

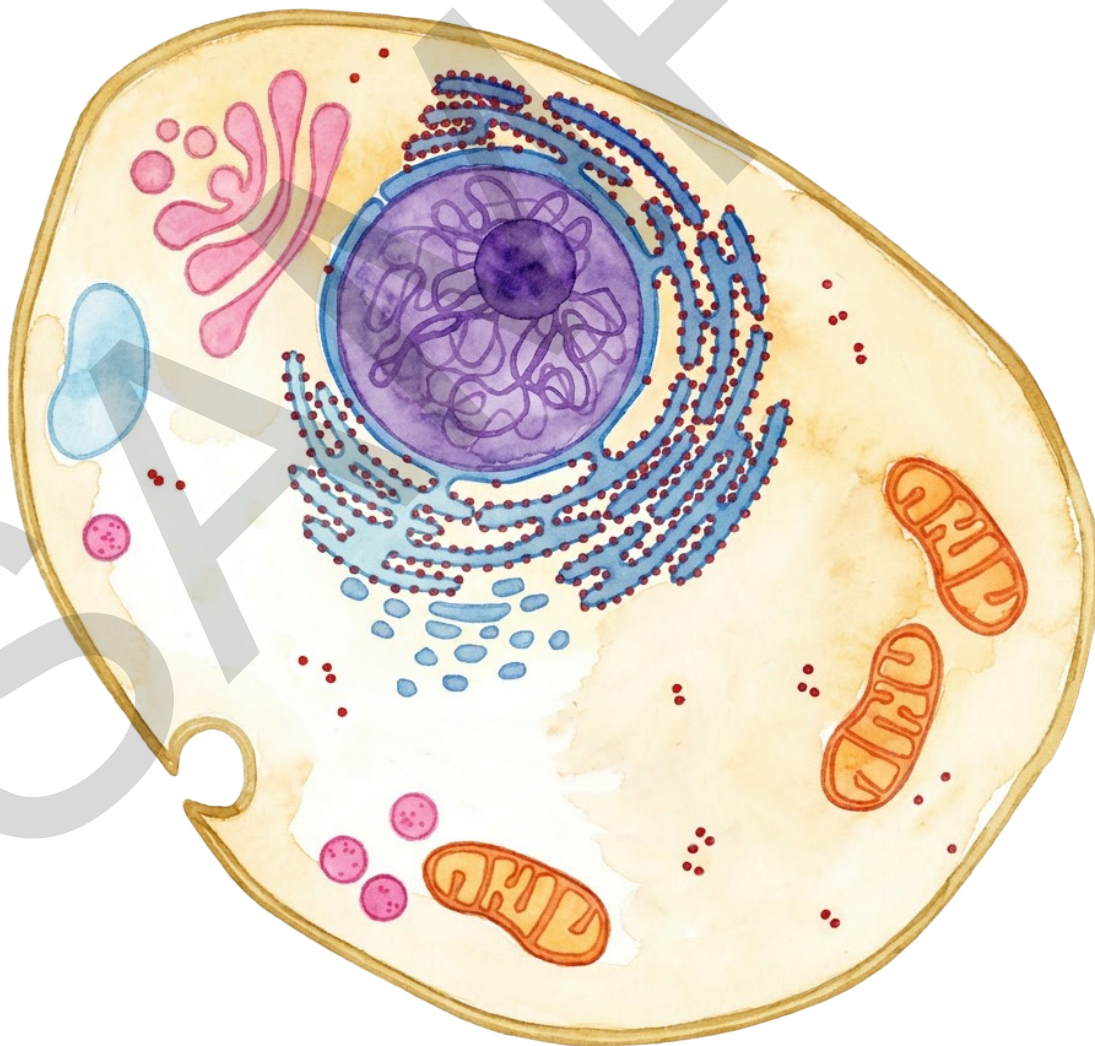


FUTURE DOCTORS

Human Biology

FAMILY UNIT STUDY

by Sarah Nofle, BA, BEd, Teacher, Reading Specialist, Special Education Specialist,
and Heather Bartok, BHSc, BEd, Teacher



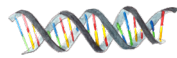
Copyright © 2026 by Sarah Nofle, How Wee Learn

All rights reserved.

No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying or other electronic or mechanical methods, without the prior written permission from the author. For permission requests, write to the author at: customercare@howweelearn.com.

Design and Layout by Mallory Foster: www.malloryfoster.com

Visit the author's website at: shop.howweelearn.com



HUMAN BIOLOGY

Table of Contents

Introduction

What to Expect	6
Suggested Schedule	7
Library Book List.....	8
YouTube Video List	9
Scope & Sequence.....	10

Topics

Inside Your Cells.....	14
DNA: The Body's Blueprint.....	16
Genetics and Punnett Squares.....	18
All About Blood.....	20
Your Immune System and Germs	22
The Science of Boogers	24
The Layers of Your Teeth.....	26
Cardiology and Heartbeats	28
Radiology and X-Rays	30
The Discovery of Penicillin	32

Printables

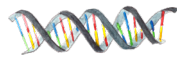
Animal Cell Diagram.....	36
Punnett Square Diagrams	37
Heartbeat Tracking.....	38
Scavenger Hunt Checklist	39
X-Ray Images	40
Newspaper Article Template.....	41
Newspaper Article Cut & Paste	42
Vocabulary Cards (Print Version).....	43
Vocabulary Cards (Cursive Writing Version).....	45
Unit Study Journal Cover Page.....	47

SAMPLE

HUMAN BIOLOGY

Welcome!

SAMPLE



HUMAN BIOLOGY

What to Expect

Thank you for choosing one of How Wee Learn's Family Unit Studies! If you are new to Family Unit Studies, I invite you to take a moment to review the "What to Expect" below, as well as the suggested schedule on the following page.

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 they are learning, that learning sticks. And when a child is engaged and fascinated by what they are learning, learning is amazingly fun for the whole family! Say goodbye to those power struggles.

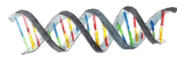
Our unit studies are divided into ten topics with manageable, bite-sized amounts of information. Each topic includes:

- **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 an excellent way to spark a child's interest and imagination!
- **Discussion Question:** Asking the right questions and having meaningful discussions is a wonderful way to meet your child at their level of understanding and help them grow. So much can be learned through one meaningful discussion!
- **Curated YouTube Video:** Dive into fun and easy learning with experts in the field, entertaining stories, and inspiring tales, all selected to highlight key learning concepts. Enjoy a snuggle on the couch, learning with popcorn and a movie!
- **Book Suggestion:** The book suggestions for each topic are just that—suggestions. Any books related to the topic are strongly encouraged. Immersing your child in a literacy-rich environment and offering plenty of time to explore is key for child-led learning.
- **Math Enrichment:** Each unit study includes five math enrichment questions with three levels so they are fitting for ages 4 to 12. These questions cover the five strands of math: Number Sense, Algebra, Data, Spatial Sense, and Financial Literacy. This is not a full math curriculum, of course, but an enrichment opportunity and a chance to be exposed to real-world math. As you go through a question, consider how you might ask a follow-up question. Perhaps, "What would happen if there were 6 birds instead of 5?"
- **Literacy Enrichment:** There are so many opportunities to integrate literacy development throughout each unit study! Reading, researching, recording information, labeling, and note-taking all happen naturally. On top of this, each unit study includes five literacy enrichment activities with three levels so they are fitting for ages 4 to 12.
- **Hands-on Activity:** The hands-on activity brings the information shared and discussed to life! These activities allow children to engage in and solidify their learning.
- **What's Happening:** This ensures any information you need for the hands-on activity is right at your fingertips. This may include background information on the topic, the science behind an experiment you perform, etc.
- **Extension Activity:** Some activities might feel too young for your learner. If that's the case, this section is for you! The extension activity shares how to make the hands-on activity more challenging or enriching, ensuring every child is met with appropriate developmental activities.

I hope you and your family love this unit study!

If you have any questions at all, please email me at customercare@howweelearn.com.

xo Sarah



HUMAN BIOLOGY

Suggested Schedule

These unit studies are completely flexible—there is no right or wrong way to dive in. When learning is this exciting, you simply cannot go wrong! Below are two possible ways you might choose to use these unit studies.

10-Day Focused Unit Study

Your family might choose to focus on one unit study topic a day, completing the entire unit study over a 10-day period:

Day 1	Morning 30-60 mins	Complete core skill work with one page of How Wee Learn Literacy and one page of How Wee Learn Math for your child's specific grade. Next, introduce Topic 1 of this unit study with the interesting fact, discussion question, and YouTube video.
	Afternoon 30-60 mins	Complete Topic 1 by diving into the math or literacy enrichment question, the hands-on activity, and the optional extension activity!
Day 2	Morning 30-60 mins	Complete core skill work with one page of How Wee Learn Literacy and one page of How Wee Learn Math for your child's specific grade. Next, introduce Topic 2 of this unit study with the interesting fact, discussion question, and YouTube video.
	Afternoon 30-60 mins	Complete Topic 2 by diving into the math or literacy enrichment question, the hands-on activity, and the optional extension activity!

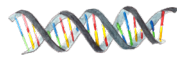
Etc., repeating until all 10 topics are covered.

One-Month Blended Unit Study

Alternatively, your family might choose to blend this unit study with your core skills and family adventures, completing it at a more leisurely pace. For example, 2-3 afternoons per week:

Day 1	Morning 30-60 mins	Complete core skill work with one page of How Wee Learn Literacy and one page of How Wee Learn Math for your child's specific grade.
	Afternoon 60 mins	Complete Topic 1 of this unit study by chatting about the interesting fact and discussion question, watching the YouTube video, doing the math or literacy enrichment question, and diving into the hands-on activity!
Day 2	Morning 30-60 mins	Complete core skill work with one page of How Wee Learn Literacy and one page of How Wee Learn Math for your child's specific grade.
	Afternoon 60 mins	Head outside for a nature walk, go to the park, or play board games!
Day 3	Morning 30-60 mins	Complete core skill work with one page of How Wee Learn Literacy and one page of How Wee Learn Math for your child's specific grade.
	Afternoon 60 mins	Complete Topic 2 of this unit study by chatting about the interesting fact and discussion question, watching the YouTube video, doing the math or literacy enrichment question, and diving into the hands-on activity!

Etc., repeating until all 10 topics are covered.



HUMAN BIOLOGY

Scope & Sequence

Family Unit Studies allow your child to explore one big topic through multiple subjects: reading, writing, math, science, history, geography, social studies, health, music, art, and life skills. This has been shown to make learning more meaningful and memorable—it makes learning stick! We use “cross-curricular connections” to help children see how ideas are linked in the real world, keeping them engaged and deepening their understanding.

As a parent, it’s important to feel confident in the rich learning you’re guiding your child through. That’s why we’ve included this Scope and Sequence—not as an exhaustive list, but as a helpful starting point to show how key learning standards are met (and often exceeded!) through deep, connected experiences.

We hope this Scope and Sequence encourages you to look creatively at each Family Unit Study and see how the hands-on learning and fun are a part of an intentional, impactful, learning-filled journey.

Math	Topics
Algebra	Extend and analyze number patterns/sequences. 2
Data	Use real-world percentage data (blood type) to determine what is most likely/least likely. 4
Number sense	Solve multi-step problems (rate × time; repeated days; bundling into groups). 6
Spatial sense	Calculate elapsed time and end times (hours/minutes). 8
Financial literacy	Combine money amounts, compare to costs, add tax. 10

Literacy	Topics
Listening & speaking	Daily “Spark Curiosity” discussion and video debriefs. All
Reading comprehension	Through book suggestions and read-alouds in each topic. All
Vocabulary	Identify/label/define key terms (organelles, cell parts). 1
Creative writing	Finish a structured prompt connected to genetics; draw and describe. 3
Word jumble	“Word jumble” practice using medical/science vocabulary. 5
Poetry	Read/recite a poem with multi-level expectations (oral → paragraph). 7
Text-to-self connections	Personal narrative prompt about an X-ray experience. 9
Informational writing	Write an article following given structure (or cut/paste). 10

Science	Topics
Cell biology	Learn key cell parts; connect diagram and explanations. 1
Genetics	Understand dominant/recessive traits; use Punnett squares to predict outcomes. 3
Blood & circulatory basics	Explore what blood does and connect to injury/clotting. 4
Microbiology & lab safety	Grow bacteria and observe results. 5
Fluids & viscosity	Explore viscosity through paint pouring. 6

Continued on the next page.

Continued from the previous page.

Dental science	Model staining/cleaning and connect to enamel care.	7
Cardiovascular measurement	Measure heart rate, calculate BPM from 15 seconds × 4, compare changes.	8
Medical imaging (X-rays)	Learn how X-rays are made, why bone/soft tissue appear differently in images.	9
Antibiotics & resistance	Learn how penicillin was discovered, how it kills bacteria, and why overuse leads to resistance.	10

History Topics

Scientific discovery & timeline	Study key discovery moments (X-rays and Nobel context).	9
Historical case study	Explore Fleming's discovery and its impact on medicine.	10
Technology over time	Understand how medical tools (X-ray machines) work and why they changed diagnosis.	9

Geography Topics

Place-based context	Locate discoveries and people in real places (Germany; Scotland; London, England).	9, 10
Spatial "mapping" of the body	Match X-ray images to where bones belong on the body.	9

Social Studies Topics

Community & medical roles	Discuss what healthcare professionals do and how tools support care.	9
Research-to-communication	Explain a real scientific breakthrough to an audience via newspaper article format.	10

Health Topics

Hygiene & prevention	Connect brushing to tooth health; discuss disease prevention.	5, 7
Body awareness & self-monitoring	Identify pulse points; measure resting and post-activity heart rate and recovery.	8
Safe practice & lab habits	Follow clear safety directions for "lab" investigations (sealed plates, no opening).	5

Music Topics

Tempo & BPM	Link musical tempo to heart rate; march to slow/medium/fast songs and compare BPM.	8
Data in music context	Record heart-rate data; optionally graph results.	8

Art Topics

3D model making	Create an edible cell model; design a matching legend.	1
Drawing & labeling	Illustrate inherited traits in a creature design; label and describe features.	3
Process art & science concepts	Paint pouring to explore thickness/flow (viscosity) and create abstract artwork.	6

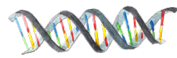
Life Skills Topics

Organizing information	Use a clear structure to report information (headline → intro → details → closing).	10
Following multi-step directions	Complete hands-on builds and investigations (cupcake model; heart-rate activity; article structure).	1, 8, 10

SAMPLE

FAMILY UNIT STUDY

Human Biology




TOPIC ONE

Inside Your Cells

Cells are the building blocks of life. Every part of the body is made up of specialized cells that work together to keep us alive and healthy. Each cell contains organelles, specialized structures inside a cell that perform a specific job, such as producing energy, building proteins, and removing waste. How do the organelles work together to help the cell function? Let's explore...

Spark Curiosity

 **Did You Know?** The word “cell” comes from the Latin word “cella” meaning small room or compartment.

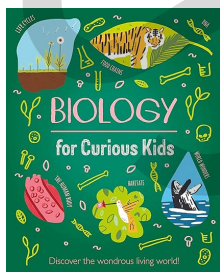
 **I Wonder...** How are animal cells different from plant cells?

Resource Suggestions



Parts of a Cell | Learn about the parts of plant and animals cells by *Laura Baker*

Today, in this video for kids, we are going to talk about the parts of a cell and the difference between plant cells and animal cells.



Biology for Curious Kids: Discover the Wondrous Living World! by *Gail Herman and Who HQ*

This inspirational book is packed with clear and engaging explanations of the natural world and the science behind it, accompanied by beautiful full-color illustrations.

Enrichment Question

Subject Focus: *Literacy (Vocabulary)*

Animal Cell Diagram

Look at the diagram and the What's Happening section on the following page to learn more about the different organelles.

L1 Point to each part of the cell (organelle) and name it. Learn the job of the cell membrane, cytoplasm, and nucleus.

L2 Label each organelle. Define the cell membrane, nucleus, and cytoplasm.

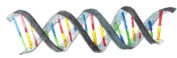
L3 Label and define each organelle.

Hands-On Activity

Subject Focus: *Art, Science*

Edible Cupcake Cell Model

See the next page for your hands-on activity instructions!



HANDS-ON ACTIVITY: ART, SCIENCE

Edible Cupcake Cell Model

Materials

Unfrosted cupcakes, vanilla icing, chocolate icing, piping bag, small spatula or knife, candies (gumball or jawbreaker, gummy candy, licorice, jelly beans, marshmallows, small round candies, sprinkles)

Directions

1. Spread vanilla icing over the top of the cupcake to represent the cytoplasm.
2. Pipe chocolate icing around the edge of the cupcake to represent the cell membrane.
3. Add candies to represent the organelles within the cell:
 - 1 large round candy in the center (nucleus)
 - 2 gummies pushed together near the center (Golgi apparatus)
 - 2 pieces of licorice (endoplasmic reticulum)
 - 2–3 jellybeans (mitochondria)
 - 2–3 small marshmallows (lysosomes)
 - 2–3 small candies of the same color (vacuoles)
 - Sprinkle a few loose sprinkles (ribosomes)

What's Happening?

Cells are the basic units of life. All living things are made of cells, and humans are made of trillions of them!

Cells have three main components:

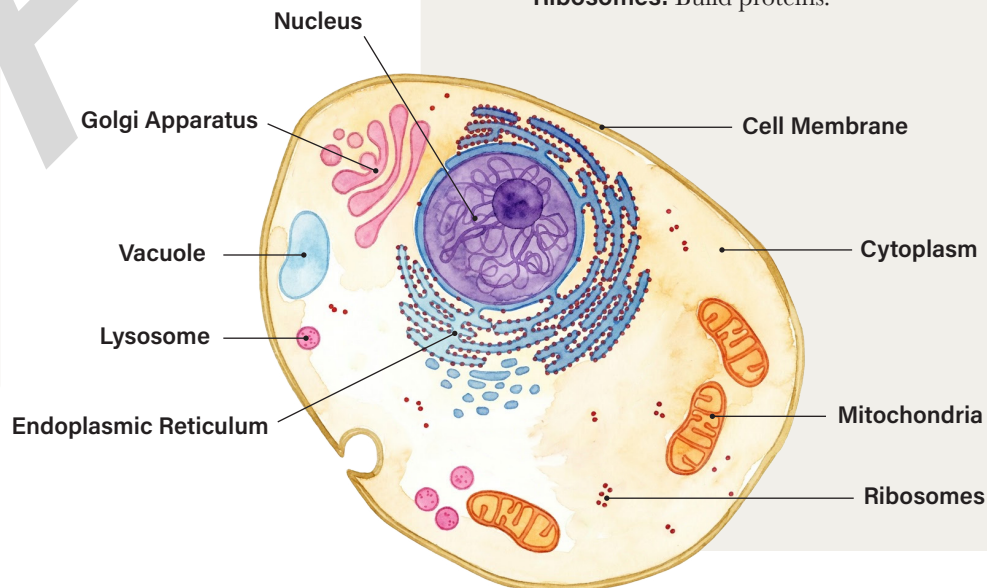
- **Cell Membrane:** Thin, flexible outer layer.
- **Cytoplasm:** Jelly-like fluid inside of the cell.
- **Organelles:** Tiny structures with special jobs.

The main organelles in a human cell include:

- **Nucleus:** Controls cell activity. Stores DNA.
- **Golgi Apparatus:** Packages and sends materials around or out of the cell.
- **Endoplasmic Reticulum (ER):** Passageway that helps make and move materials in the cell.
- **Lysosomes:** Break down and remove waste.
- **Mitochondria:** Produce energy.
- **Vacuoles:** Store water, nutrients, and waste.
- **Ribosomes:** Build proteins.

Extension Activity

Make a legend for your cell cupcake. Write down each part of the cell and draw the candy you used to represent it.

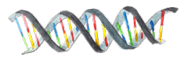


SAMPLE

HUMAN BIOLOGY

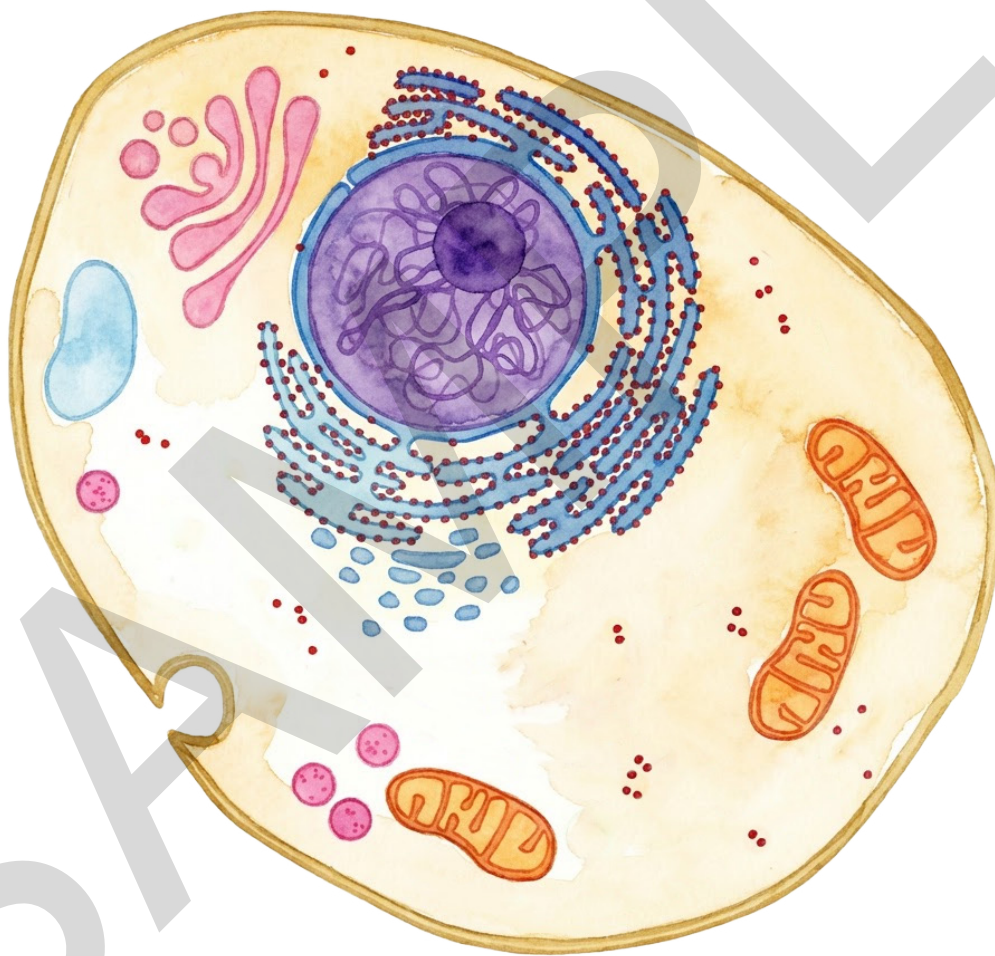
Printables

SAMPLE



HUMAN BIOLOGY

Animal Cell Diagram





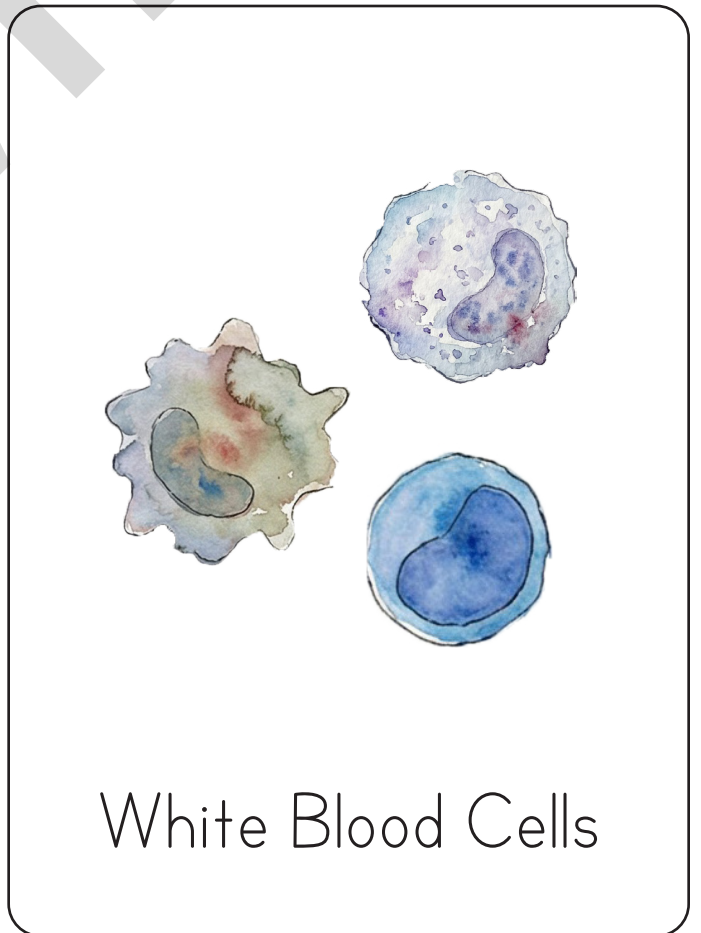
Plasma



Red Blood Cells



Platelets



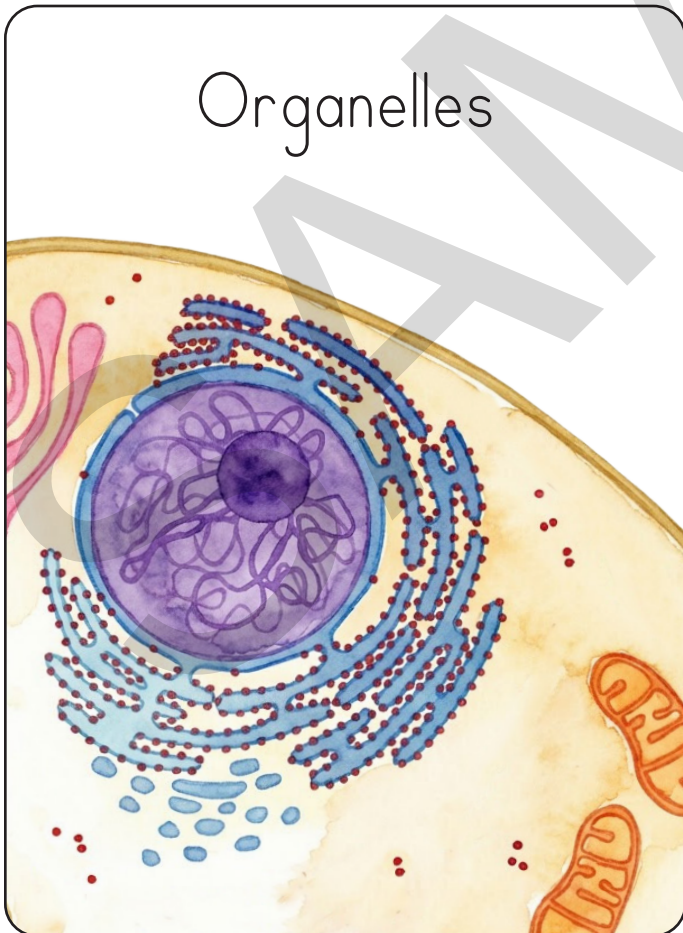
White Blood Cells



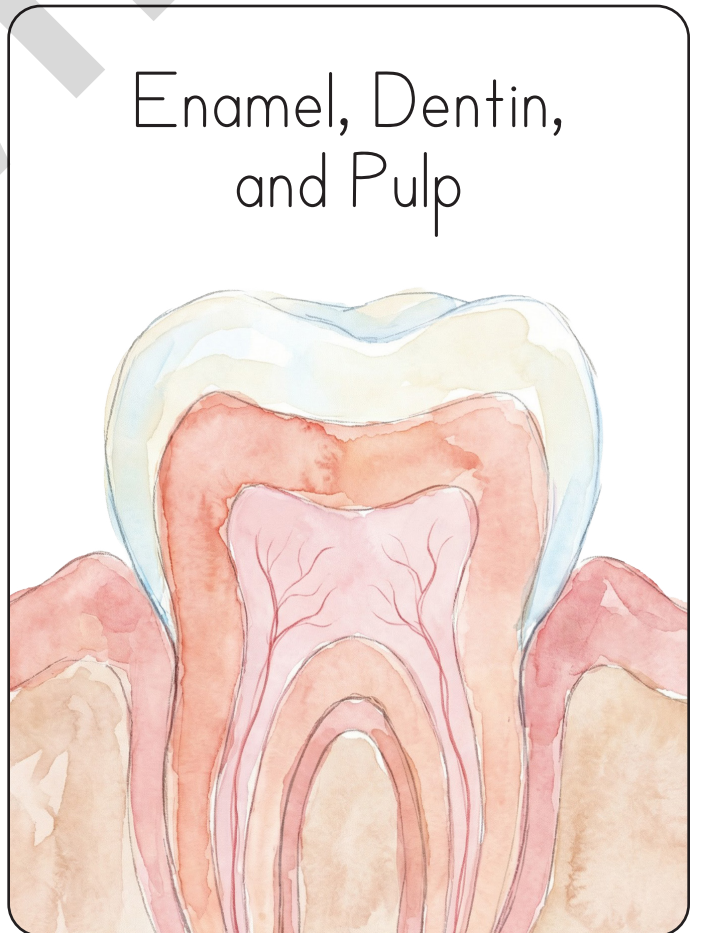
X-Ray



DNA



Organelles



Enamel, Dentin,
and Pulp