called a *kaleidoscope*.
There are over 17,000 species of butterflies in the world.
They are the second-largest group of pollinators.
Butterflies see ultraviolet colors.
They can't see all the colors people do.
Their wings appear colorful from light reflecting on the tiny scales they are covered in.
The fastest butterflies can travel at speeds up to 48 kph (30 mph).
Some male butterflies do courtship dances.
Veins on their wings carry heat to the body.
If it gets too cold, a butterfly will bask in the sun to warm up.
They must seek shade when it gets too hot.


Crayfish

Crayfish (also called crawfish or crawdads) may look like small lobsters, but they don't live in the ocean. These crustaceans actually live in freshwater lakes and streams. They are typically less than 10 cm (4 in) long, but some very large crayfish have been found at the bottoms of deep lakes in the wilderness. There is also a very tiny species of crayfish called "dwarf crayfish" that grows to about the size of a thumbtack! Crayfish are typically dark green in color, but they can also be red, blue, or even white!

Many animals enjoy eating crayfish, which is why crayfish often hide in dark, murky places. They must protect themselves from alligators, otters, turtles, birds, fish, and humans. That's right—many people enjoy catching crayfish. There are many ways to catch crayfish. You may use a fishing pole, a net or trap, or even your bare hands. If you are able to catch some, you may think they look a little scary with their claws, but you will enjoy watching them move about. Generally they have a slow walk or crawl, but when they are afraid, they flip their tails around quickly in the water. They can swim backward to avoid danger. Crayfish are truly a wondrous creation and contribute so much to the environments they inhabit.

ENTOMOLOGY

Objective

Help the children understand the processes and purpose of studying insects.

Preparation:

- ☐ If possible, have the children try to trap an arthropod using the information in the "Arthropod Trap" section at the beginning of the lesson.

Optional Activity Supplies:

- a trapped arthropod OR
- a sheet or blanket OR
- a shovel; clear, pint-sized container; and small piece of fruit

☐ Optional Read Aloud

At any point in the lesson, you may read one of the books from the optional Read-Aloud Book Pack. *The Boy Who Loved Bugs: The Story of Jean-Henri Fabre* by Molly Sanchez is suggested with this lesson.

☐ Arthropod Trap

Have the children find or capture an arthropod of any kind (ant, beetle, crayfish, fly, etc.). The following instructions show three possible ways to trap or find an arthropod. When an arthropod is found, gently place it in a clear container for observation.

Note: If you are unable to obtain an arthropod, discuss these trapping methods, and then have the child pick any picture on the "Arthropods" page at the end of the lesson.

Beating Sheet Trap

- Place a sheet or blanket under a tree or bush.
- Gently shake the branches over the blanket.

Simple Pitfall Trap

- Dig a hole outdoors the same size and depth as your pint-sized container. A good spot will be on level ground with plants close by and in the shade. A wooded area or meadow is best. Arthropods are more active on warmer days. **If desired, you can make more than one trap and set each in a different location.**
- Set the container in the hole. Make sure it is at or just below ground level. Fill in any space around the container so arthropods can crawl across.
- Place the small piece of fruit in the container.
- Wait a few hours or overnight before checking on the trap. You may need to check daily for several days to find arthropods.

Turning Over a Large Rock

Many arthropods prefer damp, dark spaces, and if you turn over a large rock, you will likely find a variety of arthropods underneath.

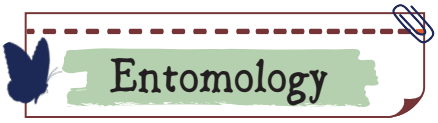
Entomology

Read to the children: ***Entomology*** is the study of insects and related arthropods and how they relate to their environment and other organisms. Scientists who study entomology are known as *entomologists*. They study insect populations and behaviors, life cycles, and classifications. They also use traps to gather insects for study and track the number of a given species in a certain area. Why do you think it is important to study arthropods?

There are more species of arthropods than minutes in a year, each with unique abilities. By studying these builders, weavers, flyers, diggers, and decomposers, scientists can find solutions to problems in various fields, including medicine, construction, and many more. For example, the incredibly elastic and strong spider silk is being studied as a potential material for better bandages infused with antibiotics.

Science Wall: Vocabulary Word

Place the vocabulary card ENTOMOLOGY on your science wall. Read and discuss the word and its definition.



Arthropod Observation

Have the children turn to the "Arthropod Observation" pages in Lesson 10 of their student journals.

Read to the children: The foundation of entomology, like other sciences, is discovering the unknown. Entomologists ask questions and then gather information that can lead to answers or sometimes more questions. To gather information, they collect research material and then observe and study it. As you observe your specimen, imagine no one has ever seen it before and you must describe it to them in detail.

Have the children use the arthropod they have trapped or a picture of an arthropod from this unit to fill out the "Arthropod Observation" pages in Lesson 10 of their student journals.

If you have enjoyed the study of arthropods in this unit, consider looking into one of these amazing careers. Or, continue to learn, discover, and be inspired by the amazing abilities of arthropods.

1. Medical Entomology: The study of insects to determine medicinal uses and treatments. For example, blister beetles excrete a blister-forming agent that doctors use to remove warts or other bumps on the skin.
2. Forensic Entomology: The study of insects as they relate to evidence found at crime scenes.
3. Military Entomology: The study of insects in an area to determine precautionary methods to prevent bites or other problems to military members.
4. Entomology Professor: Teaching students about entomology.
5. Veterinary Entomology: The use of insects to treat animals, or the treatment of animals from exposure to insects.

Lesson 10 Extension

7–8

Have children grades 7–8 complete the self-directed Lesson 10 extension titled "Jean-Henri Fabre and the Life Cycle of the Field Cricket" in their student journals.

Arthropods