For you created my inmost being;
you knit me together in my mother’s womb.
I praise you because I am fearfully and wonderfully made;
your works are wonderful,
I know that full well.
My frame was not hidden from you
when I was made in the secret place,
when I was woven together in the depths of the earth.
Your eyes saw my unformed body;
all the days ordained for me were written in your book
before one of them came to be.
Psalm 139:13-16 NIV
Goals of the British Columbia Education Plan

Our curriculum team is excited to bring you a summarized version of the new BCEd plan core goals (competencies), strategies and content. As we develop the kits we will be personalizing the content to suit your students’ need and interests. Big ideas and concepts will be the focus as well as curricular threads, inquiry learning (discovering how to ask the right questions based on who, how and why things occur, as opposed to what things occur), technology integration, and collaboration. First Peoples content will include the natural history/culture of our province and encourage our God given diversity. The kits are designed to help you gain a greater understanding of the following:

**Biblical Worldview:**
We believe that every child in our school needs to hear the voice of God interwoven into all of their curriculum. Therefore we will be striving to make sure that this goal is an overarching strategy.

**Communication Competency:**
Involves imparting and exchanging information, experiences and ideas, to explore the world around them, and to understand and effectively engage in the use of digital media.

**Thinking Competency:**
Encompasses the knowledge, skills and processes we associate with intellectual development. It is through their competency as thinkers that students take subject-specific concepts (ideas that interest them) and content, (topics that need to be covered to increase knowledge, and transform them into a new understanding to increase knowledge), and transform them into a new understanding. This includes specific thinking skills as well as how students are allowed to learn, make mistakes and grow from failure. Encompassed in this thinking is the ability to feel safe and comfortable so that students can explore their surroundings.
Creative Thinking Competency:
Involves the ability to generate new ideas and concepts that have value to the individual or others, and then develop these ideas and concepts from thought to reality. It requires a curiosity and a wondering reflection about God’s creation, with a desire to make something new and different from what they have read, seen or observed.

Critical Thinking Competency:
Encompasses a set of abilities that students use to examine their own thinking and that of others, and process information they receive through observation, experience, and various forms of communication.

Social Responsibility:
Involves the ability and disposition to consider the interdependence of people with each other and the natural environment; to contribute positively to one’s family, community, society, and the environment; to resolve problems peacefully; to empathize with others and appreciate their perspectives; and to create and maintain healthy relationships.

Personal and Social Competency:
Is the set of abilities that relate to students’ identity in the world, both as individuals and as members of their community and society.
Learning Strategies

In response to the goals set out by the BC Ministry of Education, HCOS has made it a priority to make use of the following learning strategies throughout our unit studies and courses.

**Biblical Worldview:** Biblical worldview refers to the framework of ideas and beliefs through which a Christian individual, group or culture interprets the world and interacts with it. Individuals with a biblical worldview believe their primary reason for existence is to love and serve God. A Biblical worldview is based on the infallible Word of God. When you believe the Bible is true, then you allow it to be the foundation of your life. We believe that every student at HCOS needs to develop a worldview based on their Biblical thinking and beliefs.

**Inquiry-Based Learning/Mindset:** Students with an inquiry mindset have a God-given curiosity; a desire to dream big, constantly challenge themselves, and a desire to research more for increased understanding and clarity. Students who actively inquire will scan their environments, generate good questions, try new approaches, observe and collect evidence, synthesize the information, draw conclusions, and generate new questions from their research.

**Maker Education:** The Maker Education Initiative’s mission is to create more opportunities for all young people to develop confidence, creativity, and interest in science, technology, engineering, math, art, and learning as a whole through making. This may be through STEAM – science, technology, engineering, art and mathematics. The “maker mindset” includes learning to use your imagination to make connections, use intuition, persist through difficult circumstances in learning, collaborate with other team members and community, and become disciplined learners. Maker education often involves an interdisciplinary approach, teaching science, math and art together. Here is an example. To learn more go to this page.

**First Peoples Content:** First Peoples content has been interwoven into every grade in the new BCEd plan. Aboriginal content is for all learners of all ages, and includes a healthy diversity of approaches. From learning about cultural traditions and schooling injustice, creative ways of storytelling, and good stewardship of land and resources, we can gather rich learning from the traditions of the people groups indigenous to BC. As Christians we can draw many similarities from their holistic thinking, and share how our beliefs and traditions might be similar or different.
HCOS Subscriptions

HCOS families have access to a wide variety of wonderful subscriptions which can be used to enhance student learning. Several of these subscriptions are used throughout the unit. Each year, a document containing the usernames and passwords for each subscription is sent to families. If you have not received this document please contact your child’s teacher.
Big Ideas

“Big ideas are statements that are central to one’s understanding in an area of learning. A big idea is broad and abstract.” (CT) Big ideas represent the overarching theme of each unit. They contain references to the content and key questions students will be investigating throughout the unit. Big ideas are often cross-curricular in nature. Similar themes can be found in many different subject areas within each grade-level.

Science

Multicellular organisms rely on internal systems to survive, reproduce and interact with their environment.
Curricular Competencies

“Competency represents the combined skills, processes, behaviours and habits of mind that learners use to make sense of the world.” (CT)

Science

Demonstrate a sustained curiosity about a scientific topic or problem of personal interest
   Make observations in familiar or unfamiliar contexts
   Identify questions to answer or problems to solve through scientific inquiry
   Make predictions about the findings of their inquiry
With support, plan appropriate investigations to answer their questions or solve problems they have identified
   Decide which variable should be changed and measured for a fair test
   Choose appropriate data to collect to answer their questions
Observe, measure, and record data, using appropriate tools, including digital technologies
   Use equipment and materials safely, identifying potential risks
   Experience and interpret the local environment
Construct and use a variety of methods, including tables, graphs, and digital technologies, as appropriate, to represent patterns or relationships in data
   Identify patterns and connections in data
   Compare data with predictions and develop explanations for results
Demonstrate an openness to new ideas and consideration of alternatives
   Evaluate whether their investigations were fair tests
   Identify possible sources of error
   Suggest improvements to their investigation methods
   Identify some of the assumptions in secondary sources
Demonstrate an understanding and appreciation of evidence
   Identify some of the social, ethical, and environmental implications of the findings from their own and others’ investigations
Contribute to care for self, others, and community through personal or collaborative approaches
   Cooperatively design projects
   Transfer and apply learning to new situations
   Generate and introduce new or refined ideas when problem solving
   Communicate ideas, explanations, and processes in a variety of ways
Express and reflect on personal, shared, or others’ experiences of place
Content and Key Questions

Content refers to the topics that will be investigated throughout the unit. The key questions serve as a guide as you and your child explore the content. Throughout this unit the key questions will be the starting point for learning.

Science

First People’s understandings of body systems in humans and animals

Content: Excretory System
Elaborations: kidneys, ureters, bladder etc.

Content: Reproductive System
Elaborations: ovaries, testes etc.

Content: Hormonal System
Elaborations: chemical messengers in the body (eg: insulin, adrenalin)

Content: Nervous System
Elaborations: brain, spinal cord etc. role of receptors - the brain interprets the signals received and can make mistakes in those interpretations- i.e. optical illusions
How to Use This Kit

The Ministry of Education is in the final stages of overhauling curriculum, learning strategies, and learning goals for students in the Province of British Columbia. This kit is designed with those goals in mind. On the next several pages you will discover the content that serves as the “bulk” of this kit. Rather than being divided by day, the unit plan uses the key questions detailed on page 8 to breakdown content, activities, and experiences.

Each key question will have books to read from the HCS Overdrive E-Library, (if you do not have your client code & pin, please contact Shandra Wiebe at swiebe@onlineschool.ca), videos to watch, and activities to share with your child. You will not be required to complete all activities listed under each key question, instead, you will be able to choose activities which most appeal to you and your child. Each key question featured in the unit will include recommendations on how many activities to complete in order to fully address the curriculum content and competencies. Finally, each activity will have icons (shown on pages 2 and 3) showing which goals of the BCEd Plan the activity addresses.

***You are encouraged to choose varied activities to ensure all goals are being addressed. In order to fully meet the goals of this kit, it is important to read the recommended books.*** Here is a planning sheet for you to use: Unit planner

Reading and discussing/watching and discussing the books and videos listed in this unit will consistently address the following goals of the BCEd Plan:

It is our hope that our redesigned format will allow for flexibility, individual preference, and student-centered learning. When selecting activities to complete with your child we recommend selecting a variety of activities to ensure that you touch on each BCEd Plan goal throughout the unit. Most activities are designed to address multiple goals.
Unit Guide

How do multicellular organisms rely on their internal systems to survive, reproduce and interact with their environment?

Please Note: The recommended number of activities per section is meant to serve as a guide. Families are encouraged to make the kit their own and complete the number of activities that they, and their support teacher, feel are necessary. Each kit is designed to be completed over four to six weeks. This kit is smaller than many of our social studies kits. As such, it is designed to be completed over three weeks with an average of 2-3 activities per week.

(The following books are from the HCS Overdrive e-library, if the link does not open, login and type of the name of the book in the search bar):

Books to Read and Talk About: (Books with a ** in front of their title are highly recommended for fully addressing the content in this unit).

**Learning about the Digestive and Excretory Systems** by Susan Dudley Gold

Things to think about: How can we see God's hand in the design of our body? What is the digestive system? How does it work? What is the excretory system? How does it work? What are the components of each of these systems? How are they connected to one another? Could the digestive system work without the excretory system? How does our body get rid of waste and toxins? What would happen to our bodies if the excretory system stopped functioning properly? What are some diseases that can affect the excretory system? What are some diseases that can affect the digestive system? How do these systems interact with other body systems? How do they interact with their environment to meet their needs? Is any one body system more important than another? Explain your answer.
**Your Nervous System** by Joelle Riley

**Things to think about:** What is the nervous system? How does it work? What are the components of each of the nervous system? How is the nervous system connected to other systems in the body? What are some examples of your nervous system functioning right now? Do you have to think in order to control your nervous system? Could the human body continue to function without the nervous system? Why or why not? Do you think the nervous system is more important than other body systems? Explain your thinking. What are some diseases that can affect the nervous system? How can we see God’s hand in the design of our body? Why do you think God designed such complex body systems? Do you think the complexity of the human body is evidence for a Creator? Explain your thinking.

**Learning about the Endocrine and Reproductive Systems** by Melissa L. Kim

**Things to think about:** What is the endocrine system? How does the endocrine system move hormones throughout the human body? What are some of the hormones found within the human body? Why are hormones important? What role do hormones play in helping the human body to function properly? What are some problems that can be caused by too much of a hormone? What are some problems that can be caused by too little of a hormone in the human body? Did you know that certain conditions, such as depression, can be caused by too little of certain hormones in the brain?

Could the body function without the endocrine system? How do the endocrine system and the nervous system interact? Do you think the endocrine system is more important than other systems? Explain your thinking. What is the reproductive system? What are the components of the reproductive system? How does the reproductive system function? If the reproductive system is not functioning, can a person continue to survive? What would happen if all humans lost the ability to reproduce? What is special about human reproduction? What does the Bible say about human reproduction and the miracle of human life? How does a baby develop inside its mother? Why are both a cell from a mother and cell from a father necessary to produce a baby? The Bible tells us that when God created Adam He decided to create a helper for him because it was not good for man to be alone. Do you think this is true? Do you think this is why it takes both a mother and a father to create a baby? What is special and unique about the relationship between humans and their offspring when compared to other species living on earth?

**The Case of the Rusty Nail** by Michelle Faulk PhD

**How to use this book:** This engaging book takes students on an adventure into the fascinating world of microbiology and infectious disease! A wonderful addition to your study of the human body. “Rabies . . . tetanus . . . West Nile disease . . . What do you
get when you combine evil microbes trying to harm the nervous system and a super
detective skilled at Body System Disease Investigations? You get crime-solving super
sleuth Annie Biotica! Join Annie’s team: Read the case, check out a line-up of the
disease suspects, test the body system for infection, and help Annie Biotica and her
science team crack the case! These engaging and easy-to-read books use the scientific
method to decipher symptoms, review lab results, and diagnose and treat diseases.
Some cases must be solved by you!”

Human Body Coloring Book by Stephanie Elkowitz
How to use this book: This book is an excellent resource to make use of throughout
the kit. Consider printing various pages from within the book to colour and save in a
science notebook. This is a fun, and easy, way to learn more about the different
systems covered in this unit. How can we see God’s hand in the design of our body?

Human Body: A Mind Webs Book by Anna Claybourne
How to use this book: This fun book features mind-webs showing information about
the human body. This fun, fact-filled book is an excellent resource to use as you learn
about the human body. The unique mind-webs book does a wonderful job of showing
the connections between the different body systems. How can we see God’s hand in
the design of our body?

The Everything Kids Human Body Book by Sheri Amsel
How to use this book: This is a fantastic resource which provides an exceptional
overview of the human body systems. What are the body systems? What components
are they made up of? What happens if one body system becomes injured or diseased?
Is any one body system more important than another? Explain your thinking. How can
we see God’s hand in the design of our body? How can we see God’s hand in the
design of our body? How do body systems take what they need from the envir-

Fascinating Human Bodies by Katharine Kenah
Things to think about: What is the most fascinating fact about the human body? Why
are bodies amazing? Read Psalm 139:14, what does the Psalmist mean when he says
that we are “fearfully and wonderfully made”? Do you think that is true? What evidence
do you see that makes human beings special? What are the body systems? What
components are they made up of? What happens if one body system becomes injured
or diseased? Is any particular body system more important than another? Explain your
thinking. How can we see God’s hand in the design of our body? How can we see
God’s hand in the design of our body? How do body systems take what they need from
the environment? How can we take care of our body? Why is it important to care for our body? What does the Bible say about our bodies and how we were created?

**Human Body Big Book** by Susan Lang

*How to use this book:* This unit has projects, activities, and information. Consider using some of the printables, activities, and book suggestions listed to enhance your study of the human body.

**The Human Body – 25 Projects** by Kathleen M. Reilly

*How to use this book:* This book contains excellent information about the human body and human body systems. Many of the experiments and activities contained in this book are recommended later on in the activities section of this unit.

**The Human Body** by Evan-Moor Educational Publishers

*How to use this book:* This unit has projects, activities, and information. Consider using some of the printables, activities, and book suggestions listed to enhance your study of the human body.

**My Scrapbook of the Human Body** by QA International Collectif

*Things to think about:* What is the most fascinating fact about the human body? Why are bodies amazing? Read Psalm 139:14, what does the Psalmist mean when he says that we are “fearfully and wonderfully made”? Do you think that is true? What evidence do you see that makes human beings special? What are the body systems? What components are they made up of? What happens if one body system becomes injured or diseased? Is any particular body system more important than another? Explain your thinking. How can we see God’s hand in the design of our body? How can we see God’s hand in the design of our body? How do body systems take what they need from the environment? How can we take care of our body? Why is it important to care for our body? What does the Bible say about our bodies and how we were created?

**Videos to Watch and Talk About:**

- [Digestion and Excretion](Learn 360)
- [Healthy Digestive and Excretory Systems](Learn 360)
- [Real World Science: Digestion and Excretion](Learn 360)
- [Human Body Systems: Excretory](Learn 360)
- [The Urinary System](Learn 360)
If you are concerned about the content of these videos we suggest that you preview them ahead of time. We encourage you to watch videos about the reproductive system alongside your child in order to better facilitate discussion.

Reproductive System (Learn 360)

Reproduction and Development (Learn 360)

Human Development and the Reproductive System (Learn 360)

Activities (Select 12-16):

Inquiry Time: What does the word inquiry mean? Take a minute to look it up, what did you learn? Inquiry involves the process of seeking out information. An inquiry project begins with a simple idea about a topic of interest. Your idea then becomes a question that you want to answer. Inquiry projects require strong questions. A strong question does not have a yes or no answer. A strong question cannot be answered with one or
two words, or even a single sentence. A strong inquiry question doesn’t have a right or a wrong answer. A strong question starts with “how,” or “why.” You will need to conduct research in order to investigate your question.

The Inquiry Project

<table>
<thead>
<tr>
<th>Step One</th>
<th>Step Two</th>
<th>Step Three</th>
<th>Step Four</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ask a Question</td>
<td>Find Information and Resources</td>
<td>Decide Which Information Helps to Answer Your Question</td>
<td>Share What you have Learned</td>
</tr>
<tr>
<td>-What do I want to learn?</td>
<td>-What resources might help?</td>
<td>-Does the information help to answer my question?</td>
<td>-What do I want to tell my audience?</td>
</tr>
<tr>
<td>-What do I already know?</td>
<td>-Where can I find information about my question?</td>
<td>-What do I still need to know?</td>
<td>-What are my important points?</td>
</tr>
<tr>
<td>-What do I need to know to answer my question?</td>
<td>-How can I make sure that the information I find is accurate?</td>
<td>-What information best answer my question?</td>
<td>-How will I make my presentation interesting?</td>
</tr>
</tbody>
</table>

A Good Question:
- has more than one answer
- has a very deep meaning
- gives you lots of information
- doesn't have a yes or no answer
- is hard to answer and takes a lot of thinking to understand the question
- contains exciting words that make you want to look for an answer
- is about something you can research
- takes a long time to figure out
- makes you think, know, and wonder

In this unit we are learning about the human body. God designed amazing bodies for human beings. We can perform complex tasks, invent, create, and discover. Our body systems interact with one another, and with the environment, to help us survive and reproduce. As you work through this unit you will be learning more about the excretory system, the reproductive system, the nervous system, and the hormonal system. Which system interests you the most? What questions do you have about this system? What would you like to discover? Select a human body topic to complete an inquiry project on. Find a topic that peaks your interest, use your imagination, and have fun! Use Popplet to create a mind map. Write your BIG question in the centre of your mind map,
and write your smaller questions around the outside. Now, use Explora and World Book Kids to conduct some research about your questions. You can use this form to organize your research. Once you have gathered the research you need to answer your question, decide how you would like to present the information you have worked so hard to gather. This might be a video using Windows Movie Maker or iMovie, a Wix or a Weebly, a Prezi, Edubuncee, or PowerPoint, or another method of your choosing. Have fun conducting your investigation! When you are finished, self-reflection your project using this helpful document from BIE.

**Design an Experiment:** You have probably conducted many experiments throughout this unit. Experiments are a wonderful way to learn more about God’s creation. Scientists use a specific process when conducting an experiment known as The Scientific Method. The Scientific Method must be used to achieve high-quality, accurate results. It is important not to start with a conclusion before conducting your experiment. Scientists begin with a question they would like to answer, they conduct research, and then they develop a hypothesis. This can be a long process! Watch Using the Scientific Method from Learn 360. Now, what is a question you have about matter? It is important that it is not a “yes” or “no” question, if you can answer your question with “yes” or “no,” that question won’t work for your experiment. Use Popplet to create a mind map. Write your BIG question in the centre of your mind map, and write your small questions around the outside. Now, use Explora, Science Power, and World Book Kids to conduct some research about your questions. You can use this form to organize your research. Use the information you gather to create your hypothesis (prediction about what will happen) and design your experiment. What will you do to find an answer to your question? How many times will you repeat the experiment? Where will you conduct the experiment? What materials will you need? How will you document your experiment (paper, camera, video etc.)? For the most accurate results, conduct your experiment at least twice. Have fun! Parents and teachers can use this handy rubric for assessing the project.

**Brain Power:** Read pages 54-56 in The Human Body by Kathleen M. Reilly to learn more about your brain. Then, try creating your own Reaction Tester following the instructions on page 57. For this experiment you will need masking tape, ruler, and marker. What did you learn about your brain? What are some other ways you could
experiment with the way your brain functions? What makes our brain unique when compared to the brains of other animals? How did God set human beings apart from the rest of creation? Use this excellent documentation sheet to record information about your experiment. You can also begin creating a science journal using this page.

Seeing is Believing Experiment: Follow the instructions on page 57 of The Human Body by Kathleen M. Reilly to discover more about the human brain. For this experiment you will need corn, rice, a piece of chicken, and food coloring. What did you learn about the human brain? Can the human brain be tricked? What are some examples of this? Use this excellent documentation sheet to record information about your experiment. You can also begin creating a science journal using this page.

A Day in the Life of a Brain: Each of us is equipped with an amazing brain. During the average day, the human brain performs a lot of different tasks. For one day, document the different ways in which you use your brain. Start when you wake up in the morning, and finish when you go to sleep for the night. What jobs did your brain complete throughout the day? Be certain to include the jobs that you don't have to think about. Was it possible to create a list of every single thing your brain did? Why or why not? To record your brain journal you may wish to keep a written or typed list, or you may wish to draw cartoon images that remind you of each task. You could also take photographs to document your amazing brain at work. How many tasks were you able to list during the day? Why do you think it is important to keep our brains healthy?

Neuroscience--What's Missing?: Try this fun experiment to test short term memory. You will need a tray or plate, 10-20 small items (like an eraser, pencil, coin, marble, etc.), and cloth or towel to cover the tray. You will also need one or two “subjects” (friends, siblings, or parents) to experiment on. Get your tray and items and cloth ready again. Then, have your subjects view the items on the tray for 1 minute. Cover the tray again. Without the subjects seeing, remove 1 item from the tray. Show the tray and remaining items to your subjects again. Ask them, "What is missing?". Can they guess what you removed?
- Try it again giving the subjects more time to view all the items.
- Try it with less time.
- Try it with more objects on the tray.
- Try it with fewer objects, but have your subject identify the missing object feeling the remaining objects without seeing them.
- Try it again, but this time remove 3-4 objects.

Use this excellent documentation sheet to record information about your experiment. You can also begin creating a science journal using this page.

**Neuron Model:** Neurons are special cells within the body that transmit nerve impulses. Neurons perform many different jobs within the human body. Neurons are a critical component of the human nervous system. For this fun activity, create a model of a neuron. The University of Washington has several excellent ideas for creating a model of a neuron, choose the one you would like to create the most.

**Exploring the Spinal Cord:** God created an amazing series of systems for our bodies. The spinal cord is a critical part of our nervous system. If the spinal cord becomes damaged, it can have a profound impact on the way we move. Serious spinal cord injuries can cause paralysis. The spinal cord acts much like a telephone line, it takes signals from elsewhere in our body and transmits them to the brain, and it also takes signals from the brain and transmits them to other parts of our body. Read about the spinal cord from World Book Student. Then, try building your own spinal cord using cereal and licorice.

For this project you will need an 8-9 inch piece of licorice with a knot at one end. You will also need Fruit Loops and Cheerios. The Fruit Loops represent the vertebrae, and the Cheerios represent the disks. The licorice represents the spinal cord. Begin by threading a vertebrae, followed by disk, followed by a vertebrae, followed by a disk, repeat until you are approximately 2 inches from the top. Then, tie a knot in that end. See how the spine bends and moves. What happens if the spine bends too far? What would happen if one of the vertebrae or disks were crushed? What would happen if some of the vertebrae and disks were “stuck” together? How can you protect your spinal cord from injury?
Human Kidneys: What are the kidneys? Where are they located in your body? What role do they play in the excretory system? Can the body function with only one kidney? What form does the waste processed by the kidneys take? Kidney health is critical to the proper functioning of the human body. When the kidneys shut down it is a sign that something is very wrong with the body. Use World Book Kids to read about human kidneys and how they function. Then, use plasticine, bottles, cardboard, paper, and other materials to create a model of the kidneys/urinary system. You can use the example photos below, or create your own unique model.

Kidney Filtration: Your kidneys work together as a filtration system. Without the renal and urinary systems toxins and waste would build up in our body resulting in death. The proper function of the excretory system is critical to survival. For this project you will need cheesecloth, food coloring, a pound of fine-grained sand, a gallon of water, and a tall, thin glass jar. Begin by mixing the sand, water, and food colouring together. Set this mixture aside. Fill the tall jar with water until it is about half full. Place the cheesecloth over the top of the jar. Add the colourful sand and water mixture to the jar.

What happens? What is allowed through into the jar? Lift your filter paper and pour out the water. Add new water to the sand and water mixture and repeat the procedure. Watch as the color of the sand and water mixture fade with each change. This demonstrates how the kidneys cleanse urea and toxins from the blood while the important blood cells remain behind. Use this excellent documentation sheet to record information about your experiment. You can also begin creating a science journal using this page.
Human Body System Expert: In this unit you are learning about several different human body systems. Specifically, the excretory system, the reproductive system, the nervous system, and the endocrine system. Begin by watching Human Body Systems Working Together from Learn 360. Then select one of the four body systems listed above to focus on. You can begin your research by watching one or two of the suggested videos, reading or rereading about the system in books, and conducting extra research using Explora and World Book Student. You can organize the information for your presentation using this form.

Now, consider how you could share the information you learned with other people your own age. How can you make the information exciting and interesting? What do you think other people in your age-group should know about this body system? Present the information you worked hard to gather in an interesting and exciting way. Your final product could be a Prezi, Google Slideshow, EduBuncee, or PowerPoint. It could take the form of a Wix or Weebly interactive website with clickable links. You could create a video presentation and showcase different models, or have friends and siblings act out the different body systems. Perhaps you want to do a combination of several different types of presentation. Take your time working on your project. Once your project is finished, share it with others.

Human Reproduction: Read verses 13-18 in Psalm 139. What is the Psalmist writing about? How does a human baby develop in the womb? How does God watch over this process? What is special and unique about this process? Do you think the growth of a human baby is a miracle? What is miraculous about it? What are some of the ways in which human beings are “fearfully and wonderfully made”? Read pages 69-73 in The Human Body by Kathleen M. Reilly to discover more about human reproduction and the amazing way that babies grow inside their mothers. Why do you think it is important to know about how the human reproductive system works? What does the Bible say about human reproduction? What questions do you still have about the reproductive system? Use clay, foam, cardboard, paper, and other materials to create a model of either the female or the male reproductive system.
The Amazing Endocrine System: Our bodies have many amazing systems that allow us to function, survive and thrive in our environment. Our bodies are perfectly designed for the unique conditions on the planet earth. The human body cannot survive in space or on other planets without significant supports and technologies in place. On earth, our bodies function well.

What is the endocrine system? "The endocrine system refers to the collection of glands of an organism that secrete hormones directly into the circulatory system to be carried towards distant target organs." Without the hormones secreted by the endocrine system, our bodies cannot function properly. There are many different hormones in the human body.

Complete a table similar to the one below to learn more about some of these amazing hormones and the role they play in helping us survive and thrive. Interact with the Endocrine System by completing the unit in Science Power from World Book. Then, use World Book Student to research the following hormones. These represent a small portion of the hormones found in the human body. Isn’t the complexity of the human body amazing? A printable version of this chart is available here.

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<thead>
<tr>
<th>Hormone</th>
<th>Purpose</th>
<th>Where it is Produced</th>
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</thead>
<tbody>
<tr>
<td>Adrenaline (Epinephrine)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dopamine</td>
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<td></td>
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<td>Estrogen</td>
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<tr>
<td>Human Growth Hormone</td>
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<tr>
<td>Insulin</td>
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For more fun with the endocrine system, play a game of telephone as a family. A parent should whisper the phrase “strong communication skills are very important” in the first person’s ear, continue around the circle, the last person says what they have heard aloud. Then, discuss how communication doesn’t just involve the way we speak to one another, our bodies have their own communication systems. One of these is the
endocrine system. The endocrine system produces hormones which relay messages throughout the body. If the endocrine system becomes damaged, the body doesn’t receive all of the signals and messages it needs to function properly.

Interconnectedness of Body Systems: Watch Body Systems from Discovery Education. How are the body systems interconnected? How do they depend on one another? What would happen if one system fails? Is any one system more important than another? How is your excretory system connected to your digestive system? What would happen if the digestive system shutdown? Would the excretory system still function? Can a person survive without a functioning reproductive system? How is the reproductive system linked to other body systems such as the circulatory system and the hormonal system? What role does the nervous system play in the human body? Can the other body systems function without the nervous system? Can the shutdown of one of these systems cause another system to fail? Why do you think God designed the human body to have many different systems? Do all animals on earth have the same systems? For this project you will need a large sheet of white paper--large enough for your entire body to fit on. Spread your paper out on a hard floor and lay on top of it. Have someone trace around your entire body. Now, use Advanced Google Images to find pictures of the excretory, reproductive, nervous, and hormonal system. Draw the systems into your shape. Try to make them as detailed as possible. When you are finished, label each system and its parts. To learn more about the human body and human body systems download and enjoy exploring with the Build a Body app available for free from iTunes.

Human Body-System Model: You have been spending time learning about several different human body systems and the way they interact. For this project, you will be selecting one or two of the human body systems and building a model. You will need to conduct research, find diagrams and pictures, and try to make your model as accurate as possible. It is even better if your model performs similarly to the actual system! Use Explora, World Book Kids, and Advanced Google to find information about the human body system(s) you have chosen to construct. How does the system function? What purpose does it serve? How does it interact with other systems in the body? What does the system need to function? What happens if this system becomes damaged? How can you see God’s design in this body system? How you build your model is up to you,
you can use a variety of household materials--create your model so that it can be displayed on a pedestal, such as a box or similar container. Take your time assembling your model--it will probably take several day. For this project, your system should look as much like the actual system as possible. Once you have completed your model, write a report or presentation sharing about your human body system and how it functions.

The Reproductive System News: Begin by watching one or more of the videos on the reproductive system from Learn 360 (listed in the Videos to Watch section). The reproductive system is very important. It is also quite complex. God designed men and women to have different, but complementary, reproductive systems. There are many books and resources that try to make learning about the reproductive system less-intimidating for young people. Most of those resources are written by adults. For this project you will be creating a newspaper outlining and detailing different aspects of the reproductive system in a way that you feel will appeal to other young people your age. Your newspaper might include articles that answer questions:

(How does the reproductive system work? How does a baby grow inside its mother? What is genetics? What cells are needed to create a baby? How are the reproductive system and the endocrine system connected?), an advertisement, an advice column or an opinion column talking about what the Bible says about human reproduction, a drawing or cartoon of the reproductive system--use your imagination and have fun. You can use the Readwritethink Printing Press to organize your newspaper after you have gathered your information. You can organize the information for your presentation using this form. Use Explora and World Book Student to collect extra data for your information. You can also use the videos and books you have read previously in this unit.

Extraordinary Brains: Have you ever spent time thinking about your brain? Do you know what a brain looks like? If you were to see a picture of the human brain you might not think that it looks particularly amazing, but it is! Without the brain our bodies cease to function. God created amazing, powerful brains for human beings! Take a fascinating 3-D tour of the brain! What role does the brain play in the human body? What role does the brain play in the function of the nervous system? The function of the endocrine system? Can the brain function without the endocrine system? Without the nervous
system? Have fun learning more about your amazing brain from the interactive website Wondermind. Finish by creating your own special brain cap using a white swim cap, sharpies, and the instructions found here. Or, if you can’t find a swim cap, try making a paper version of the brain cap.

**Ectomy (A Game About the Brain):** Visit Ellen McHenry’s Basement Workshop to download and print the fabulous game, Ectomy. Ectomy is a game about your brain that will help you learn and review information about the different lobes in your brain and what they do. Our brain is a fascinating place! Before you begin, consider reading about the human brain from World Book Kids or World Book Student. You can also learn all about the brain from the University of Manchester.

**Doctors Without Borders:** Imagine that one day you woke up with an extremely sore throat and a high fever. You feel awful. Your mom gives you a Tylenol and lets you stay in your pajamas and rest on the couch. However, after a day or two you are feeling much worse. Your mom takes you to the clinic where your doctor diagnoses you with strep throat, a serious, but treatable infection. You are prescribed an antibiotic for 10 days, you take your antibiotic, and in a short time you are feeling much better.

Now imagine that you live in a part of the world where you don’t have access to a clinic or doctor, to antibiotics, or even the most basic healthcare. A place in the world where a treatable infection such a strep throat can become fatal.

Read How do they Help? Doctors Without Borders by Katie Marsico. Had you ever heard about Doctors Without Borders before reading the book? What about other organizations such as World Vision, Foster Parent’s Plan, Samaritan’s Purse, the Red Cross, and others like these that provide medical aid in countries or parts of countries where good medical care is difficult to find? Why are these organizations important? How do they make a difference in the world? Can you find passages in the Bible which speak about caring for others? Do you think these organizations are fulfilling God’s commandment to treat others the way we want to be treated? What do you think receiving medical care means to the people in these communities around the world? Do you think that providing medical care to those in need is a good way to witness for Christ? Consider praying regularly for doctors who travel to developing countries to provide medical care, as well as for medical missionaries in our world.
Fearfully and Wonderfully Made: Read the story of Creation in Genesis 1 and 2. What does it say about the creation of the world? About the creation of humans? What sets human beings apart and makes us special? In whose image are we created? Why is this significant? Now, read Psalm 139. What does the psalmist say about human beings? About our growth? About God’s knowledge of us? As you have been studying the human body you have likely seen many ways in which human beings are special and unique. Create a Padlet collage showing images that you feel best represent the line in the Psalm 139 which speaks of us being “fearfully and wonderfully made.” How many images can you come up with? With whom can you share your Padlet? Is there anyone in your life who needs to hear the Good News about Jesus? Can you include some Bible verses in your Padlet?

Lapbook Fun: Build the Human Body Lapbook from Homeschool Share.

Study Jam: Take a look at The Human Body Study Jam from Scholastic. How are the human body systems interconnected? How do human beings depend on their body systems for survival? What happens if one or more body systems shut down? Try taking the human body quiz at the end to test your knowledge.

Study Jam: Take a look at the Nervous System Study Jam from Scholastic. What important role does the nervous system play in the human body? What are the different components of the nervous system? Could the human body function without the nervous system? What would happen to your body if the nervous system shut down? How can the nervous system become damaged? Try taking the nervous system quiz at the end to test your knowledge.
**Optical Illusion Fun:** We rely on our brain interpreting the light received by our eyes. However, certain images can be difficult for our brain to decipher, these are known as optical illusions. Visit [Optics 4 Kids](https://www.o4k.com/) to have fun with several different optical illusions. Share your favourite optical illusions with siblings or friends.

**Technology Time:** Learn about [Body Systems and Medicine](https://www.bitesizelearning.com/subject/body-systems).

**Technology Time:** Investigate memory with Bitesize. Then, play some fun memory games.

**Technology Time:** Have fun with a nervous system activity to learn more about the nervous system and how it works. Then, try playing the nerve signaling game and take a tour of your neural network.

**Technology Time:** Try the Math Hunt Human Body game!

**Technology Time:** Watch The Human Body from BrainPop.
Bibliography


