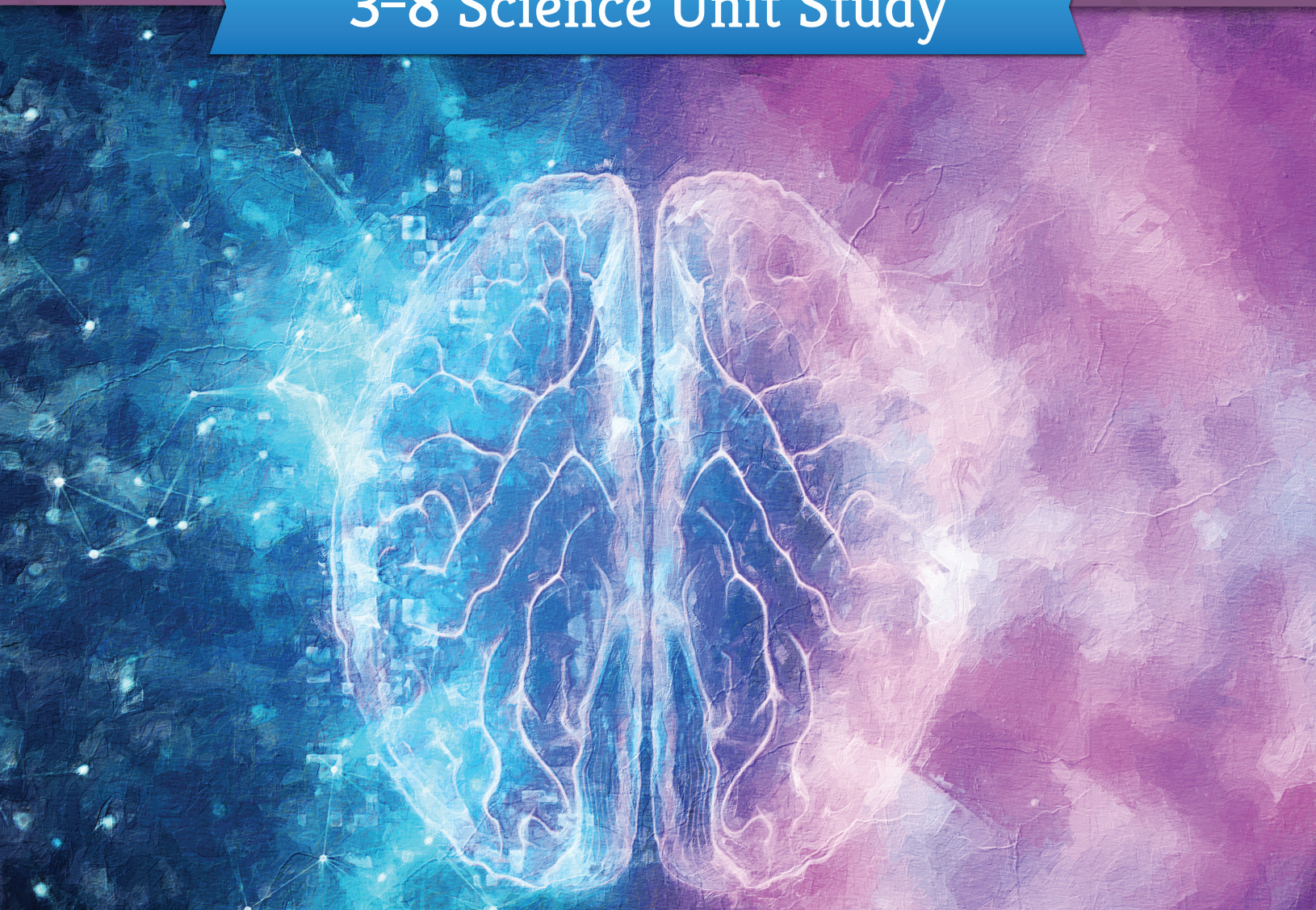
HEALTH AND THE HUMAN MIND

3–8 Science Unit Study



THE GOOD AND THE BEAUTIFUL

Health and the Human Mind

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. Student journals can be purchased by going to **goodandbeautiful.com/science** and clicking on the *Health and the Human Mind* 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.

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 from 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.

Content for Younger Children

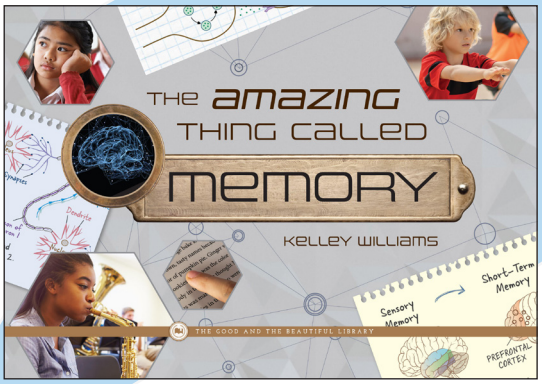
Some lessons include extra content that is more applicable for younger children (grades 3–6). Parents or teachers may choose to skip this content if instructing only older children.

Versions

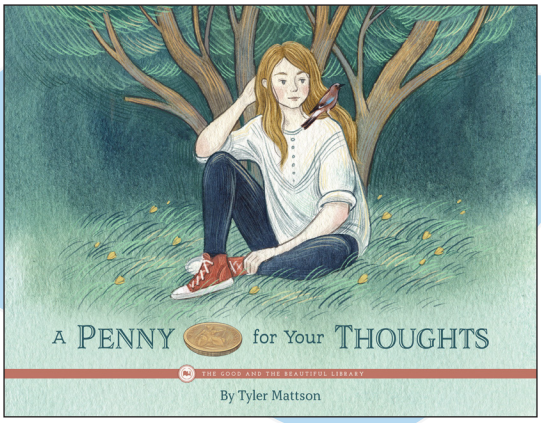
New discoveries are being made on an ongoing basis. This course is reviewed and revised periodically to keep information as up to date as possible. This version is the first edition of this unit.

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 *Health and the Human Mind* unit link.



The Amazing Thing Called Memory
By Kelley Williams



A Penny for Your Thoughts
By Tyler Mattson

CORRELATED BOOKS

The Good and the Beautiful Library has several books that correlate well with the *Health and the Human Mind* 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** and clicking on the *Health and the Human Mind* 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

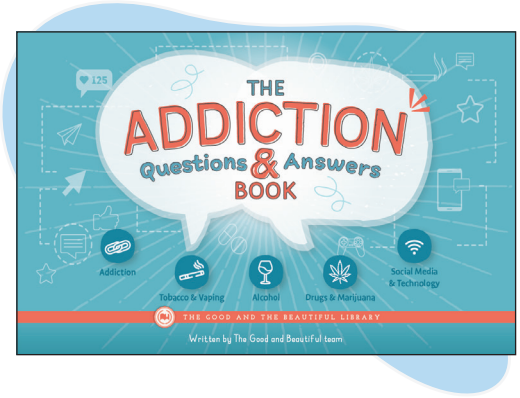
The amount of time it will take to complete each lesson extension will vary for each child. The average time is about 10–15 minutes per extension. Parents, teachers, and children may choose to omit parts of the lesson extension if desired. Encourage the children to stretch their capabilities, but also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

Taking Notes

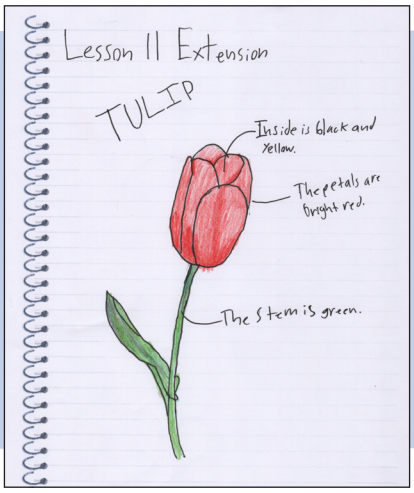
Some of the grades 7–8 lesson extensions have the children summarize the material read. Teach the children to look for key information, summarizing the most important points. Students can also add notes with their thoughts and the facts that are most interesting to them.

Optional Grades 7–8 Reading Book

We recommend *The Addiction Questions and 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 *Health and the Human Mind* unit link. One copy per child is recommended.



The Addiction Questions & Answers Book
By The Good and the Beautiful Team



SUPPLIES NEEDED

You will need the following supplies for activities. There are no experiments in this unit.

Lesson 1

- Dropper or spoon
- Cold water
- Feather or other soft object
- Ball
- Page protector or plastic wrap for each child
- Poster paint
- ¼ tsp water per child
- 1 straw per child
- 5 pipe cleaners per child (leave one long and cut the others in half)
- 15–20 pony beads per child

Lesson 2

- KEEP HIDDEN FROM CHILDREN: a pile of table salt on a plate
- Crayons or colored pencils
- Scissors
- Glue stick

Lesson 3

- Ruler

Lesson 4

- Timer
- A cup, filled with ½ inch of water, per child
- Crayons or colored pencils, at least six different colors
- Glue stick for children in grades 3–6

Lesson 5

- 2 small bowls
- Sugar
- Salt
- 1 spoon per child
- 1 cup of water per child
- Lemon juice
- Unsweetened cocoa
- Optional: umami-flavored food, such as tomato, soy sauce, or mushrooms

Lesson 6

- 1 blindfold per child
- KEEP HIDDEN FROM CHILDREN: five items with distinctive odors (candle, flower, soap, popcorn, onion, etc.)
- Chocolate or other food with a distinctive taste

Lesson 7

- Pencil
- 1 pillow per child

Lesson 8

- KEEP HIDDEN FROM CHILDREN: 10 small items, such as toys, snacks, crayons, erasers, or buttons
- Cookie sheet
- Dish towel
- Timer
- Strongly scented object, such as a scented candle, perfume, or air freshener
- Coin

Lesson 9

- None

Lesson 10

- A few sensory items to touch and feel, such as pipe cleaners
- 1 small snack per child
- Something to smell, such as a candle

Lesson 11

- 1 flower (grades 7–8 only)

Lesson 12

- 1 piece of scrap paper per child

Vocabulary

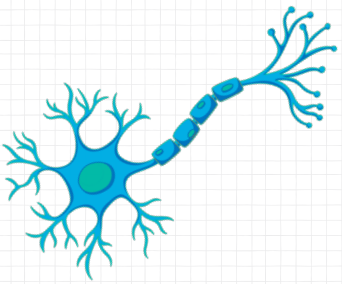
Instructions: Cut out the vocabulary cards in this section. Place them on your science wall when prompted to do so in the lessons. Review the vocabulary words several times during this unit and, if desired, at various times throughout the school year.

Nervous System

the system of nerve cells and fibers that acts as the command center of the body

Neuron

a nerve cell that transmits electrical impulses



Brain

an organ located in the head that controls the body's functions

Homeostasis

an organism's self-regulating state of optimal functioning

Memory

the process of taking in information from the world around us, processing it, storing it, and later recalling that information

Emotions

spontaneous mental reactions that sometimes produce physical effects

Mental Health

state of physical, mental, and social well-being

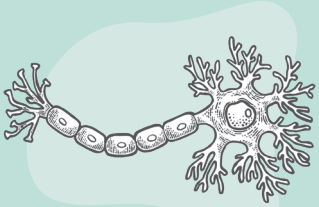
Social Health

the ways people create healthy and positive relationships with each other

The Human Mind and Nervous System

Objective

Help the children understand what the human mind is and explore the functions of the nervous system.



Preparation:

- ☐ Mix ½ tsp poster paint with ¼ tsp water—about a spoonful per child.

Activity Supplies:

- Dropper or spoon
- Cold water
- Feather or other soft object
- Ball
- Page protector or plastic wrap for each child
- Poster paint
- ¼ tsp water per child
- 1 straw per child
- 5 pipe cleaners per child (leave one long and cut the others in half)
- 15–20 pony beads per child

☐ Nervous System Activity

Perform the following tasks with the children. *Note: If desired, ask the children for their consent before touching them. For example, "Is it okay if I touch you with something soft and harmless?" or "Will you please close your eyes so I can put something safe on your arm?"*

1. **Have the children close their eyes. Using a dropper or spoon, put a drop of cold water on a child's arm. Repeat for each child. Read to the children:** What just happened? What did that feel like? How did you know that I put water on your arm when you had your eyes closed?

2. **Have the children close their eyes. Tickle a child on the back of the neck with the feather or other soft object. Repeat for each child. Read to the children:** What just happened to you? What did it feel like? What do you think I tickled your neck with? What did your body want to do when you felt the feather or the water? [brush it away, jump, etc.]

3. **Have the children open their eyes. Have a child stand in front of you. Toss the ball to the child. Repeat with each child. Read to the children:** What just happened? What did your body do when I tossed the ball to you? [arms went up to catch it]

Read to the children: Our bodies are amazing creations. They are constantly taking information that comes from our senses and then using that information to tell us how to react to what's going on around us. When you felt the cold water on your arm, you knew instantly that it was wet and that it was cold. You also knew that it was on your arm and not on your leg or head. Your body then made a decision about how to react—

A few actions our bodies make are special—we can choose to blink our eyes or breathe slowly, but when we don't choose to think about those actions, they happen automatically. Both the somatic and autonomic nervous systems control these actions!

Branching Nerves

Have the children turn to the "Branching Nerves" page in Lesson 1 of their student journals and place a page protector or plastic wrap behind the page. Place a large drop of the previously prepared diluted paint on the head in the journal (for the brain) for each child. Have the children use a straw to blow paint down the body for a spine and along the arms and hands for branching nerves. After it is dry, have the children label the three major areas of the nervous system, using the word bank provided at the bottom of the journal page. An answer key can be found at the end of this lesson.

FUN FACT

The human brain can create enough energy to power a light bulb—about 23 watts.

Neurons and Synapses Activity

Read to the children: There are small nerves running through your entire body. Many of them are so tiny that they can only be seen under a microscope. But did you know that you have a nerve in your body that goes from your back, all the way down your leg, to your big toe? This nerve is called the *peroneal* [pe–roe–nee–all] *nerve*.

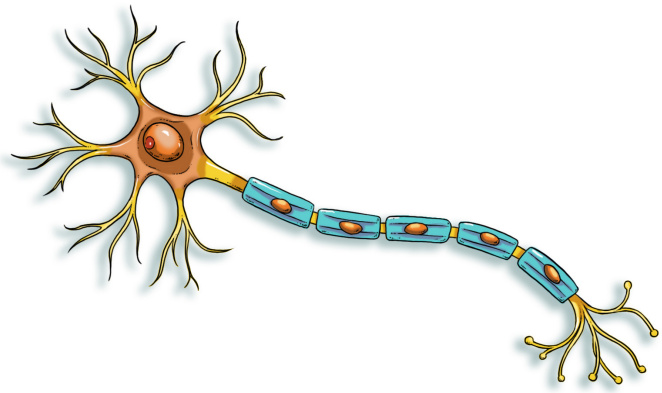
Neurons, or nerve cells, are the building blocks of the nervous system, and each intricately created human body has billions, if not trillions, of them. They are responsible for taking input from the world around you, sending that information to your brain through your spinal cord, and relaying orders to your muscles to react to what is happening.

Neurons need to have a special design to carry out their jobs. To help you understand how they're made, we're going to make a replica of a neuron.

Have the children each create a neuron replica by following the directions below while you read. If you are teaching only one child, make a model yourself or have the child make two models so that the synapse can be created between two neurons.

Have the children coil one end of the long pipe cleaner one time around a finger for the cell body, leaving a long tail.

Read to the children: The main part of the neuron, the circle part of the long pipe cleaner, is called the *cell body.* It has branches called *dendrites*, which pick up signals from the environment or from other neurons. Neurons look a little bit like a tree, don't they?



Have the children use the four pipe cleaners you cut in half to create 5–7 dendrites by twisting one end around the top of the cell body, making them stick out like branches. They may also twist even shorter pieces around the dendrite pieces already attached to create more of a branched look.

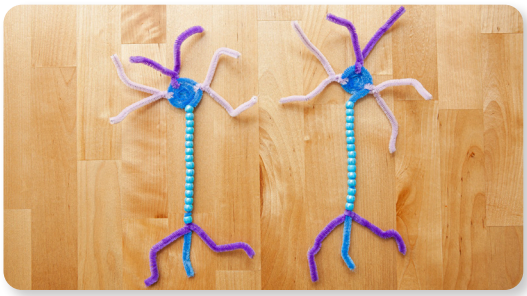
Read to the children: The short pipe cleaners represent the dendrites that send signals along the "trunk" or long axon. This is represented by the long, straight part of your large pipe cleaner.

Have the children thread the pony beads from the end of the axon up to the cell body.

Read to the children: Just like the pony beads covering the pipe cleaner, the long axon of a neuron is covered by insulating structures called *myelin sheaths*. These structures help the signals travel quickly along the axon, reaching speeds of up to 100 meters (328 feet) per second.

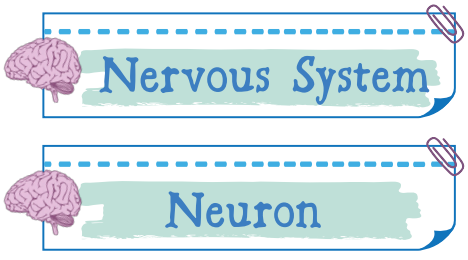
Have the children place two models next to each other, dendrite to axon, leaving a gap as the synapse.

Read to the children: When one neuron wants to "talk" to another, it sends an electrical signal packaged in chemicals across a gap called a *synapse*. When the signal reaches the "roots" of the neuron, or *axon terminals*, it gets packaged in a chemical called a *neurotransmitter*, crosses the synapse, and is received by the dendrites of the next neuron. The neuron on the other end of the synapse receives the chemical, changes it back into an electrical impulse, and passes it across another synapse to the next neuron.



Science Wall: Vocabulary Words

Place the vocabulary cards NERVOUS SYSTEM and NEURON on your science wall. Read and discuss the words and their definitions.



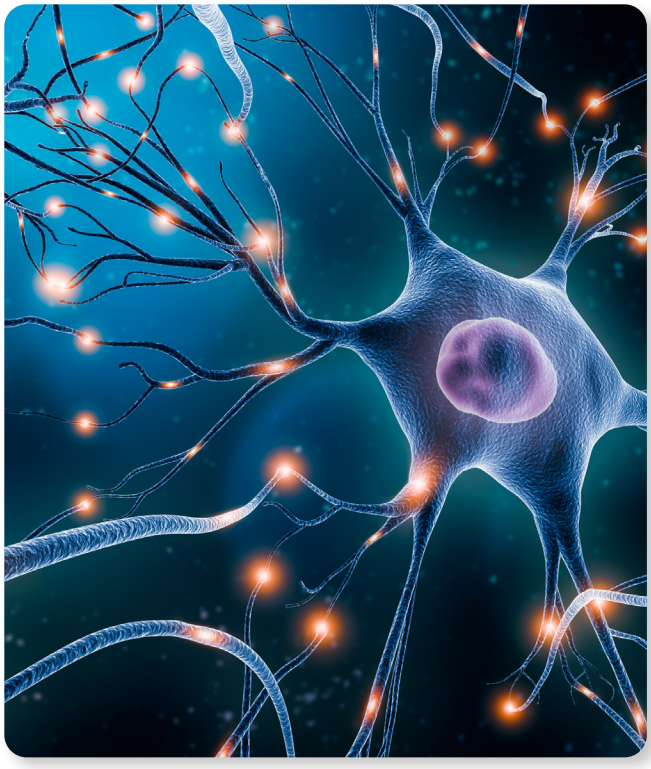
What Is the Mind?

Read to the children: You might have noticed that the title of this unit is *Health and the Human Mind*. What do you think is the difference between your brain and your mind? Your brain is a physical organ in your body that controls everything you do. It can be touched. Your mind is who you are—your thoughts, feelings, personality, dreams, experiences, and your actions. It cannot be touched, but it does have the power to change the physical structure of the neurons in your brain based on what is happening in your life and how you react to it. For example, if you strive to think positively, you can set goals to improve your thoughts and habits to retrain your brain or neurons to react positively to the world around you. God has given us free will so that we can use our minds to choose how we move through life.

Lesson 1 Extension

7–8

Have children grades 7–8 complete the self-directed Lesson 1 extension titled "Changing Reflexes" in their student journals.



Eyes and Vision

Objective

Help the children learn the parts of an eye, how it processes images through the brain, and the amazing versatility of sight.

Preparation:

- ☐ Cut out the "Types of Color Blindness" cards.

Activity Supplies:

- Ruler

☐ Optical Illusions

Read to the children: Our eyes are an incredible blessing. Being able to see the beauty or potential dangers around us brings us joy and safety. However, sometimes what we see can be misleading. Have you ever seen something and thought it was a certain color or object, but it turned out to be different? Let's take a look at a few examples, known as ***optical*** illusions.

Have the children turn to the "Optical Illusions" pages in Lesson 3 of their student journals. Have the children follow the instructions for each illusion on their student journal pages.

Why is it important to know that what we are looking at is not always accurate or real? [Sample answer: Information, such as photos or images on social media, can be manipulated or not show an accurate view of what is actually happening.]

☐ Amazing Eyes Video

Have the children watch the video "Amazing Eyes" at goodandbeautiful.com/sciencevideos or on the Good and Beautiful Homeschool app. Discuss the following questions.

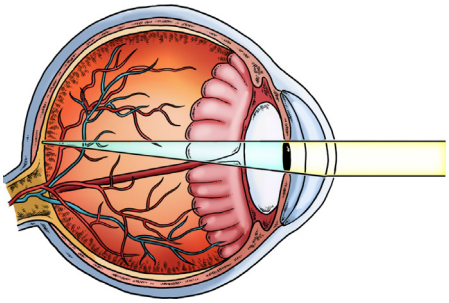
1. What is one part of the eye you remember learning about in the video? What is its function? [retina: receives light and sends signals to the brain; pupil: allows the right amount of light to enter the eye; iris: works with the pupil to regulate light coming into the eye; cornea: bends and focuses light to the retina]
2. What information about the eye did you find most interesting?

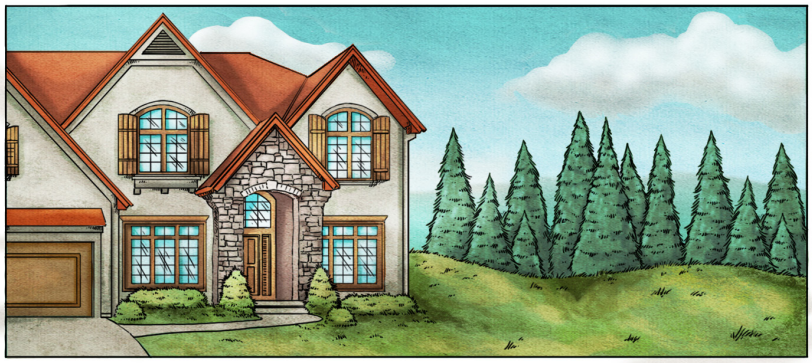
☐ Filling in the Gaps

Read to the children: Our eyes allow us to take in an incredible amount of information about the world around us, from colors to textures. But even with such impressive capabilities, eyes still miss some information. For instance, because we blink roughly once every four seconds, our eyes miss a quarter of

Common Vision Problems

A





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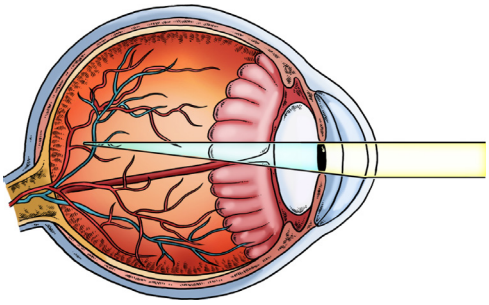

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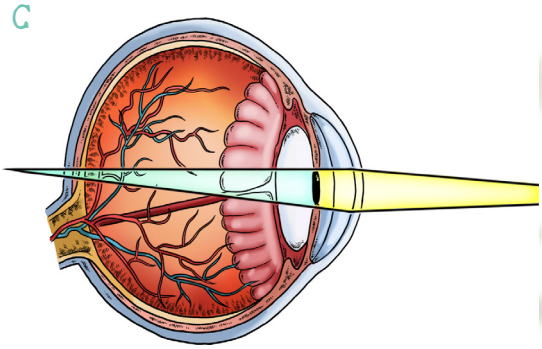

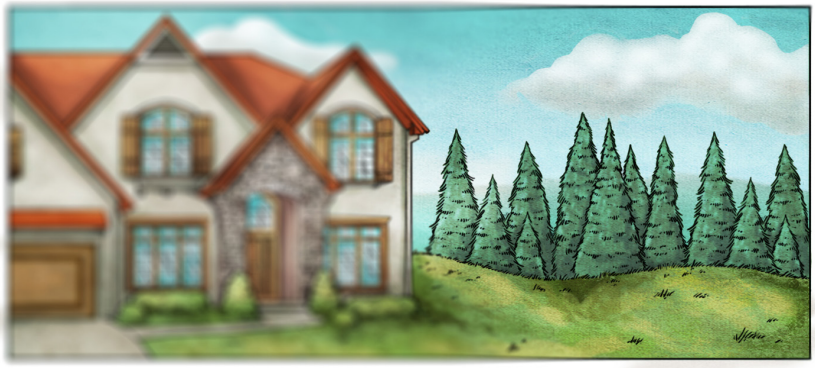

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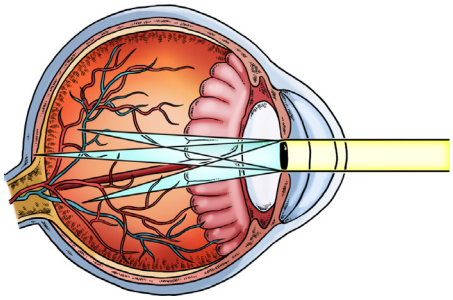
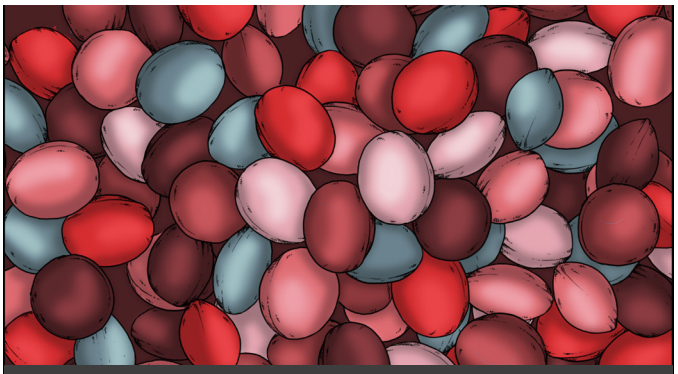
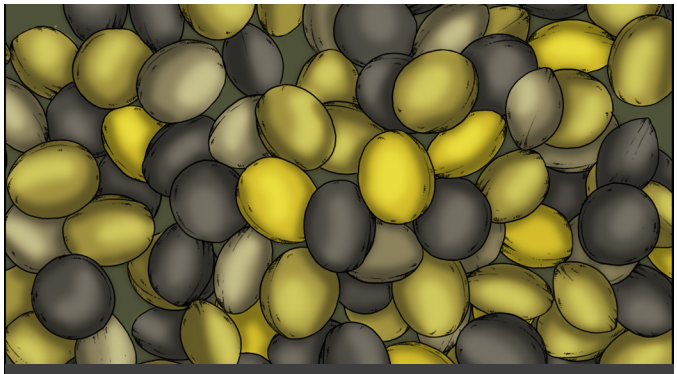


Types of Color Blindness

NORMAL VISION



TRITANOPIA



PROTANOPIA

DEUTERANOMALY

Type 1

With this type of vision, an individual's cones and rods, photoreceptors that detect different wavelengths of light, are functioning correctly. The individual is able to see all colors on the visible light spectrum.

Type 2

Individuals with this type of color blindness have no blue-responsive cone cells, which results in blue-yellow color blindness. These individuals can identify reds, light blues, pinks, and lavender.

Type 3

Individuals with this type of color blindness are not able to see almost any red. People with this type of color blindness will primarily see shades of blue and gold while reds and greens will appear the same.

Type 4

This type of color blindness is when the green-responsive cones do not work properly. People with this type of color blindness see shades of blue, yellow, and other muted colors. This is the most common type of color blindness, and it is estimated that 1 in 12 men and 1 in 200 women are affected.

Memory and Emotions

Objective

Help the children learn types of memory and emotions and how each is managed.

Preparation:

- ☐ Place the 10 small items listed below on the cookie sheet. Cover with a dish towel.
- ☐ Cut out the "Emotions Match Cards."

Activity Supplies:

- KEEP HIDDEN FROM CHILDREN: 10 small items, such as toys, snacks, crayons, erasers, or buttons
- Cookie sheet
- Dish towel
- Timer
- Strongly scented object, such as a scented candle, perfume, or air freshener
- Coin

☐ Optional Read Aloud

At any point in the lesson, you may read one of the books from the optional Read-Aloud Book Pack. *The Amazing Thing Called Memory* by Kelley Williams is suggested with this lesson.

☐ Memory Game

Uncover the cookie sheet and give the children 20 seconds to look at and memorize the items on the cookie sheet. After 20 seconds cover the cookie sheet with the dish towel, have the children look away, and remove one of the items. Tell the children you removed one item. Uncover the items and have the children try to figure out which item was removed. The children can do this as a group or individually. You can then replace the item and take turns removing different items. It may be fun for the children if an adult takes a turn and tries to identify a missing item. For an extra challenge, add more than 10 items to the cookie sheet or remove more than one item at a time.

☐ Memory Structures

Read to the children: ***Memory*** is the ability of your brain to receive, encode, store, and retrieve information. Your brain was hard at work doing all these things in our last activity! Here is another example of how a memory is formed: One cold afternoon, a young boy makes cookies with his grandma. She explains the recipe to him and lets him roll out the cookie dough, select the cookie cutters to use, and bake the cookies. Once the cookies have cooled, the boy and his grandma decorate them. Every second of this activity, the boy's brain receives loads of information from his sensory organs about the things he is seeing, smelling, hearing, touching, and tasting. His brain is turning this information into usable data that it will then store and turn into short-term and long-term memories. Days, months, or even years later, the boy may not be able to recall every detail of this day, but he may be able to

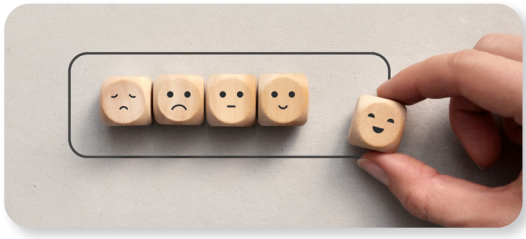
Amnesia

Read to the children: One of the ways scientists are able to learn which structures in the brain are involved in what kinds of memories is by studying people who have had illnesses or head injuries that have caused *amnesia*, a condition that affects an individual's ability to remember certain things. Sometimes it can even cause the loss of knowing important things like his or her own name!

In 1986 a man doctors named "Patient R.B." suffered a stroke, which is when blood flow to the brain stops for a period of time. The stroke caused amnesia, and although Patient R.B. remembered things from years ago, he was no longer able to retain new memories after they happened. Scientists studied his brain after his death and found that the lack of oxygen during R.B.'s stroke had caused damage to a small part of his hippocampus. This discovery led scientists to study more about the role of the hippocampus and other structures that make and store memories.

Memory Terms Matching

Have the children turn to the "Memory Terms Matching" page in Lesson 8 of their student journals and follow the instructions to complete the page. An answer key can be found at the end of this lesson.



Emotions Game

Read to the children: Did you know that ***emotions*** are part of our health? We feel happy, sad, angry, scared, worried, calm, tired, and excited. It's okay to feel all those emotions. Sometimes, we can get "stuck" being sad or worried or angry. Or sometimes, we make poor choices because of our emotions. Part of being healthy is learning how to process and react to our emotions; learning how to deal with hard emotions, such as sadness or anger; and learning how to make good choices when we experience these emotions.

3–6

For children grades 3–6 place the cut-out Emotions Match image cards on the table and the cut-out Emotions Match word cards stacked in the center of the table. Have the children take turns drawing an emotion word card and placing it on the image showing that emotion.

Healthy Choices Situations Game

Read each situation below to the child. For each situation, flip a coin to see which choice is made; heads is the first choice, and tails is the second choice. Discuss whether that choice was a healthy way to handle that emotion or not. If not, read the other choice and discuss why that choice is better.

1. Adam's little brother ate the last of the dessert that Adam had saved for later. Adam was angry.

   - Adam yells at his little brother.
   - Adam walks a few feet away from the situation and prays for patience and understanding to come over him when he goes back to speak to his brother.

2. Joey's mom is going away on a fun trip for a weekend with her sisters. When she leaves, Joey feels sad and jealous.

   - Joey decides to help clean up the house to surprise her when she comes home.
   - Joey spends all day thinking about how sad he is. He doesn't want to do anything.

3. Sally is frightened of tornadoes, and she hears a weather report that there may be a chance of a tornado that afternoon.
   - Sally keeps checking the sky and asking her mother over and over if she thinks there will be a tornado.
   - Sally tells her mom she is worried. She and her

mom come up with ideas to help her feel safe if there is a tornado.

4 Todd is very excited that his birthday party is tomorrow.

- Todd talks in a very loud voice all day long about what he hopes to get for his birthday.

- Todd tells his dad he is too excited for tomorrow and needs to get some energy out, so his dad takes him to the park to play basketball.

5 Janey is disappointed when her softball team loses its championship game.

- Janey takes her dog outside to play for a while to help her focus on something else.
- Janey eats a giant chocolate bar.

6 Elizabeth doesn't understand her math lesson. She misses every single problem.

- Elizabeth tells herself, "It's okay. I don't understand this right now, but I can learn how to do it."
- Elizabeth tells herself, "I'm just not good at math. I'll never figure this out."

7 Max is thrilled when his soccer team wins its big game.

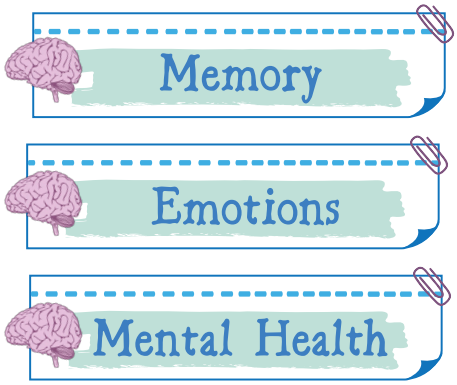
- Max brags to all of his friends, "We're the best! We're so amazing! We beat that other team so bad!"
- Max can't stop smiling, and he tells all his friends, "We played a good game against a tough team. We worked hard!"

8 Carrie hears a friend say something hurtful about another friend.

- Carrie says, "You're mean! I'm not your friend anymore!"
- Carrie tells her parents what the unkind friend said and asks for their advice.

Science Wall: Vocabulary Words

Place the vocabulary cards MEMORY, EMOTIONS, and MENTAL HEALTH on your science wall. Read and discuss the words and their definitions.



Mental Health

Read to the children: Just as you might have a health problem with an arm or a leg or an organ, the human mind can also be diagnosed with medical issues by a doctor who specializes in ***mental health***. There are options available to help minimize symptoms and to find solutions to the mental health challenges a lot of people face. Therapies and/or medications can help, depending on the situation. Mental health is just as important as heart, bone, lung, and muscular health and should be taken just as seriously by ensuring proper medical care is sought out and followed.

Lesson 8 Extension

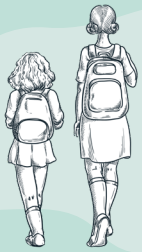
7–8

Have children grades 7–8 complete the self-directed Lesson 8 extension titled "Memory Loss Case Study" in their student journals.

Social Health

Objective

Help the children learn ways to achieve good social health and the benefits of being socially healthy.



Preparation:

- ☐ Cut out the "Communication Practice Cards."

Activity Supplies:

- None

☐ Social Health Video

WATCH ONLINE

Have the children watch the video "Social Health" at goodandbeautiful.com/sciencevideos or on the Good and Beautiful Homeschool app. Discuss the questions below.

1. What examples of poor ***social health*** did you see in the video? [bullying, loneliness, etc.]
2. Think of one goal you could set to improve your social health. [Ideas could include going to the park or playing outside more often and getting involved with a local sports team, club, or youth group.]

☐ Importance of Social Health

Read to the children: Taking care of our physical needs, such as staying safe, eating, and sleeping, is obviously important to our health. But sometimes we forget that it is just as important to take care of our social needs. We were created to work with and help one another, spend time with others around us, and form relationships that lift our spirits and bring us joy. By making friends, we strengthen not only ourselves but also others. Think of your social health goal again. Would achieving your goal strengthen yourself and others? If not, consider revising your goal.

☐ Science Wall: Vocabulary Words

Place the vocabulary cards SOCIAL HEALTH, SOCIAL MEDIA, and PEER on your science wall. Read and discuss the words and their definitions.

Peer

Social Media Family Rules

Read to the children: ***Social media*** is an incredible technology that helps us stay connected to faraway friends and family, join groups of people with similar interests, and share ideas. However, research has shown that overuse can lead to addiction and a decrease in life satisfaction. It is important to follow the guidelines and rules our family has established for social media. Discuss any rules or guidelines your family practices.

Communication Role Play

Give the children the cut-out "Communication Practice Cards."

Read to the children: Being able to connect with others face-to-face and avoid the damaging effects of negative peer pressure, bullying, unhealthy friendships, and social media addiction can be summarized in one word: communication. We need to be able to communicate problems, goals, interests, and fears. Today we are going to practice communicating. On each of these cards is a scenario you need to discuss. We will take turns communicating what is needed for the scenario, following the guidelines below.

1. Use simple, clear words.
2. Speak as calmly as possible in a friendly manner.
3. Ask clear questions as needed.
4. Explain the circumstances, such as what someone else said or did, what you said and did, etc.

Note: If needed, give the children an example by first completing one of the cards yourself. The "Communication Practice Prompts" page has additional prompts for each card as ideas to start a discussion.

Lesson 9 Extension

7–8

Have children grades 7–8 complete the self-directed Lesson 9 extension titled "The Impact of Advertising on Human Behavior" in their student journals.

Communication Practice Cards

Communication Practice Cards

1

Some of your friends have social media accounts, but you do not. One of those friends asks you why you do not have an account. What can you say to communicate why you do not have social media?

2

There is a new family on your street. One day you notice some kids teasing one of the girls in the family. What can you say to help stand up for her? What can you say to help her feel better?

3

A longtime friend has recently begun to say things about you that are hurtful. What can you say to your friend to communicate how you are feeling? What should you do next if he or she continues to treat you unkindly?

4

You have tickets to an event in town and want one of your friends to come with you. You are nervous because you are not sure if your friend would be as excited about the event. What can you say to invite your friend and communicate how important it is to you? What can you say if he or she is not interested?

5

Your good friend has recently told you something and has asked you to keep it a secret. What your friend told you puts your friend in danger, so you suggest he or she talk to an adult. What would you say to your friend? If your friend says no, what can you say to a trusted adult to help your friend get the help he or she needs?

6

Some of your friends start talking about things they saw online that make you feel uncomfortable. What can you say to your friends to leave the conversation? You continue to have bad feelings about what you heard and decide to talk to a trusted adult but are nervous you will be in trouble. What can you say?

7

One of your friends has started talking negatively to you about other friends when they are not around. What can you say not to participate in his or her gossip and encourage him or her not to say mean things about others?

8

You are going to a movie for the first time with friends. The plan is to see a good movie, but when you arrive, some of your friends say they want to see one that you know will be inappropriate. What can you say to encourage them to stick with the original plan?

Connecting with Nature

Objective

Help the children learn the benefits of connecting with nature for their mental, physical, and emotional health.

Preparation:

- ☐ None

Activity Supplies:

- 1 flower (grades 7–8 only)

Note: This lesson will require spending at least a few minutes outdoors. Choose a day to do this lesson when you can go outdoors.

☐ Countless Benefits to Time Spent Outdoors

Read to the children: God designed and created this beautiful world especially for us. People in times past naturally spent much of their lives outdoors in nature, but many people in the modern world spend very little time outside. Doctors and scientists are beginning to understand how important it is for our physical and mental health to spend time outdoors in God's creation. We're going to do a little activity to help us understand why nature is so important for us.

☐ How Does Nature Affect Our Bodies?

Note: If weather permits, have the children complete this activity outside. **Have the children turn to the "Nature Helps Our Bodies" page in Lesson 11 of their student journals. Have them go through the maze and stop when they reach a number. Read the matching numbered section below. Ask the question or read the prompt at the end. After the children answer correctly, they can continue through the maze.**

1 **Read to the children:** Scientists have discovered many ways that being in nature positively affects our bodies. Being outside often offers a lot more stimulation for our senses than being indoors. Our eyes see more, our ears hear more, our noses smell more, and our bodies experience more sensations. The body adjusts to the temperature, feels the wind, and adapts to uneven surfaces like grass, dirt, and rocks. Even rainy or snowy days provide lots of stimulation for our senses if we are dressed appropriately to enjoy them. Scientists are learning that our bodies and minds need the stimulation that nature provides to be healthy. What is one way your senses are being affected right now?

2 Nature may be especially helpful to children and adults who have a hard time focusing and paying attention. Many people report that their symptoms improve when they are outdoors. Why do you think being outside would improve someone's focus?

3 Studies have also found that spending time outdoors reduces our bodies' production of stress hormones, like adrenaline and cortisol. These chemicals can help us when we are in danger, but sometimes our bodies produce them when they aren't needed. When we are worried or upset, these chemicals can make our hearts work harder unnecessarily. Why would stress hormones be helpful when we are in danger?

4 If you feel worried or sad or angry, going outside for a while can help you calm down. Many scientists have found that families who spend more time outdoors are often happier, better behaved, and less anxious. Share a time when you felt calmer outside.

5 Nearsightedness is much more common in children today than it was when your parents and grandparents were children. Some doctors believe that is because children today spend too much of their time indoors, often looking at screens. Children who spend more time outdoors in nature are less likely to need glasses to correct nearsightedness. Why do you think looking too much at screens is bad for your eyes?

6 It's not surprising that being outside means being more physically active. Children who spend more time outdoors also spend more time walking, running, climbing, jumping, swinging, and playing. What is your favorite outdoor activity?

7 When our bodies are hurt, being around nature can help us heal faster, even if we can't be outside. A famous study of hospital patients who had surgery learned that patients who had a window looking out on leafy trees healed more quickly and needed less pain medication than patients whose windows looked out on a brick wall. Knowing about the benefits of nature, what could hospitals do to help patients heal faster?

Nature Art Study

Have the children turn to the "Nature Art Study" page in Lesson 11 of their student journals. Take a few minutes to talk with the children about what they see in the paintings and how the paintings make them feel.

Read to the children: While being outdoors is one of the best things we can do for our physical and mental health, sometimes we can't go outside for one reason or another. When that happens, we can still get the benefits of nature! Scientists have learned that looking at pictures or artwork of nature and listening to sounds of nature can have many of the same benefits as actually being outdoors.

Fractals in Nature

Show the children the "Fractals in Nature" pictures located on the next page. Read to the children: An interesting benefit of being in nature is found in seeing natural patterns called fractals. A *fractal* is a repeating, never-ending pattern. We can find fractals in nature in the spiral of a shell, the branching of lightning, or the arrangement of petals on a flower. Our brains respond to these natural patterns by calming down and reducing stress. As you look at these patterns, do you find them relaxing to look at? Which is your favorite and why? Can you guess what object in nature each of these patterns is from? [1. pine cone 2. nautilus shell 3. sunflower 4. succulent plant 5. Romanesco broccoli 6. spiral aloe]

Forest Immersion (Optional)

Read to the children: Across the world people have discovered variations of forest immersion. *Forest immersion* means spending time in the woods, not necessarily hiking or exploring, but just being present in the woods, enjoying them by hearing, seeing, smelling, and touching. Some studies have shown that breathing in the chemicals released by trees can benefit our bodies.

If possible, take the children to a wooded area and encourage them to immerse themselves in nature for a while. Talk with them about how being in the woods makes them feel.

Lesson 11 Extension

7–8

Have children grades 7–8 complete the self-directed Lesson 11 extension titled "Nature Journaling" in their student journals.

Fractals in Nature