

Family Unit Study:  
*The Human  
Body*

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## FAMILY UNIT STUDY: THE HUMAN BODY

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## FAMILY UNIT STUDIES

# Welcome Home!

Thank you so much for choosing a How Wee Learn Family Unit Study. This unit study has been created with care by me, a homeschooling Mom and former teacher. These unit studies have worked so beautifully with my own family I knew they must be shared. My time in the classroom, certification as a Reading Specialist, and 18 years as a mom has given me a unique perspective on what children truly 'need to know'.

### What is a Unit Study?

A unit study focuses on critical thinking and problem solving, allowing children to dive deep into fascinating topics and engage in meaningful learning.

When a child is engaged in what he or she is learning, that learning sticks. And when a child is engaged and *fascinated* in what he or she is learning, learning is amazingly fun for the whole family! Say goodbye to those power struggles.

Each unit study is broken down into ten topics with manageable, bite-sized amounts of incredible information. Each of these ten topics include a hands on activity, a math or literacy enrichment question, a YouTube video, book suggestion, interesting fact and discussion question.

### What are the components of a Unit Study?

#### HANDS ON ACTIVITY

Each of the ten topic includes a hands on activity that brings the information shared and discussed to life! This allows children to really engage in and solidify their learning. The hands on activities use items you likely have already. If you do not have an item, think creatively about what you do have on hand and adapt. No buttons? I bet beads could work. No pipecleaners? Maybe you have some yarn!

#### MATH ENRICHMENT WORD PROBLEM

Each unit study includes five math word problems covering the five math strands: Number Sense, Geometry, Measurement, Patterning and Data Management/Probability. The word problem introduces your child to each of these areas with the belief of quality over quantity. This is not a full

math curriculum of course, but an enrichment opportunity and chance to be exposed to some real world math.

As you go through a question, consider how you might change it slightly to ask a follow up question. Perhaps you could ask, "What would happen if there were 6 birds instead of 5?" Or you might get out some manipulatives and help your child dive into deeper learning about the geometry topic introduced.

#### LITERACY ENRICHMENT ACTIVITY

When a child is learning about a fascinating topic, there are so many natural opportunities to tie in literacy development. Reading, researching, recording information, labeling, and note taking will all happen very naturally.

On top of this, each unit study includes five literacy enrichment activities modified to three levels so they are fitting for the whole family. Creating poems, public speaking, practicing letter formation, and literacy scavenger hunts are all fun ways literacy learning is brought to life with these unit studies.

#### CURATED YOUTUBE VIDEO

Each of the ten topics includes a carefully curated YouTube video. Dive into some fun and easy learning with experts in the field, entertaining stories, and inspiring tales, all selected to highlight key learning concepts. Enjoy some time snuggled on the couch learning with popcorn and a movie!

#### BOOK SUGGESTION

The book suggestions for each topic are just that—suggestions. Any books at all on the unit study theme are strongly encouraged. Immersing our



children in a literacy rich environment and offering plenty of time to dive into research, pictures, and stories is key for child-led learning.

### INTERESTING FACT

Did you know that elephants suck their trunks much like babies suck their thumbs? Or that a human has the same number of neck bones as a giraffe? Interesting facts are a wonderful way to spark a child's interest and imagination, which is why every topic includes an interesting fact.

### DISCUSSION QUESTION

Asking the right questions and having meaningful discussions is a wonderful way to meet your child at his or her current level of understanding and to help your child grow his or her learning and thinking about topics. So much can be learned through one meaningful discussion!

### How do I use a Unit Study?

These unit studies are completely flexible and can be used however you wish. For those who would like a few suggestions, I will outline two possible ways you might choose to use these unit studies.

#### OPTION 1: FOCUSED UNIT STUDY

Your family might choose to focus on one unit study over a two day period.

Day 1	<ul style="list-style-type: none"> <li>• Introduce the topic with the curated YouTube video</li> <li>• Have an amazing discussion using the discussion question as a prompt</li> <li>• Research more about the topic with the suggested book or a book of your choice</li> <li>• Read the interesting fact together</li> </ul>
Day 2	<ul style="list-style-type: none"> <li>• Dive into the hands on activity for some deep learning</li> <li>• Complete the math or literacy enrichment question</li> </ul>
Day 3+	<ul style="list-style-type: none"> <li>• Core skill work in reading, writing and math at your child's individual level</li> <li>• Go on a family outing</li> <li>• Extracurricular activities</li> <li>• Start another topic!</li> </ul>

#### OPTION 2: BLENDED UNIT STUDY

Alternatively, your family might choose to blend the unit study with your core skill learning over a three day period.

Day 1	<p>Morning:</p> <ul style="list-style-type: none"> <li>• Core skill work in reading, writing and math at your child's individual level</li> </ul> <p>Afternoon:</p> <ul style="list-style-type: none"> <li>• Introduce the topic with the curated YouTube video</li> <li>• Have an amazing discussion using the discussion question as a prompt</li> </ul>
Day 2	<p>Morning:</p> <ul style="list-style-type: none"> <li>• Core skill work in reading, writing and math at your child's individual level</li> </ul> <p>Afternoon:</p> <ul style="list-style-type: none"> <li>• Research more about the topic with the suggested book or a book of your choice</li> <li>• Read the interesting fact together</li> <li>• Complete the math or literacy enrichment question</li> </ul>
Day 3	<p>Morning:</p> <ul style="list-style-type: none"> <li>• Core skill work in reading, writing and math at your child's individual level</li> </ul> <p>Afternoon:</p> <ul style="list-style-type: none"> <li>• Dive into the hands on activity for some deep learning</li> </ul>
Day 4+	<ul style="list-style-type: none"> <li>• Core skill work in reading, writing and math at your child's individual level</li> <li>• Family outings</li> <li>• Extracurricular activities</li> <li>• Start another topic!</li> </ul>

There is no right or wrong way to dive into this unit study. When learning is this exciting, you simply cannot go wrong!

I hope you and your family love this unit study! If you have any questions at all, wish to purchase more unit studies, or if I can be of assistance, please visit [www.howweelearn.com/family-homeschooling-unit-studies](http://www.howweelearn.com/family-homeschooling-unit-studies) or email me at [sarah@howweelearn.com](mailto:sarah@howweelearn.com).

xo  
Sarah



## TOPIC 1

# The Human Body

The human body is made up of many different systems that all work cooperatively with one another. These systems include: the Muscular System, the Skeletal System, the Digestive System, the Respiratory System, the Circulatory System, and the Nervous System. Let's explore...

### Spark Curiosity



Did you know? Humans and giraffes have the same number of neck bones (vertebrae) – 7!



Give your buddy a high five! Can you count all the body parts that worked together to give a high five?

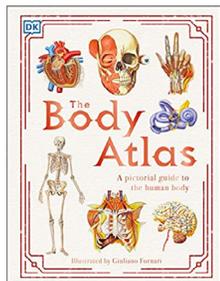
### Resource Suggestions



#### Oxygen's Surprisingly Complex Journey Through Your Body

TED-Ed

Oxygen's surprisingly complex journey through your body, from TED-Ed. Designed for older learners.



#### The Body Atlas

DK

How well do you know your body? What happens under your skin? Where exactly is your stomach? What does your liver do? The Body Atlas answers all these questions and many more.

### HANDS ON ACTIVITY

- "Playdough Human Body Systems" on page 7
- "Human Body Playdough Mats" on pages 26 to 31

### Math Enrichment Word Problem

Have blocks, stones, or other manipulatives available for these math problems. Be flexible and change up the numbers to make these problems the right challenge for your children. Extend on the problems and ask follow up questions if your child is enjoying these challenges!

- ★ Your hand has 27 bones in it. Out of these 27 bones, 5 bones make up the palm of your hand. Use blocks or counters to figure out how many bones make up the rest of your hand once you take away the 5 for your palm ( $27 - 5$ ).
- ★★ Your hand has 27 bones in it. If you have 27 bones in each hand, how many bones are in both of your hands combined?
- ★★★ Your hand has 27 bones in it. Each finger is made up of 3 phalanges and each thumb is made up of 2 phalanges. How many phalanges are there in total in both your hands? How many hand bones are not phalanges?



## HANDS ON ACTIVITY

# Playdough Human Body Systems

Types of Learning: Hand Strengthening, Fine Motor, Hand Dexterity, Sensory, Science, Colour Mixing, Art

### WHAT'S HAPPENING?

There are six main systems that work together in the human body:

**The Digestive System:** Breaks down food to release nutrients. Primary Organs: Stomach, Large and Small Intestines, Esophagus

**The Respiratory System:** Gathers oxygen and removes carbon dioxide. Primary Organs: Lungs, Trachea

**The Muscular System:** Allows the body to move. Primary Organs: Muscles

**The Skeletal System:** Gives your body support and structure so you can stand up. Primary Organs: Bones (Skull, Ribs, Vertebrae, Femur, Pelvis, etc.)

**The Circulatory System:** Pumps blood through your body. Primary Organs: Heart, Blood Vessels (Arteries, Veins, Capillaries)

**The Nervous System:** Sends messages from your brain to the rest of your body and vice versa. Primary Organs: Brains, Nerves, Neurons, Spinal Cord

*Adapted from Generation Genius.*

[Check it out here for more interesting facts about the human body systems.](#)

### Materials

- Playdough
- Clear Contact Paper

### Directions



"Human Body Playdough Mats" on pages 26 to 31

1. Make a big batch of playdough or buy some from the dollarstore. This activity works best with lots of different colours!
2. Add clear contact paper to the Human Body Playdough Mats printables and have your children explore the different body systems.
3. As you are playing with this activity, it is a great time to be reading a library book or discussing the roles the various parts of the body play!

### Playdough Recipe

This is the best playdough recipe, as even very little ones can help in almost the whole recipe. PLUS you can't mess it up! If it is too sticky – add more flour, too clumpy – add more boiled water.

1. Mix **1.5 cups flour**, **1/2 cup salt**, and **2 tsp cream of tartar** in a bowl. The order of ingredients doesn't matter – just pop it all in and stir!
2. Add in **1 cup boiling water** and stir. You can add **food colouring** directly to the boiling water if you prefer for nice, easy colour mixing. Or if you want different colours, you can add the food colouring at the end into divided batches.
3. Knead a few times and it will become perfectly smooth. You can mix in some **essential oils** if you have any, or **vanilla**, or **cinnamon**.



## TOPIC 2

# Organs

The human body is full of all different systems to keep us healthy, allow us to run and jump, think and breath, eat and digest, and so much more. Our organs are parts of our body's structure that perform specific functions, like our eyes, heart, lungs, and liver. Let's explore...

### Spark Curiosity



Did you know? The human body comes in all shapes and sizes. The tallest known adult is 8' 9" tall (267 cm) and the shortest known adult is 21.5" (55 cm).



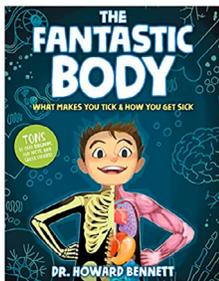
I wonder why we have two eyes? How do they work together?

### Resource Suggestions



**How Our Eyes Work**  
Smile and Learn - English

Learn about each part of the eye and how they work together to help us see.



**The Fantastic Body**  
Howard Bennett

A comprehensive guide to the human body meets hilarious kid humor in this gorgeous full color book filled with more than 1,000 diagrams and fun facts!

### HANDS ON ACTIVITY

- "My Body's Organs" on page 9

### Math Enrichment Word Problem

Have blocks, stones, or other manipulatives available for these math problems. Be flexible and change up the numbers to make these problems the right challenge for your children. Extend on the problems and ask follow up questions if your child is enjoying these challenges!

- ☆ The average person blinks about 20 times per minute. Try to not blink for as long as you can! As you are doing this, count out loud. How long could you not blink? Now have your grown up do this. Who could not blink for the longest? How much longer?
- ☆☆ The average person blinks about 20 times per minute. How many times does a person blink in 3 minutes?
- ☆☆☆ The average person blinks about 20 times per minute. How many times does a person blink in 7 minutes? What about in 30 seconds?



## HANDS ON ACTIVITY

# My Body's Organs

Types of Learning: Science, Art, Fine Motor, Building to Scale, Visual Spatial, Vocabulary Building

### WHAT'S HAPPENING?

An organ is a group of tissues that perform a particular job for the body. There are 79 organs in the human body. While including all 79 in your project would be epic, you might choose to include only a few major ones. Here are some of the major organs and their functions:

**Brain:** The command center for your body. The brain is in control of our thoughts and all other organs of our body.

**Heart:** Responsible for pumping blood through our body and into our lungs so fresh oxygen can be added.

**Lungs:** Bring air into our bodies so we get the oxygen we need. The lungs also remove carbon dioxide from our bodies.

**Stomach:** Helps to digest our food and break it down so we can absorb the nutrients.

**Intestines:** Absorb the nutrients from the broken down food.

**Liver:** Removes harmful substances from our blood.

**Kidney:** Filters our blood and is responsible for producing urine.

**Bladder:** Stores the urine.

*Adapted from BBC.*

[Check it out here for more interesting facts about organs.](#)

### Materials

- Lots of paper
- Pencil
- Construction paper
- Scissors
- Glue
- Research materials

### Directions

Let's figure out where some of our organs are located! You can make one of these together as a family, or do one for each child:

1. Tape paper together to make a piece that is as big as your child.
2. Trace your child's body on the paper.
3. Together, use construction paper to cut out organs (use your library books and YouTube video to help you).
4. Glue your paper organs onto the traced body!





## TOPIC 3

# The Skeletal System

All of the bones in the human body make up the Skeletal System. Without the Skeletal System you would be like a jellyfish! Let's explore...

### Spark Curiosity



Did you know? Babies have more bones than adults. Their 300 or so bones fuse together over time to become 206.



Can you guess how tall you might be as a grown up? What clues could you use to make your guess?

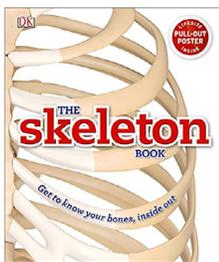
### Resource Suggestions



#### Bones for Kids

Clarendon Learning

We will learn about all kinds of bones in the body including: Compact vs Spongy Bone, Bone Marrow and its purpose, Long bones vs short bones and so much more.



#### The Skeleton Book

Robert Winston

Did you know human bones are eight times stronger than concrete? Or that both humans and giraffes have seven vertebrae in their necks? You will learn about these amazing human body facts and much more in this fascinating book for children.

### HANDS ON ACTIVITY

- "Q-Tip Skeleton" on page 11

### Math Enrichment Word Problem



"Hand Bones" on page 32

Print out the Hand Bones printable and have your children cut out the bones. Hide the bones and have your children find them! As you write letters or words on the bones, use a different colour for each child so everyone can easily find their own bones.

- ★ Put a letter on each bone and have your child call out all the letters and sounds as he or she finds the bones.
- ☆☆ Write a bone name, body part, or a word family word (e.g. cat, hat, pat) on each bone for your child to read as they find the bone.
- ☆☆☆ Make a word scramble! Write a secret message, putting one letter on each bone, and have your child try to put the bones in order to crack the code!



## HANDS ON ACTIVITY

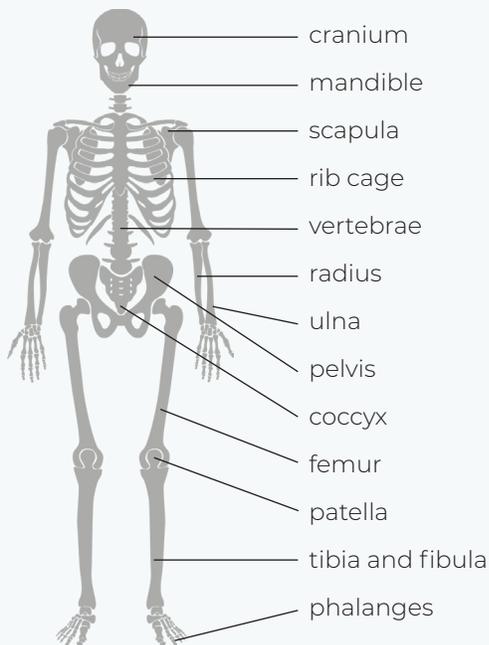
# Q-Tip Skeleton

Types of Learning: Fine Motor Skills, Anatomy, Recreating, Visual Spatial Awareness

### WHAT'S HAPPENING?

Each of the 206 bones in our body has a special job. Some bones, like our skull and ribcage, protect organs. Other bones, like those in our arms and legs, help us to move and run and jump.

Our skeletal system includes more than just our 206 **bones**. It also includes the **tendons**, which attach our bones to our muscles, and **ligaments**, which attach bones to other bones.



*Adapted from Ducksters.*

[Check it out here for more interesting facts about skeletons.](#)

### Materials

- Research materials
- Q-tips
- Scissors
- Paper (optional)
- Glue (optional)
- Pencil (optional)

### Directions

1. Get out a book about skeletons and have your child get creative with Q-tips and a pair of scissors to make their own skeleton!
2. Older children can label the skeletal system.

This activity can be a 'loose parts' play, where your child looks through the book and tries to recreate a skeleton on their own, or it can be a more structured activity where the cotton swabs are glued down to paper.





## TOPIC 4

# Heart

The human heart is a very important organ which works as two pumps. The right side of your heart gets the blood from your body and sends it to your lungs to be refilled with oxygen. The left side of your heart takes this re-oxygenated blood from your lungs and pumps it to the rest of your body. Let's explore...

### Spark Curiosity



The human heart pumps about 2,000 gallons of blood every day!



Which parts of our body keep working at night? How do they work while we're asleep?

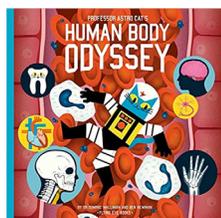
### Resource Suggestions



#### How to Feel Your Heartbeat

SciShow Kids

Feel your pulse and then learn about how your heart delivers oxygen throughout your body.



#### Professor Astro Cat's Human Body Odyssey

Dr. Dominic Walliman

Are our ears supposed to be a weird shape? Why do we sneeze? What is the point in having skin? The human body is one of the most complicated things in the Universe.

### HANDS ON ACTIVITY

- "Make a Heart Model" on page 13

### Math Enrichment Word Problem



"One Hundreds Chart" on page 33



On average, a child's heart beats about 100 times per minute. Use the hundreds chart to count all the way to 100 pointing at each number as you do!



On average, a child's heart beats about 100 times per minute. Pretend you went for a big run and your heart rate went up to 175 beats per minute. How much faster is your heart beating now? After a few minutes of walking, your heart is beating 130 times per minute. How much has it slowed down?



On average, a child's heart beats about 100 times per minute. An average is found by taking many different numbers, adding them all together, and then dividing by the original sample size. Find the average heart rate of this group of people: Mary has a heartbeat of 112, Jeremiah has a heartbeat of 118, Guam has a heartbeat of 106, and Anaisa has a heartbeat of 98.



## HANDS ON ACTIVITY

# Make a Heart Model

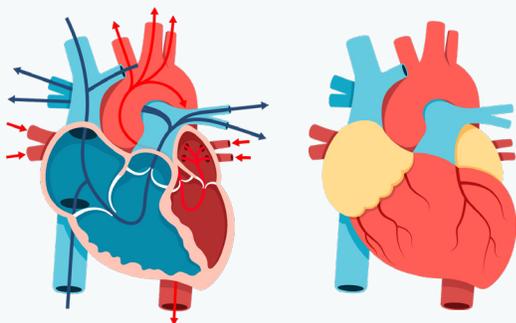
Types of Learning: STEM, Building a Model, Following Instructions, Making Modifications, Problem Solving

### WHAT'S HAPPENING?

How does this model relate to a human heart? Your heart is a very important part of your body. Its job is to send your blood all throughout your body. This blood makes sure that your body has the nutrition and oxygen that it needs. In order to get this blood sent out to all parts of your body, it works as a pump.

There are really two pumps inside your heart and each one has an opposite role. The right side of your heart gets blood from your body and pumps it into your lungs. The left side of your heart gets the blood from your lungs and pumps it out to the rest of your body.

It is the beating of your heart that makes it work like a pump. Just as the model you made will not pump out the water without your pushing on the balloon, your heart will not pump out your blood without beating, or squeezing.



### Materials

- Mason jar
- Balloon
- Small balloon (a water balloon works great!)
- Two elastics
- Tape
- Two straws

### Directions

1. Fill a mason jar 1/3 of the way with water.
2. Cut the mouth part off a balloon and stretch it over the mason jar so it is taut at the top.
3. Poke two small holes in the stretched balloon so the straws can be inserted easily. Secure the balloon with an elastic and tape around the mouth of the jar.
4. Attach a full, small balloon to one straw with an elastic and tape. Insert it into one hole, balloon side up.
5. Insert a plain straw into the second hole.
6. Push on the taut balloon over the mason jar in the middle, and watch the water pump out of the plain straw!





## TOPIC 5

# Lungs

Our lungs are the organs that allow us to breath. When we breath in—or inhale—our lungs fill with air which contains oxygen. When we breath out—or exhale—a gas called carbon dioxide flows out of our lungs. Let's explore...

### Spark Curiosity



Did you know? Each person takes an average of 20,000 breaths a day.



How many body parts can you name that we only have one of? How many can you think of that we have two of? More than two?

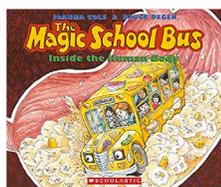
### Resource Suggestions



#### The Diaphragm

Operation Ouch

Gross alert! Take a look at a real (pig's) diaphragm and learn how it is behind every breath you take.



#### The Magic School Bus Inside the Human Body

Joanna Cole

Arnold has swallowed the Magic School Bus! Now, instead of seeing an exhibit of the human body at a museum, the class is taking a look at Arnold's stomach, his intestines, his bloodstream, and more from the inside on this heart-stopping field trip.

### HANDS ON ACTIVITY

- "Make a Lung Model" on page 15

### Literacy Enrichment Activity

Make a journal! A journal is a great way to both document learning and encourage literacy development.

- ☆ Children can draw pictures of what they are learning and write the beginning letter to label different parts of their drawing.
- ☆☆ Have your child stretch out words by saying them slowly and writing down the sounds that she hears as she writes her journal entry. Encourage your child to write down some interesting facts, cool bone names, or things she is wondering about. Encourage her to draw a picture as well.
- ☆☆☆ Have your older children practice writing skills in much the same way as your younger children. Encourage your child to draw a picture as well! Have library books handy so she can check her spelling and edit her own work as she goes.



## HANDS ON ACTIVITY

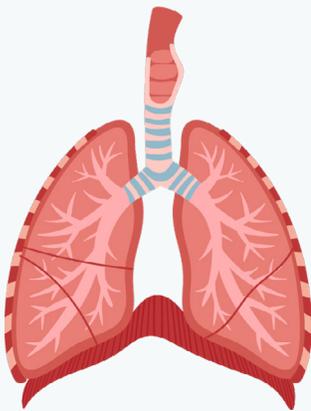
# Make a Lung Model

Types of Learning: STEM, Building a Model, Problem Solving, Fine Motor Skills, Vocabulary Building, Teamwork

### WHAT'S HAPPENING?

How does this model relate to a human lung? Your lungs are responsible for bringing **oxygen** into your blood and removing **carbon dioxide** from your body. When you take a big breath, your lungs fill with air rich with oxygen. This gets passed into your blood and then your blood goes into your heart to be pushed around your body, returning to your lungs when it is almost out of oxygen to be filled again.

In order to fill, your lungs need space. A muscle stretched across your chest called your **diaphragm** moves down allowing space for your lungs to fill with air. Your ribs also move out, allowing even more room.



### Materials

- Plastic bottle
- Two balloons
- A straw
- Elastic
- Tape
- Playdough

### Directions

1. Cut a plastic bottle in half, removing the bottom.
2. Cut the top half off of one balloon and knot the bottom. Stretch this over the bottom of the plastic bottle and secure it with tape so the knot hangs in the middle.
3. Attach the second balloon to the straw using an elastic and tape (be sure not to pinch the straw shut).
4. Insert the straw with the balloon into the bottle and then secure the mouth of the bottle with playdough holding the straw in place.
5. Pull down on the knot in the bottom balloon (the 'diaphragm') and watch the 'lung' balloon inflate. Release the 'diaphragm' balloon and the air leaves the 'lung'.





## TOPIC 6

# Brain

Our brain is a grey and wrinkly organ and about the same size as your two fists put together. This organ does not look like much, but it is the command center for your body! Use The Human Brain printable to learn about the different parts of the brain. Let's explore...

### Spark Curiosity



Did you know? Even though your brain is only 2% of your body weight, it gets about 20% of your blood supply.



I wonder how we dream?

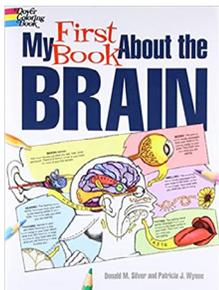
### Resource Suggestions



#### How Your Brain Works

Nemours KidsHealth

Animated friends go on an adventure to find the four parts of a brain and learn about what each one does.



#### My First Book About the Brain

Patricia J. Wynne

Discover the workings of the body's most complex organ! How does the brain control the rest of the body? How does it enable the senses to function, regulate speech, affect balance, and influence sleep and dreams?

### HANDS ON ACTIVITY

- "Playdough Brains" on page 17
- "The Human Brain" on page 34

### Literacy Enrichment Activity

The human brain is responsible for creating all of the messages that our body receives. The brain contains billions of nerve cells called neurons. Neurons communicate with each other by sending electrical and chemical signals. Create your own secret message system!

- ☆ Help your child to come up with an alphabet code. Write down the letters of the alphabet and draw a simple symbol beside each letter with your child. Use this code to practice family member names and simple words.
- ☆☆ Have your child write down the letters of the alphabet and draw her own special symbol for each letter. Then have her send you a message. Be sure to respond in secret code!
- ☆☆☆ This activity can be the same as the version above. This is fun for all ages and ability levels!



## HANDS ON ACTIVITY

# Playdough Brains

Types of Learning: Sensory, Hand Strengthening, Building to Scale, STEM, Vocabulary Building

### WHAT'S HAPPENING?

The human brain consists of the **cerebrum**, **brainstem** and **cerebellum**. The cerebrum is divided into four lobes (frontal, parietal, occipital and temporal).

The **frontal lobe** is located at — you guessed it! — the front of your brain. The job of this lobe is to help you make decisions, stay organized, and also to help you manage your emotions.

The **parietal lobe** is located just behind your frontal lobe. The job of this lobe is to help you notice when something is hot or cold or painful. It is related to the sense of touch.

The **occipital lobe** is located above your neck at the very back of your brain. It is responsible for sight and identifying what it is that we see.

The **temporal lobe** is located just above your ears. This lobe is to blame when you have “baby shark doo-doo-doo-doo-doo-doo” stuck in your head! It is responsible for hearing as well as memory.

The **brainstem** is located where the spinal cord meets the brain. It has many functions, including regulation of heart rate, breathing, sleeping, and eating. All information that travels between the brain and body passes through the brainstem.

The **cerebellum** is located above the brain stem and is responsible for motor control.

### Materials

- Playdough
- Research materials

### Directions



“The Human Brain” on page 34

1. Make a double batch of playdough and divide it into 5 parts, using food colouring to dye each part a different colour.
2. Create playdough brains! Use library books, videos, and the The Human Brain printable to find a view of the human brain to recreate.
3. Roll one colour of playdough for each of these parts: frontal lobe, parietal lobe, occipital lobe, temporal lobe, and the cerebellum. Discuss the role of each part as you go.

### Playdough Recipe

This is the best playdough recipe, as even very little ones can help in almost the whole recipe. PLUS you can't mess it up! If it is too sticky – add more flour, too clumpy – add more boiled water.

1. Mix **1.5 cups flour**, **1/2 cup salt**, and **2 tsp cream of tartar** in a bowl. The order of ingredients doesn't matter – just pop it all in and stir!
2. Add in **1 cup boiling water** and stir. You can add **food colouring** directly to the boiling water if you prefer for nice, easy colour mixing. Or if you want different colours, you can add the food colouring at the end into divided batches.
3. Knead a few times and it will become perfectly smooth. You can mix in some **essential oils** if you have any, or **vanilla**, or **cinnamon**.



## TOPIC 7

# Spine

Our spines are made of 33 bones that let us bend and move and hold us up. The spinal cord, which is a large bundle of nerves that send information from our brains to our body and back again, is nestled safely in the middle of our spinal cord. Let's explore...

### Spark Curiosity



Did you know? While there are 33 bones in the human spine, only 24 of those bones are movable.



Babies have to learn how to sit up, crawl and walk. What else has your body learned how to do? What are you learning right now?

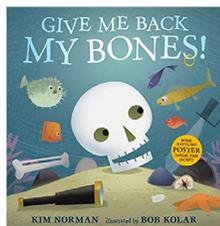
### Resource Suggestions



#### The Nervous System

FreeMedEducation

A brief but technical animated description of the nervous system. Designed for older learners.



#### Give Me Back My Bones!

Kim Norman

A silly pirate skeleton seeks to put its bones back together in this rhyming romp beneath the waves.

### HANDS ON ACTIVITY

- "Make a Spine Model" on page 19

### Math Enrichment Word Problem



"One Hundreds Chart" on page 33



In children, the spine contains 33 vertebrae. Use your one hundreds chart and count by 3's to the number 33. Colour every 3rd square blue. Next, count by 2's until you get to 22. Colour every 2nd square red.



In children, the spine contains 33 vertebrae. Between each of your vertebrae is a gel-like disc that keeps your bones from rubbing together. If there is one disc between each vertebrae, how many discs are there in your spine?



In children, the spine contains 33 vertebrae. As we grow, parts of our spine fuse together so we have 24 vertebrae. We have 7 cervical vertebrae, 5 lumbar vertebrae, and the rest are thoracic vertebrae. How many thoracic vertebrae do we have?



## HANDS ON ACTIVITY

# Make a Spine Model

Types of Learning: STEM, Building a Model, Problem Solving, Patterning, Fine Motor Skills, Vocabulary Building

### WHAT'S HAPPENING?

Your spine is made up of 33 ring shaped bones called vertebrae. They are ring shaped because a large bundle of nerves runs through the middle of these vertebrae. The bundle of nerves connects your brain to the rest of your body and sends messages from your brain.

There are different types of vertebrae in your spine:

**Cervical Vertebrae:** The first seven bones are in the back of your neck and support your head and neck.

**Thoracic Vertebrae:** The next twelve vertebrae hold your ribs in place.

**Lumbar:** The next five vertebrae, the lumbar, and the lower two sections (sacrum and coccyx) work together to give us power to lift heavy things and give us balance to walk and skip.

**Sacrum:** The five vertebrae that make up the sacrum are all fused together forming one single bone.

**Coccyx:** These four vertebrae are also fused together.

In between each vertebrae is cartilage which look like small discs. These discs give our spine cushioning.

*Adapted from Kids Health.*

[Check it out here for more interesting facts about our spines.](#)

### Materials

- Crackers
- Butter knife
- Large marshmallows

### Directions

Today, you're going to create a model of a spine. To make this model sure to engage, we'll use food!

1. Cut some large marshmallows into disc shapes to represent the intervertebral (gel) discs in the spine.
2. Stack the marshmallow slices between crackers, which represent the vertebrae, to create a spine. The cut sides of the marshmallow slices will be sticky, which will help with stacking.
3. While making the spine, chat about the role of the intervertebral (gel) discs. Also chat about how there is a spinal cord that runs right through the middle of the spine, allowing the brain to send messages to the rest of the body.





## TOPIC 8

# Taste Buds

Our tongue has taste buds which are specialized for different tastes: Bitter is at the back of the tongue, sweet is at the tip of the tongue, sour is at the sides at the back, and salty is at the sides near the front. Let's explore...

### Spark Curiosity



Did you know? Human teeth are just as strong as shark teeth.



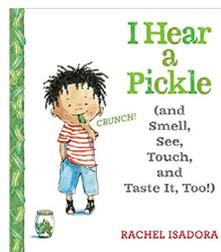
I wonder why we have taste buds?

### Resource Suggestions



**Science for kids | Body Parts - TONGUE**  
Operation Ouch

Dr Chris and Dr Xand are looking at terrific tongues and all the amazing things they do!



**I Hear a Pickle**  
Rachel Isadora

Caldecott Honor winner Rachel Isadora's sweet and simple introduction to the five senses is perfect for the youngest children, who will recognize themselves in charming vignettes portraying a wide range of childhood activities.

### HANDS ON ACTIVITY

- "Taste Bud Experiment" on page 21

### Math Enrichment Word Problem

Have blocks, stones, or other manipulatives available for these math problems. Be flexible and change up the numbers to make these problems the right challenge for your children. Extend on the problems and ask follow up questions if your child is enjoying these challenges!

- ☆ A child has 10,000 taste buds! The number 10,000 is a huge number! Let's make that number a little smaller. Older adults often have only about 5,000 taste buds. What is the number in the thousands column? What is the number in the hundreds column? The tens column? The ones column?
- ☆☆ A child has 10,000 taste buds! If you took the number 10,000 and added one number to the hundreds column, what number would you now have? If you added one number to the tens column, what number would you now have? If you added one number to the ones column, what number would you now have?
- ☆☆☆ A child has 10,000 taste buds! If you took the 10,000 taste buds on your tongue and divided them into 10 groups, how many taste buds would be in each group? What if you divided them into 100 groups?



## HANDS ON ACTIVITY

# Taste Bud Experiment

Types of Learning: Hands On Science, Following Instructions, Science Experiment

### WHAT'S HAPPENING?

Taste buds are tiny sensory organs on your tongue that allow you to taste. All of those tiny bumps on your tongue are called **papillae** – but they are not actually your taste buds. Most of those little bumps contain taste buds. **Microvilli** are the tiny little hairs on your taste buds that send the message to your brain about how something tastes.

Every two weeks or so you get brand new taste buds! The average child has about 10,000 taste buds, while the average adult has only 5,000.

Your taste buds are not the only part of your body responsible for allowing you to taste. In the top of your nose are “olfactory receptors” that help you to smell and send messages to the brain. As you are eating, these olfactory receptors are triggered. They work together with your taste buds to send messages to your brain to allow you to truly taste that delicious food you are eating.

*Adapted from Kids Health.*

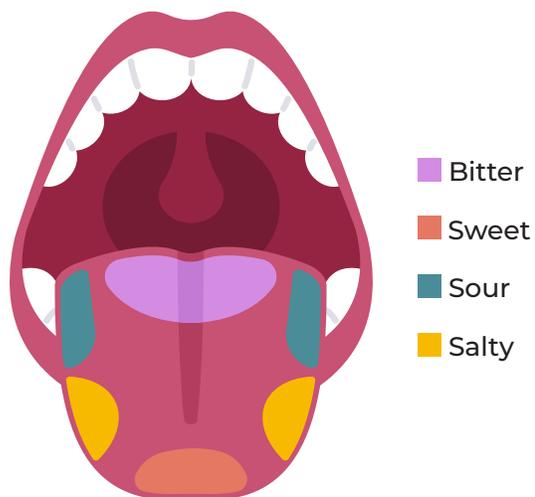
[Check it out here for more interesting facts about taste.](#)

### Materials

- Food items
- Dishes
- Toothpicks
- Q-tips

### Directions

1. Choose a few food items and put them in dishes with toothpicks or Q-tips.
2. Have your children dip their Q-tip into one food and place it at the back of their tongue and then dip it again and place it at the front, and so on trying out their taste-specific taste buds!
3. Some great foods to use are: apple sauce, maple syrup or honey, vinegar, salty crackers or chips broken small, etc.





## TOPIC 9

# Medical Equipment

When we get very sick or when something is not right with one of our body systems, we can visit a doctor. Doctors have many different instruments and medical equipment that they can use to check what is going on inside our body from the outside. An ophthalmoscope is used to examine the interior of eyes, an otoscope is used to look at the outer ear canal, and a stethoscope is used to listen to our lungs and heart. Let's explore...

### Spark Curiosity



Did you know? In addition to the five classical senses—sight, hearing, touch, smell and taste—the human body has at least two more. The vestibular sense detects your movement and the proprioceptive sense detects where your body is. These senses work together to help with many daily activities like jumping, bending over, and giving a hug.



I wonder why we have baby teeth and then lose them for adult teeth?

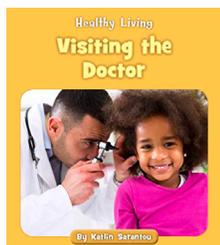
### Resource Suggestions



#### The Science of Hearing

TED-Ed

All about the different parts of the ear, and how the brain locates the source of a sound. Designed for older learners.



#### Visiting the Doctor

Katlin Sarantou

Learn what the doctor does during a visit to make sure you stay healthy.

### HANDS ON ACTIVITY

- “Make a Stethoscope” on page 23

### Math Enrichment Word Problem



“The Human Skeleton” on page 35

Using The Human Skeleton printable (much like what you would see through an x-ray machine), label as many bones as possible! Use your library books to help.

- ☆ Help your child find some easily identifiable bones in a library book. Look for big pictures or bold words. He can try to tell you the letter names and you can print them, labeling the skeleton. Your child can then trace over your letters.
- ☆☆ Have your child look through library books to find some easily identifiable bones. Have him print the bone names on the skeleton, teaching your child how to properly label a picture (by adding a line pointing to the bone that the word connects to).
- ☆☆☆ Have your child look through library books and label as much of the skeleton as he can independently!



## HANDS ON ACTIVITY

# Make a Stethoscope

Types of Learning: STEM, Science, Building a Model, Counting, Comparing, Following Instructions, Fine Motor Skills

### WHAT'S HAPPENING?

Rene Laennec invented the very first stethoscope in the 1800s. His reason for doing this was not really to hear his patients' heartbeats clearer, but because he no longer wanted to press his ear against the bodies of dirty and lice ridden bodies! He wanted to maintain a little distance, and so the stethoscope came to be.

A **stethoscope** is actually a very simple medical instrument. It is made up of a Y shaped rubber tube with ear pieces and a chest piece. By putting the ear pieces in your ears, you can hear sounds coming in through the chest piece.

The chest piece has two sides. One side is called the **diaphragm** that has a flat plastic disc. This disc is good at picking up high pitch sounds that include normal breathing and heartbeats. On the other side of the chest piece is the **bell**, which is a hollow piece of metal shaped like a bell with a tiny hole on the top. This bell side is better at detecting low pitch sounds such as heart murmurs.

*Adapted from How Stuff Works.*

[Check it out here for more interesting facts about the stethoscope.](#)

### Materials

- Small funnel
- Balloon
- Tape
- Cardboard tube (a thick tube, like from an aluminum foil roll, works best!)

### Directions

Today, you're going to make your very own stethoscope!

1. Cut the bottom off a balloon. Stretch the top of the cut balloon over the funnel and secure it with tape.
2. Secure the funnel to the cardboard tube with tape.
3. Now listen to each other's hearts! Try listening while resting, then again after running and notice the difference.





## TOPIC 10

# Staying Healthy

There are many different things we need to do to take care of the many systems within our bodies. We need to get plenty of rest, eat healthy food, exercise, and practice good hygiene. It is important that we practice good hygiene to keep germs and bugs out of our bodies. Let's explore...

### Spark Curiosity



Did you know? On average, each of us will get 200 colds in a lifetime.



What other parts of the body do you want to learn about?

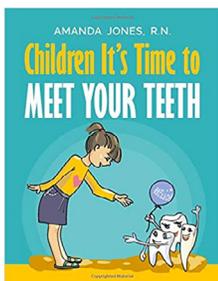
### Resource Suggestions



#### How Your Immune System Works

Nemours KidsHealth

When you get sick, your immune system comes to the rescue. Find out more in this movie for kids.



#### Children It's Time to Meet Your Teeth

Amanda Jones

This book is strategically designed to give your children a better understanding of their teeth, why and how to take care of their teeth.

### HANDS ON ACTIVITY

- "Healthy Body Poster" on page 25

### Literacy Enrichment Activity

Write a Haiku about the human body! A Haiku is a poem written in only 17 syllables. It is divided into 3 lines of 5, 7, and 5 syllables each.

- ☆ Help your child come up with a Haiku poem about the human body. Work together, talking about syllables as you do. You can write the poem and your child can illustrate it.
- ☆☆ Help your child come up with a Haiku poem. Work together and help her figure out how to space her poem. Write it out as a model, and then have her copy it into her own writing.
- ☆☆☆ Have your child write her own Haiku poem about the human body!



## HANDS ON ACTIVITY

# Healthy Body Poster

Types of Learning: Persuasive Writing, Art, Fine Motor Skills, Research, Documenting Findings

### WHAT'S HAPPENING?

There are many things you can do to keep your body running properly. Here are some things you can try to do each day:

**Eat a Variety of Foods:** Can you eat a rainbow? Each vegetable, fruit, meat, grain, and dairy product contains different nutrients for your body. Eat a wide variety each day to give your body the variety of nutrients it needs to stay healthy.

**Drink Water:** Our bodies are made up mostly of water. Did you know that your heart and brain are 73% water and your lungs are 83% water? In order to keep our bodies and organs running properly, we need to drink plenty of water every day.

**Get Outside:** Fresh air and being in nature is a very important part of staying healthy. Being active outside is even better! Go for a walk, run, play at the park, shoot some hoops, play jump rope, or ride your bike.

**Listen to Your Body:** When you are feeling tired, hungry, or full, your body will let you know. You need to take some time to listen to the signs your body is giving you. Slow down each day to check in with your body.

**Wash Your Hands:** Throughout the day, our hands touch and explore many things. That is what they are made to do! However, it is important that we wash our hands before we eat and after we use the bathroom to ensure our hands are not spreading germs.

*Adapted from Kids Health*

[Check it out here for more interesting facts about keeping our bodies healthy.](#)

### Materials

- Large piece of paper
- Research materials
- Paints or markers

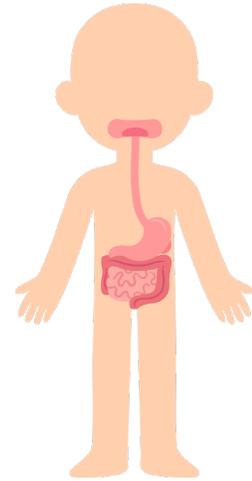
### Directions

Create a poster sharing the information you have learned through books and videos about things we can do to keep our body functioning optimally. Write persuasively to help everyone in your family know how important it is to stay healthy!



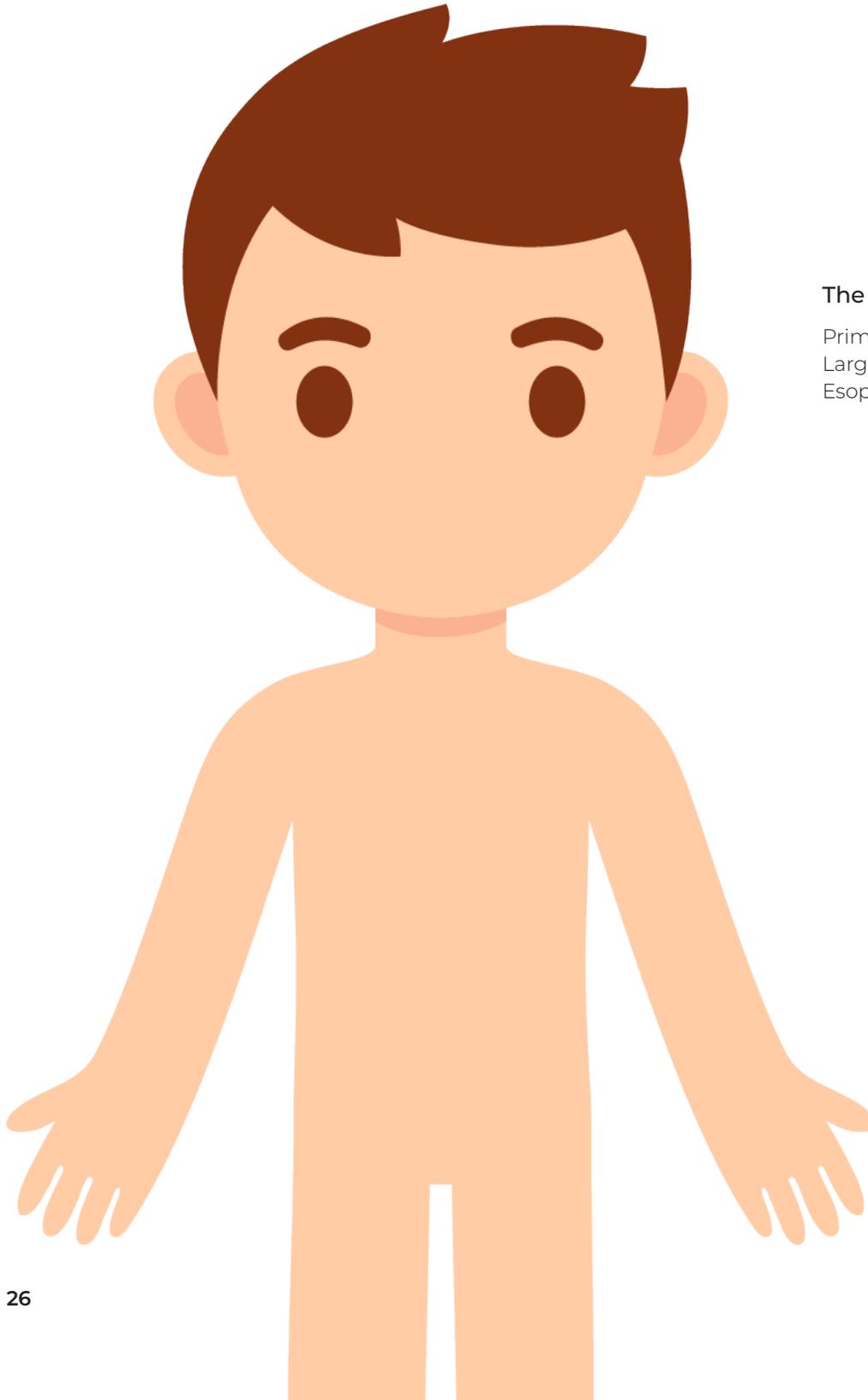
TOPIC: THE HUMAN BODY

# The Digestive System



## The Digestive System

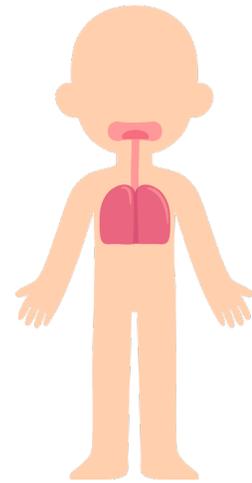
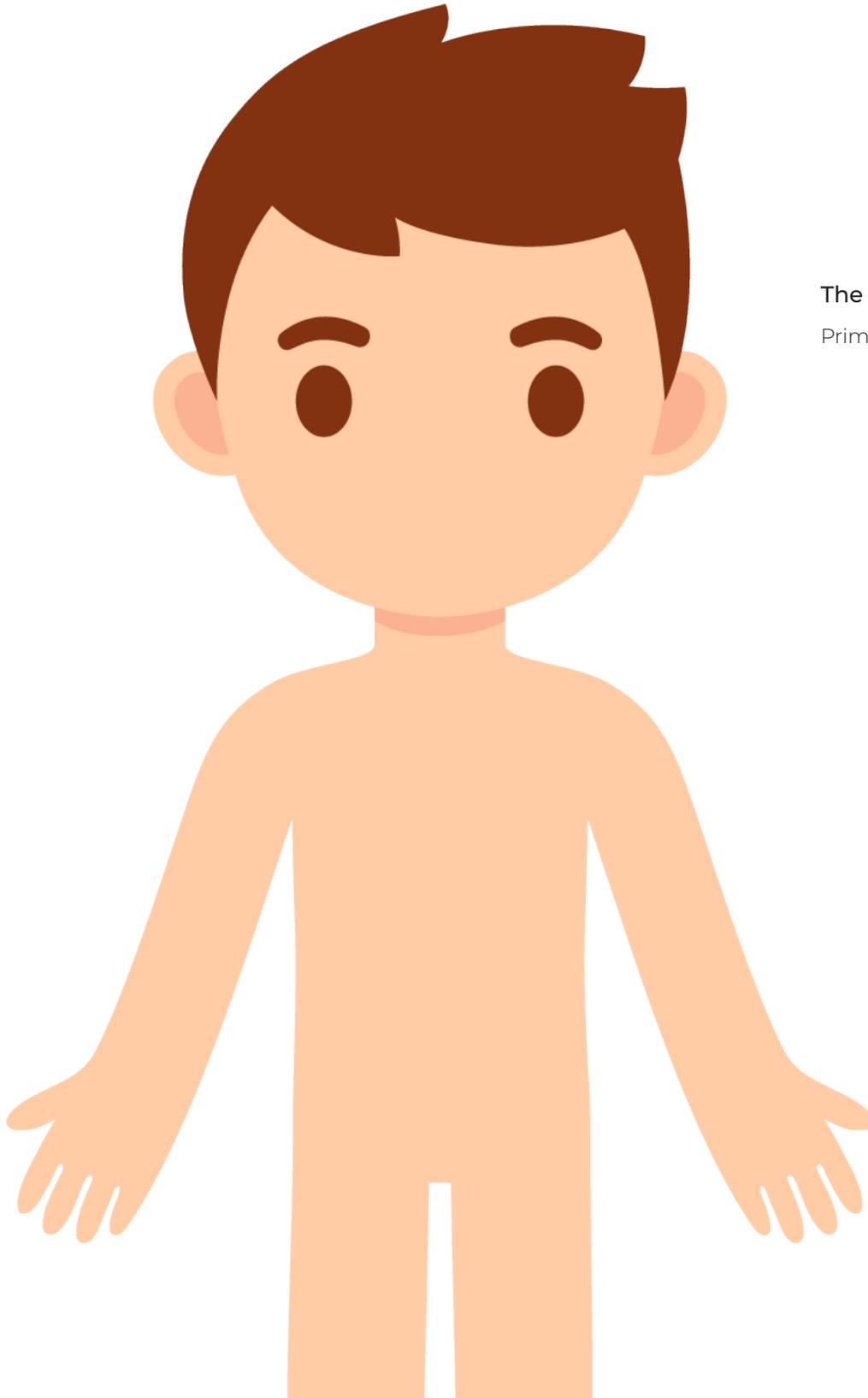
Primary Organs: Stomach,  
Large and Small Intestines,  
Esophagus





TOPIC: THE HUMAN BODY

# The Respiratory System



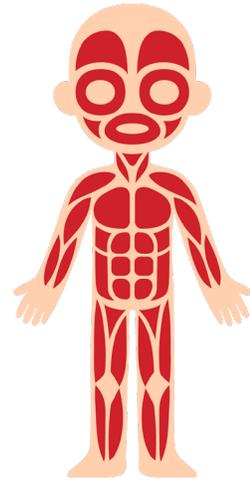
**The Respiratory System**

Primary Organs: Lungs, Trachea

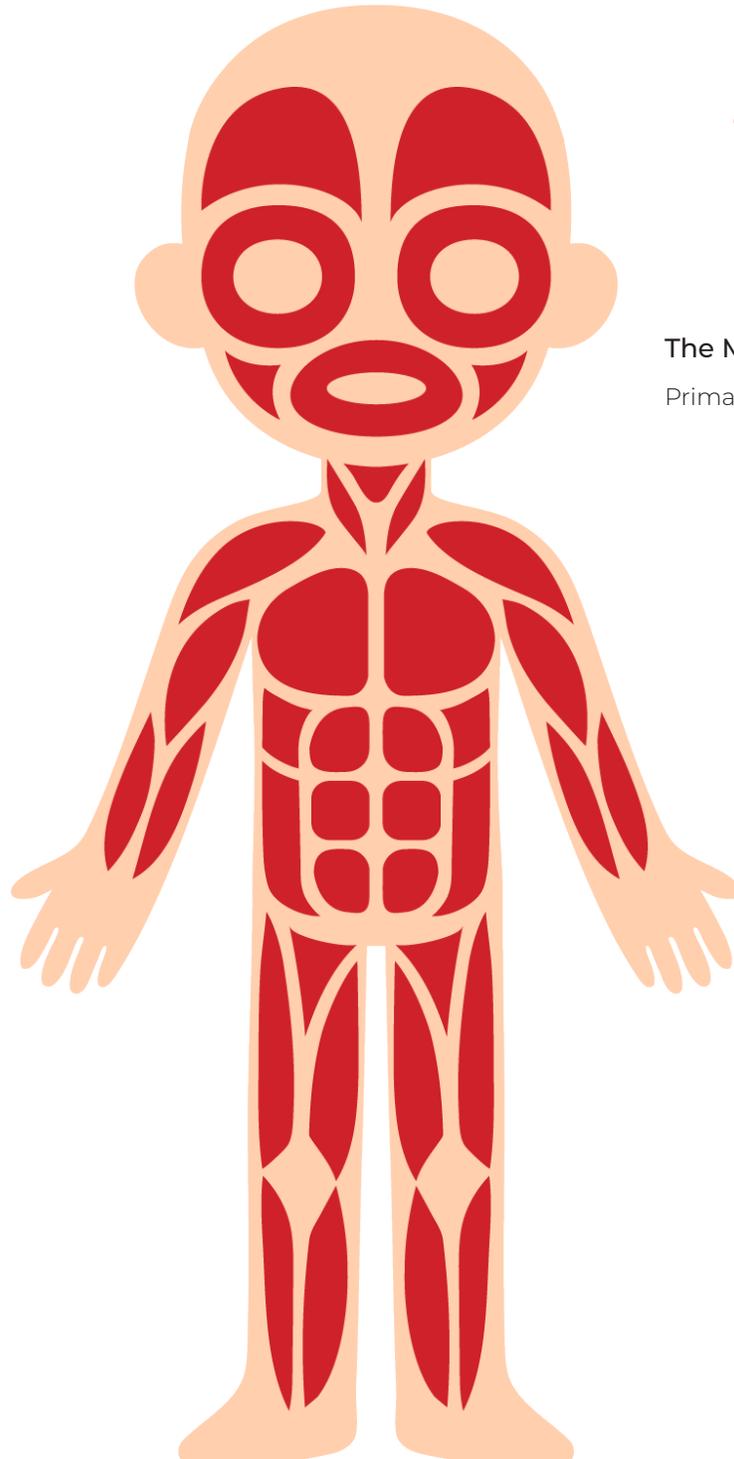


TOPIC: THE HUMAN BODY

# The Muscular System



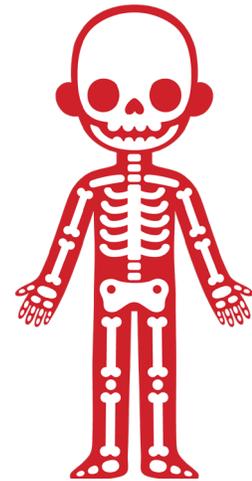
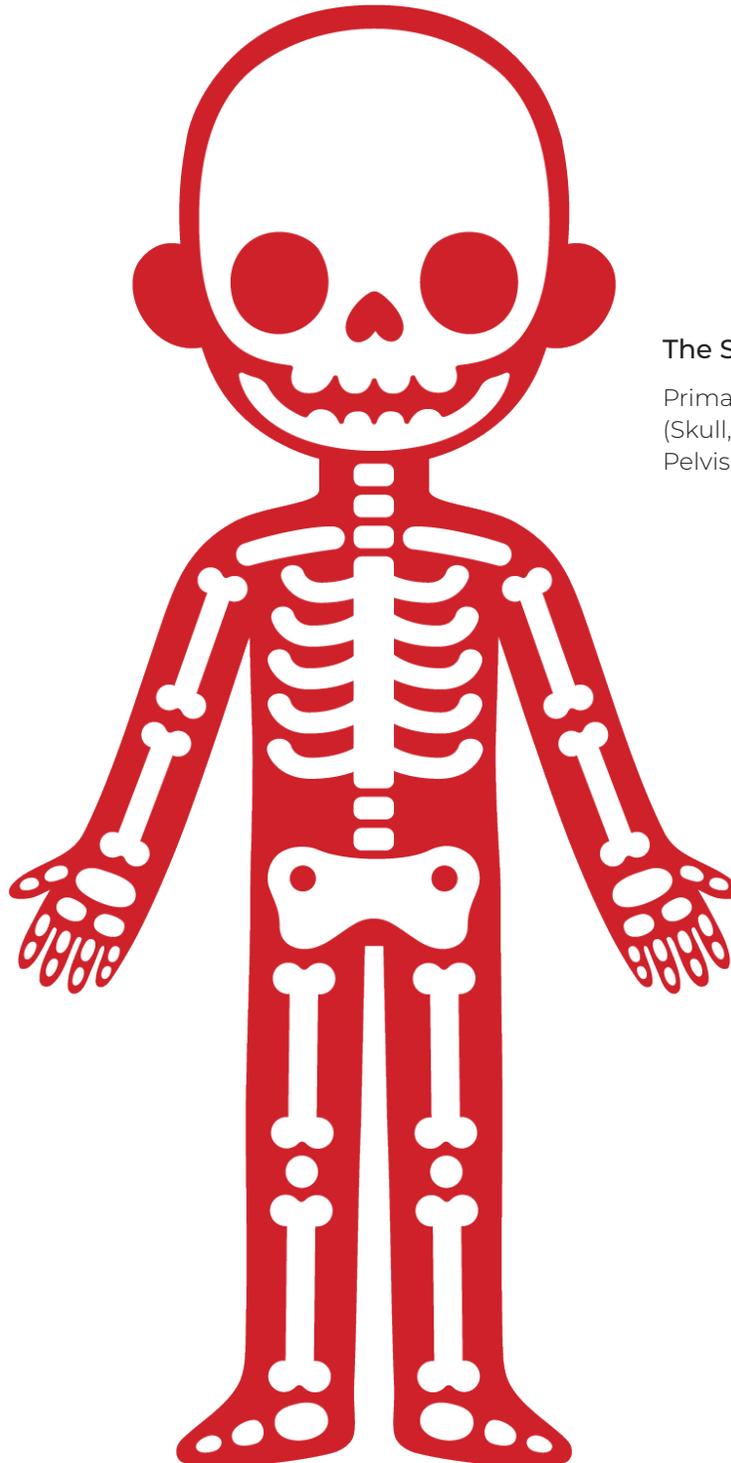
The Muscular System  
Primary Organs: Muscles





TOPIC: THE HUMAN BODY

# The Skeletal System



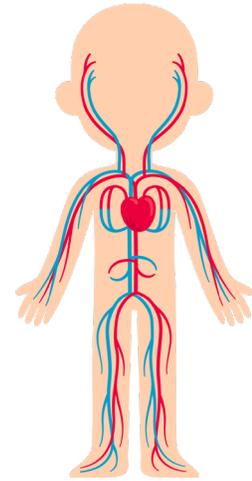
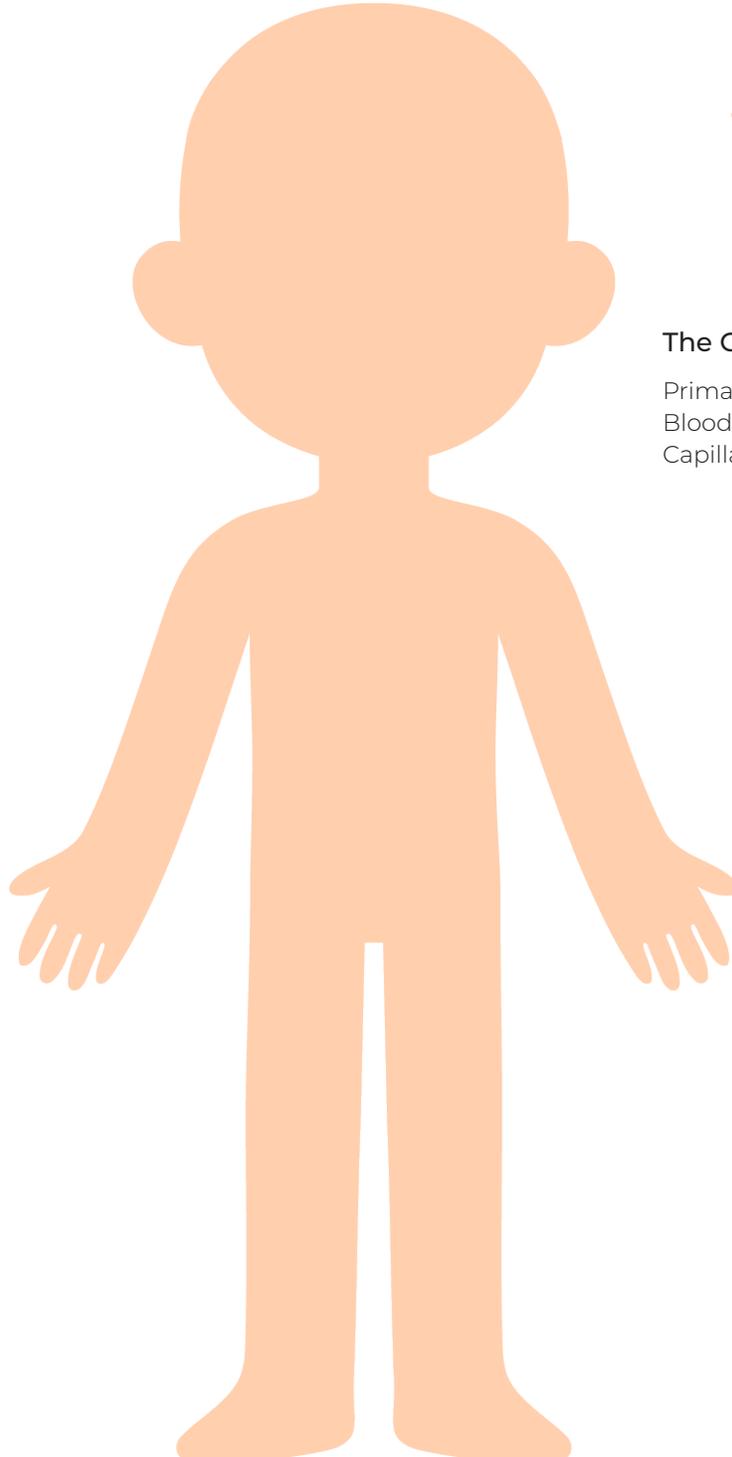
## The Skeletal System

Primary Organs: Bones  
(Skull, Ribs, Vertebrae, Femur,  
Pelvis, etc.)



TOPIC: THE HUMAN BODY

# The Circulatory System



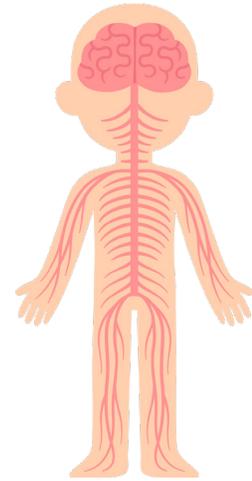
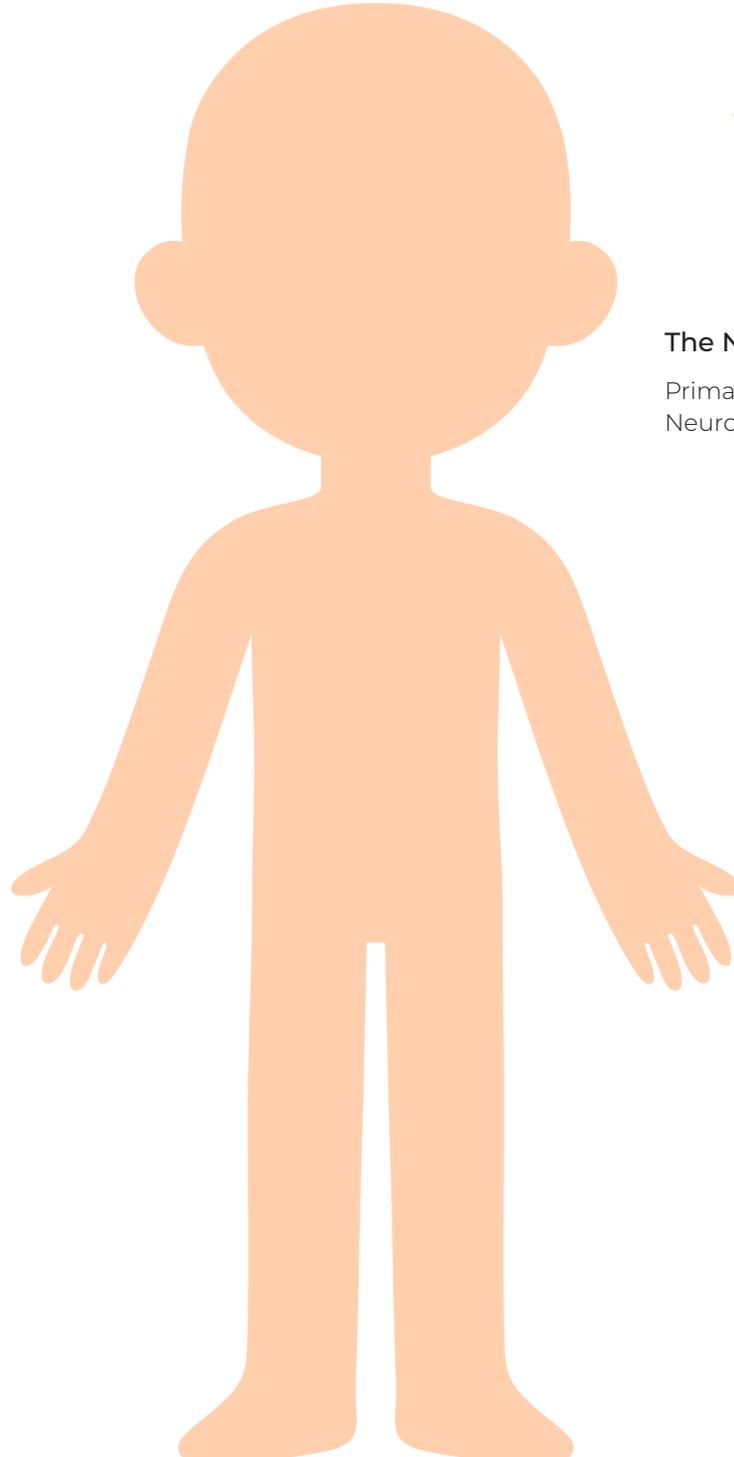
## The Circulatory System

Primary Organs: Heart,  
Blood Vessels (Arteries, Veins,  
Capillaries)



TOPIC: THE HUMAN BODY

# The Nervous System



## The Nervous System

Primary Organs: Brains, Nerves, Neurons, Spinal Cord



TOPIC: THE SKELETAL SYSTEM

# Hand Bones





## MATH RESOURCE

## One Hundreds Chart

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



## TOPIC: BRAIN

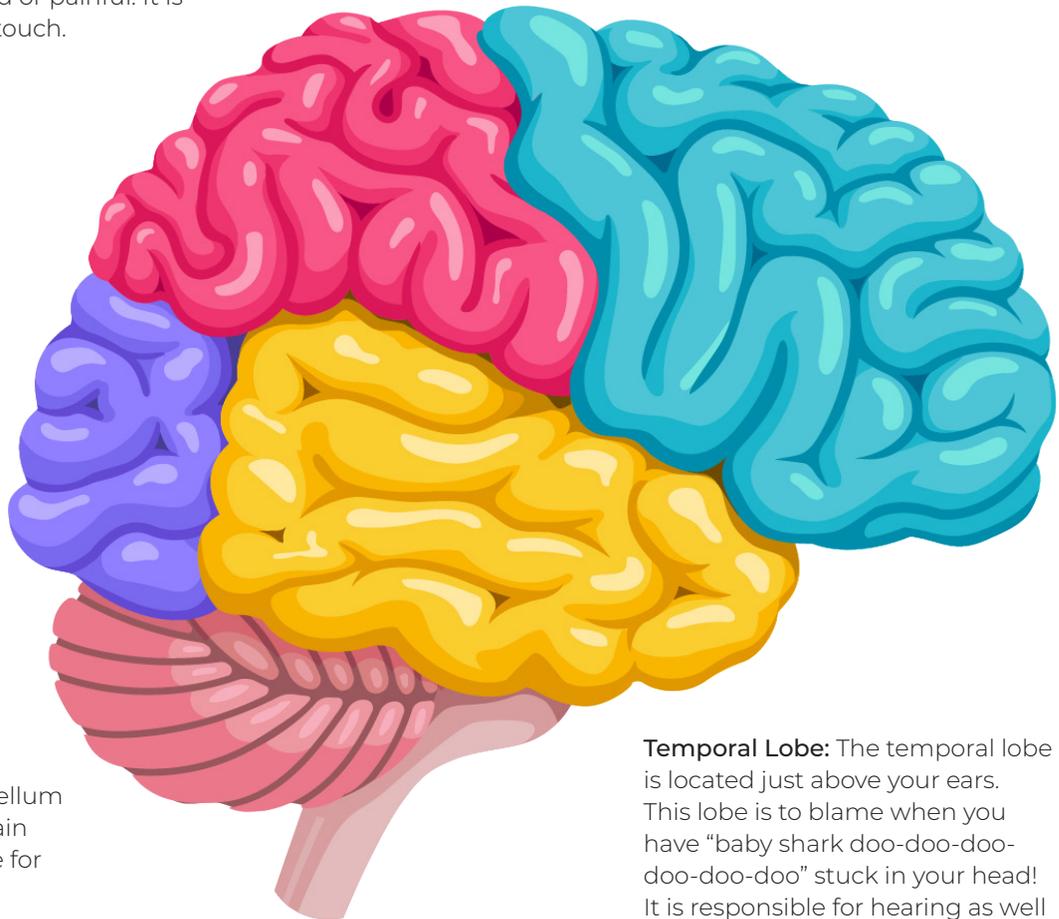
# The Human Brain

The human brain consists of the cerebrum, the brainstem and the cerebellum. The cerebrum is divided into four lobes—the frontal lobe, parietal lobe, occipital lobe and temporal lobe—each with a specific role to play.

**Parietal Lobe:** The parietal lobe is located just behind your frontal lobe. The job of this lobe is to help you notice when something is hot or cold or painful. It is related to the sense of touch.

**Occipital Lobe:** The occipital lobe is located above your neck at the very back of your brain. It is responsible for sight and identifying what it is that we see.

**Cerebellum:** The cerebellum is located above the brain stem and is responsible for motor control.



**Frontal Lobe:** The frontal lobe is located at — you guessed it! — the front of your brain. The job of this lobe is to help you make decisions, stay organized, and also to help you manage your emotions.

**Temporal Lobe:** The temporal lobe is located just above your ears. This lobe is to blame when you have “baby shark doo-doo-doo-doo-doo-doo” stuck in your head! It is responsible for hearing as well as memory.

**Brainstem:** The brainstem is located where the spinal cord meets the brain. It has many functions, including regulation of heart rate, breathing, sleeping, and eating. All information that travels between the brain and body passes through the brainstem.



TOPIC: MEDICAL EQUIPMENT

# The Human Skeleton

