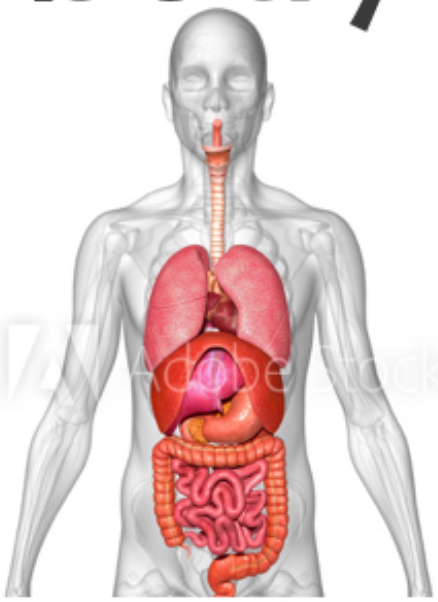
SCIENCE

The Human Body



Animal Habitats

Madly LEARNING

Complete 4/5 Combined

Inquiry Based Unit

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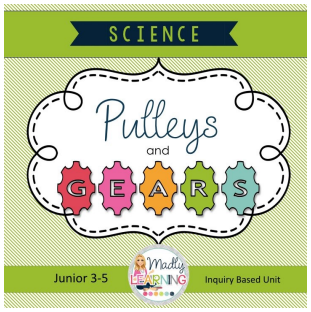
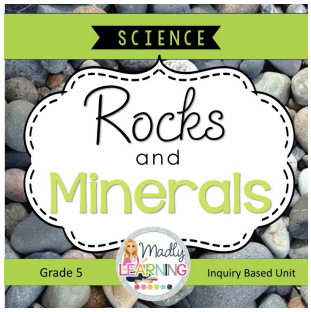
Check it Out

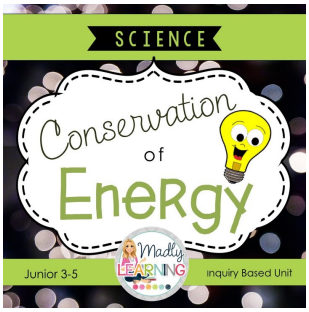
Thank you for purchasing this unit. Please check out my other units on my TPT store. I hope that you enjoyed it and found it useful. If you would like to see more of my products please check out the links below.

4th Grade





5th Grade



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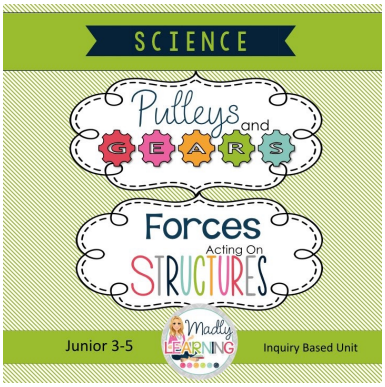
Combined Grade 4/5



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Science & Social Studies Bundles

SCIENCE

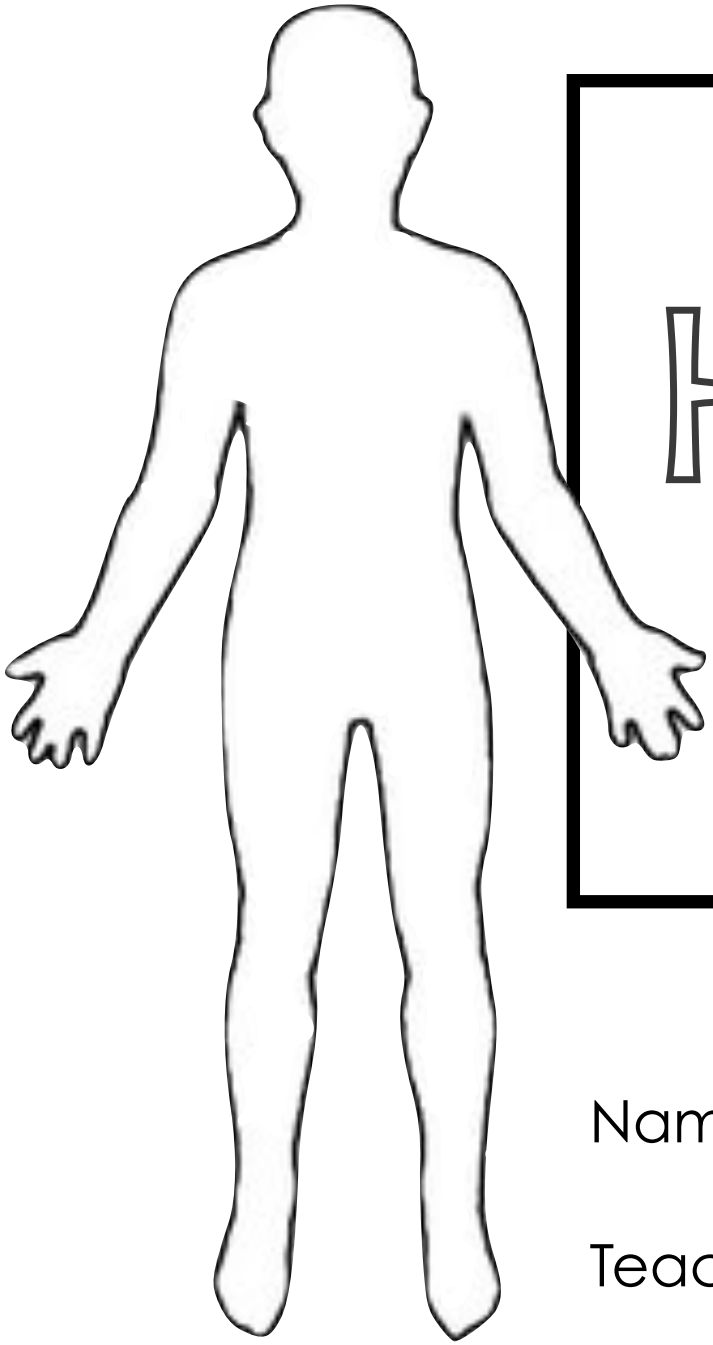
Animal Habitats

Name: _____

Teacher: _____

Animal Habitat

SCIENCE



The Human Body

Name: _____

Teacher: _____

Dear Teacher,

Thank you for purchasing your own license to use this product in your classroom. This unit has been designed to support your teaching with your students to focus on an inquiry approach to teaching. In this unit students will learn how to research and gather information, analyze and synthesize information that they find from various sources to learn all about both the major systems of the Human Body (Respiratory, Digestive, and Circulatory Systems) and various habitats around the world.

This unit can be used by teachers at any stage of their inquiry journey. Learning how to use an inquiry approach in your classroom is a valuable and changing experience. As you begin I cannot promise you that it will all be smooth sailing as inquiry can be messy and uncomfortable as the teacher lets go of some control over student learning and the students begin to learn to take a more active role in their own learning. Understanding that this process is a journey and that this unit will help you to begin, continue or support you on that journey is paramount. If you are new to inquiry and would like more support please check out my video inquiry series on my website at www.madlylearning.com to learn about how I implement inquiry in my classroom with my split grade.

These two units are combined together to help teachers of split grades teach these two concepts together. Although there are very few overlapping ideas, building your students' independence skills as they work through this unit is also an important factor in determining your success. Students will need to have independent work skills and group work skills already in place to allow you to teach both groups separately. Building independence support can be found through this free resource.

As always if you have any questions, concerns or comments you would like to share with me, I am always available to support you. Send me an email and I will get back to you promptly. I appreciate when buyers contact me directly on any issue prior to leaving feedback.

Enjoy the unit.

Sincerely,

Patti
@madlylearning.
EMAIL : info@madlylearning.com

Digital Support

Throughout this unit there are various references to using technology to support your instruction and implementation of this unit. The following is a quick guide to using these digital tools.

QR CODE READER - Free App:

This is a free app for mobile devices that can scan QR codes. These are picture codes that help to easily direct students to the website that you want them to go to without needing to enter a web address. Students simply take a picture of the QR code and they are immediately linked to the website. Additionally, on each page of this resource with a QR code there is a short web link that can be entered if using a desktop or laptop computer.

QR Code Reader APP

LiveBinder:

Many times when dealing with websites the pages that you want to link to will change. In searching for a way to easily share links with customers for their students to access, I have found LiveBinder. It is like a binder online. There are stored webpages, organized into tabs, that can be easily redirected if a link dies or stops working. Yet the link your students use will stay the same. I have linked all of the research required for this unit in a LiveBinder. Please do not share this link with other teachers. You paid for this resource so the access to this tool is yours. Please notify me if a link does not work for you and it is easily fixed. My email address is: Info@MadlyLearning.com

LIVEBINDER LINK

For Student Research

Animal Habitats

http://goo.gl/n74u4d

Access code: MLSS&S

LIVEBINDER LINK

For Student Research

Human Body

http://goo.gl/2HE7yh

Access code: MLSS&S

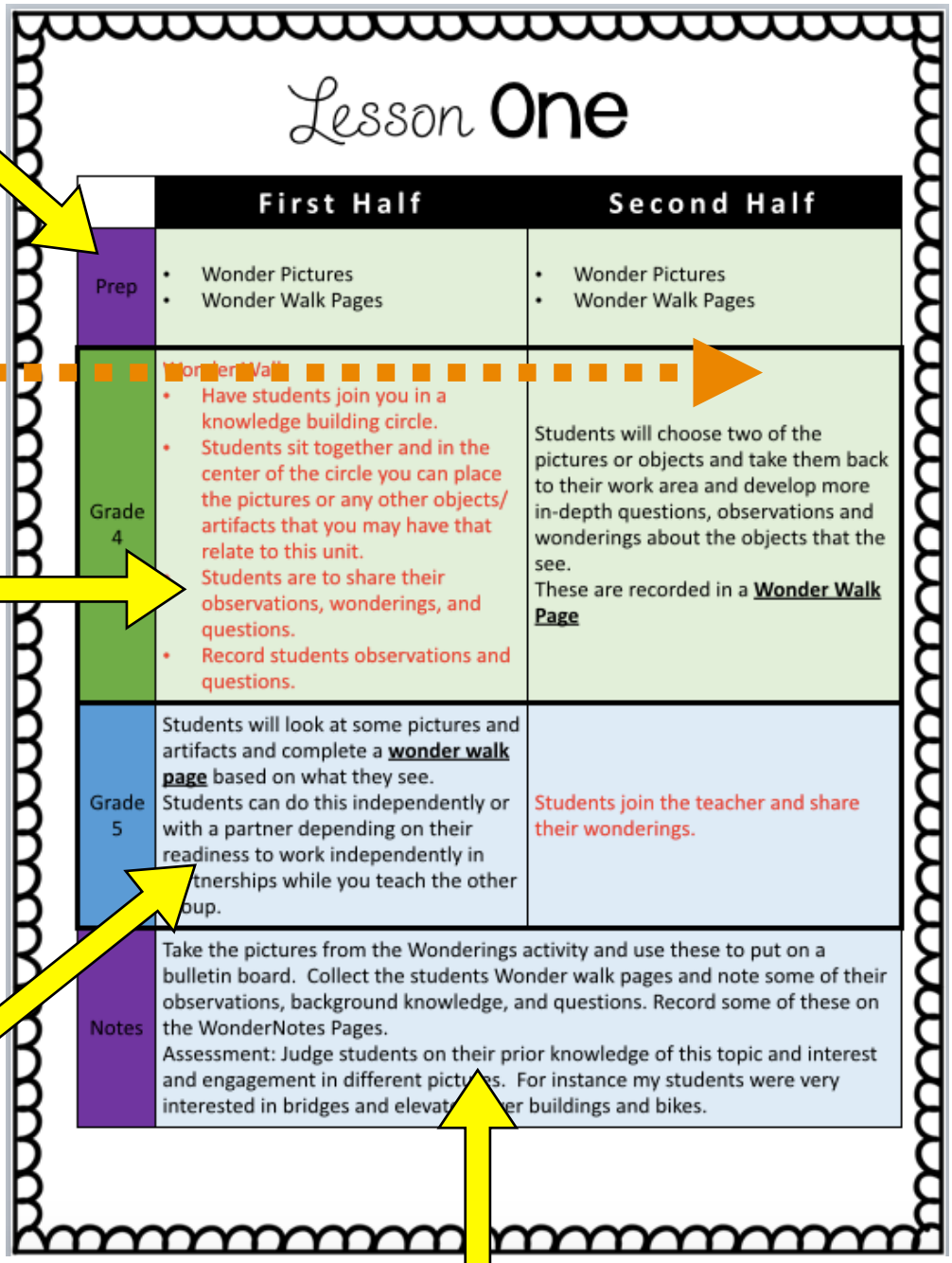
How to read
The Lesson Plans

Prep: Suggestions to help you prepare for the lesson

Read each grade horizontally.

The text highlighted in Red (lighter) text is teacher led time.

The other black text is independent tasks



Lesson One

	First Half	Second Half
Prep	• Wonder Pictures • Wonder Walk Pages	• Wonder Pictures • Wonder Walk Pages
Grade 4	• Have students join you in a knowledge building circle. • Students sit together and in the center of the circle you can place the pictures or any other objects/ artifacts that you may have that relate to this unit. Students are to share their observations, wonderings, and questions. • Record students observations and questions.	Students will choose two of the pictures or objects and take them back to their work area and develop more in-depth questions, observations and wonderings about the objects that the see. These are recorded in a **Wonder Walk Page**
Grade 5	Students will look at some pictures and artifacts and complete a **wonder walk page** based on what they see. Students can do this independently or with a partner depending on their readiness to work independently in tnerships while you teach the other oup.	Students join the teacher and share their wonderings.
Notes	Take the pictures from the Wonderings activity and use these to put on a bulletin board. Collect the students Wonder walk pages and note some of their observations, background knowledge, and questions. Record some of these on the WonderNotes Pages. Assessment: Judge students on their prior knowledge of this topic and interest and engagement in different pict s. For instance my students were very interested in bridges and elevat r buildings and bikes.	

Extra information, suggestions or extension activities.

Combined Teaching Plan

	Grade 4	Grade 5
1	Intro - Draw a picture	Intro - Wonder wall and knowledge building circle.
2	What is a Habitat? Food, water, shelter, space.	Structure and function of the **Digestive System** - Read and label the parts. Make a model of the digestive System.
3	Food chains	Structure and function of the digestive system - Digestive system task cards (What do the organs do?)
4	Adaptable animals vs. Specialized species	Diseases of the digestive system- Match and label task cards.
5	Polar region habitats	Structure and function of the respiratory system- Make a lung.
6	Desert habitat	Structure and function of the respiratory system- Parts of the lung with reading and interactive notebook activity.
7	Tropical rain forest habitats	Common diseases of the respiratory system- Asthma and the lungs (Science experiment).
8	Ocean habitats	Structure and function of the circulatory system- Reading "The Pump it Path" (included) Life size model of the heart experiment with interactive notebook activity.
9	Coniferous forest habitat	Structure and function of the circulatory system- Making blood experiment.
10	Grassland habitat	Common diseases of the circulatory system- Heart disease modelled inquiry find and match (Research links provided via web-based LiveBinder).
11	Why are animals endangered?	Social and environmental impacts on different body systems.
12	Inquiry project: Choose an endangered animal that interests you and research various aspects of it. Topics include habitat, food chain, adaptation, threats to environment.	Inquiry project: Exploring Social and environmental impacts on human body systems.

Curriculum Focus

Grade 4

Ontario

	Grade 4	Curriculum Expectations
1	Intro - Draw a picture	
2	What is a habitat? Food, water, shelter space.	3.1 - Demonstrate an understanding of habitats as areas that provide plants and animals with the necessities of life (e.g., food, water, air, space, and light).
3	Food chains	3.2 - Demonstrate an understanding of food chains as systems in which energy from the sun is transferred to producers and then to consumers.
4	Adaptable animals vs. specialized species	3.7 - Describe structural adaptations that allow plants and animals to survive in specific habitats. 3.8 - Explain why changes in the environment have a greater impact on specialized species than on generalized species.
5	Polar region habitats	3.3 - Identify factors (e.g., availability of water or food, amount of light, type of weather) that affect the ability of plants and animals to survive in a specific habitat. 3.4 - Demonstrate an understanding of a community as a group of interacting species sharing a common habitat. 3.5 - Classify organisms, including humans, according to their role in a food chain (e.g., producer, consumer, decomposer). 3.6 - Identify animals that are carnivores, herbivores, or omnivores.
6	Desert habitat	
7	Tropical rain forest habitats	
8	Ocean habitats	
9	Coniferous forest habitat	
10	Grassland habitat	
11	Why are animals endangered?	3.9 - Demonstrate an understanding of why all habitats have limits to the number of plants and animals they can support. 3.10 - Describe ways in which humans are dependent on natural habitats and communities.
12	Inquiry project:	Overall 1.0 - Analyze the effects of human activities on habitats and communities. (includes all specific expectations as well). Overall 2.0 - Investigate the interdependence of plants and animals within specific habitats and communities.

Grade 4

Unit Checklist

Check of the criteria when students demonstrate mastery of the learning outcome

Curriculum Expectations									
Demonstrate a solid understanding of habitats as areas that provide plants and animals with the necessities of life (e.g., food, water, air, space, and light).									
Demonstrate a solid understanding of food chains as systems in which energy from the sun is transferred to producers and then to consumers.									
Demonstrate a solid understanding of food chains and food webs.									
Identify how one species in a food chain or web affects other species in both positive and negative ways.									
Identify animals that are carnivores, herbivores, or omnivores.									
Describe structural adaptations that allow plants and animals to survive in specific habitats.									
Explain why changes in the environment have a greater impact on specialized species than on generalized species.									
Describe ways in which humans are dependent on natural habitats and communities.									
Can identify the following features of a few habitats of personal interest.									
- Can identify a food chain within the habitat.									
- Can describe the environmental features of the habitat.									
- Can identify a few key species and how they have adapted to the environment.									
- Can identify how humans have impacted the environments in both positive and negative ways.									
OTHER									
Follow safety procedures									
Communicate their understanding with others in a variety of ways.									
- Group discussions									
- Student participation in small groups									
- Student notebook and reflection pages									
- Student teacher conferences									

Curriculum Focus
Grade 5

Ontario

	Grade 5	Curriculum Expectations
1	Intro - Wonder wall and knowledge building circle	
2	Structure and function of the **Digestive System** - Read and label the parts. Make a model of the digestive system.	3.2 - Describe the basic structure and function of major organs in the respiratory, circulatory, and digestive systems. 3.3 - Identify interrelationships between body systems.
3	Structure and function of the digestive system-Digestive system task cards (What do the organs do?)	3.2 - Describe the basic structure and function of major organs in the respiratory, circulatory, and digestive systems. 3.3 - Identify interrelationships between body systems.
4	Diseases of the digestive system-Match and label task cards.	3.4 - Identify common diseases and the organs and/or body systems that they affect.
5	Structure and function of the **Respiratory System**-Make a lung.	2.3 - Design and build a model to demonstrate how organs or components of body systems in the human body work.
6	Structure and function of the respiratory system-Parts of the lung with reading and interactive notebook activity.	3.2 - Describe the basic structure and function of major organs in the respiratory, circulatory, and digestive systems.
7	Common diseases of the respiratory system-Asthma and the lungs (Science experiment).	2.1 - Follow established safety procedures. 2.2 - Use scientific inquiry/experimentation skills. 3.4 - Identify common diseases and the organs and/or body systems that they affect. 2.2 - Use scientific inquiry/experimentation skills to investigate changes in body systems as a result of physical activity.
8	Structure and function of the **Circulatory System**-Reading "The Pump it Path" (included), life size model of the heart experiment with interactive notebook activity.	2.3 - Design and build a model to demonstrate how organs or components of body systems in the human body work and interact with other components. 3.2 - Describe the basic structure and function of major organs in the respiratory, circulatory, and digestive systems. 3.3 - Identify interrelationships between body systems.
9	Structure and function of the circulatory system-Making blood experiment.	2.3 - Design and build a model to demonstrate how organs or components of body systems in the human body work. 3.2 - Describe the basic structure and function of major organs in the respiratory, circulatory, and digestive systems.
10	Common diseases of the circulatory system-Heart disease modelled inquiry find and match (Research links provided via web-based LiveBinder).	3.4 - Identify common diseases and the organs and/or body systems that they affect.
11	Reflect and review	3.2 - Describe the basic structure and function of major organs in the respiratory, circulatory, and digestive systems. 3.4 - Identify common diseases and the organs and/or body systems that they affect.
12	Inquiry project: Exploring social and environmental impacts on human body systems.	Overall 1.0 - Analyze the impact of human activities and technological innovations on human health. Overall 2.0 - Investigate the structure and function of (a major organ) in a human body system.

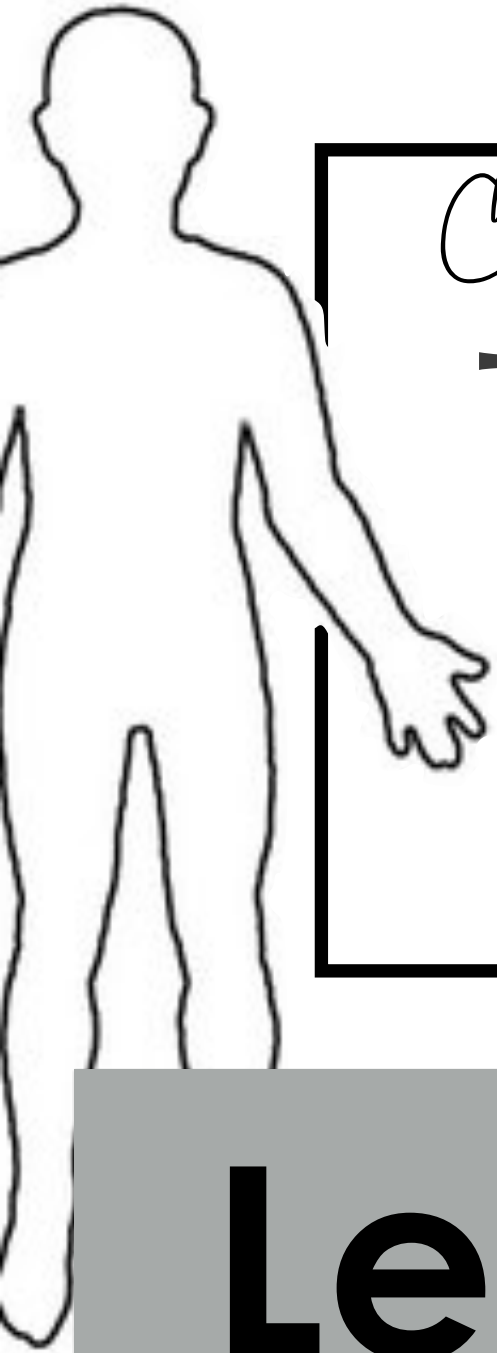
Grade 5

Unit Checklist

Check of the criteria when students demonstrate mastery of the learning outcome

Curriculum Expectations	NAME								
DIGESTIVE SYSTEM									
Describes the structure and function of most of the organs of the digestive system.									
Identify major diseases of the digestive system and the organ that it affects.									
Design and/or build a model to demonstrate how organs or components of body systems in the digestive system works.									
Identify how some of the organs of the digestive system interact with each other and with other organ systems in the body.									
RESPIRATORY SYSTEM									
Describe the structure and function of most of the organs of the respiratory system.									
Identify major diseases that affect the respiratory system.									
Design and/or build a model to demonstrate how organs or components of body systems in the respiratory system works.									
Identify how the organs of the respiratory system interact with each other and other organ systems within the body.									
CIRCULATORY SYSTEM									
Describe the structure and function of most of the organs of the circulatory system.									
Identify major diseases of the circulatory system									
Identify how each part of the circulatory system works together and how it works with other systems within the body.									
Design and/or build a model to demonstrate how organs or components of body systems in the circulatory system works.									
OTHER									
Follow safety procedures.									
Communicate their understanding with others in a variety of ways.									
- Group discussions									
- Student participation in small groups									
- Student notebook and reflection pages									
- Student teacher conferences									

SCIENCE



Combined Grade

Teaching Plan

Habitats
&
Human Body

Lesson #1

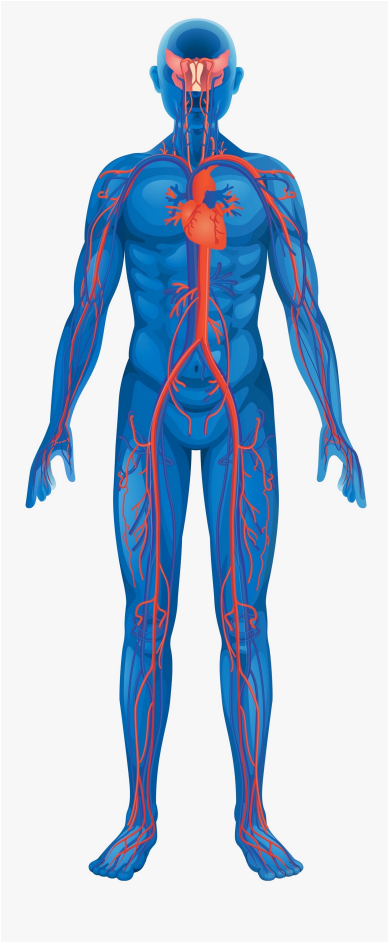
Combined Lesson #1

	First Half	Second Half
Prep	• A wonder wall is a great way to start off an inquiry unit. Show students a collage of pictures handed out on picture cards and have them tell you what they see and what they notice. Assess their background knowledge on the topics, their interest levels on certain aspects of the unit, and allow them to ask and record questions they might have will help to lead the discussion and the unit.	
Grade 4	***Students will also complete a diagnostic assessment explaining what they know about habitats and animals prior to beginning the unit.***	Ask students to draw a picture of a place where animals live. Ask them to include as many details and animals that they can think of that live in the same area. • Describe your picture • What animals live there? • Where in the world would this animal live? • What kind of things would this animal need to survive? • What is a habitat? Then have students share their thoughts about what they saw.
Grade 5	***Have students sit in a knowledge building circle and present the cards to students. Students begin by silently passing around the cards, reflecting on what they are seeing using the questions. When they get their first card back they put it in the middle of the circle.*** ***<u>Questions:</u>*** ***What do you see?*** ***What do you notice?*** ***What does this remind you of?*** ***What do you wonder about?*** ***What questions do you have?*** ***Then students share their thoughts about what they saw.***	***Students record their questions to their wonder wall activity in their notebook or on a lined page.*** ***Students complete a diagnostic on human body systems.*** ***Answers are here:*** ***<u>https://www.dropbox.com/s/9pd90axkov986ef/Answers%20for%20wonder%20wall.pdf?dl=0</u>***
Notes	***If time permits students can begin to assemble their notebook/scrapbook. With their title page, My sticky thoughts page, and table of contents.***	

Draw a Picture

Where do the animals live?

1



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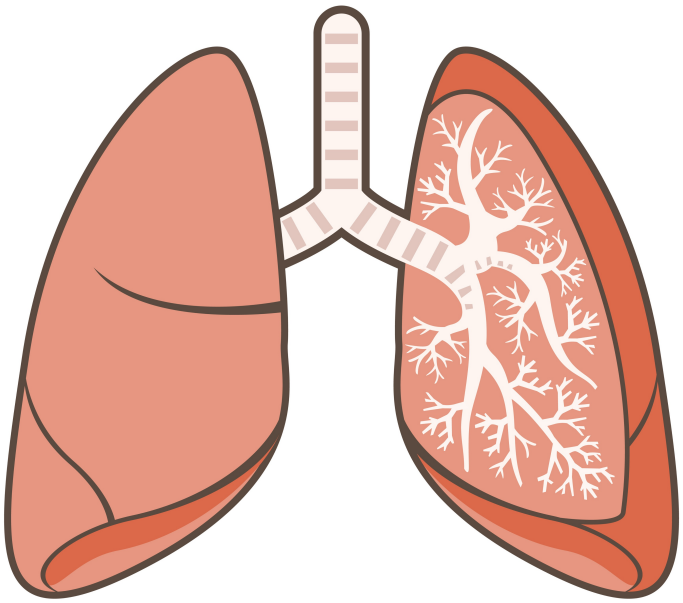

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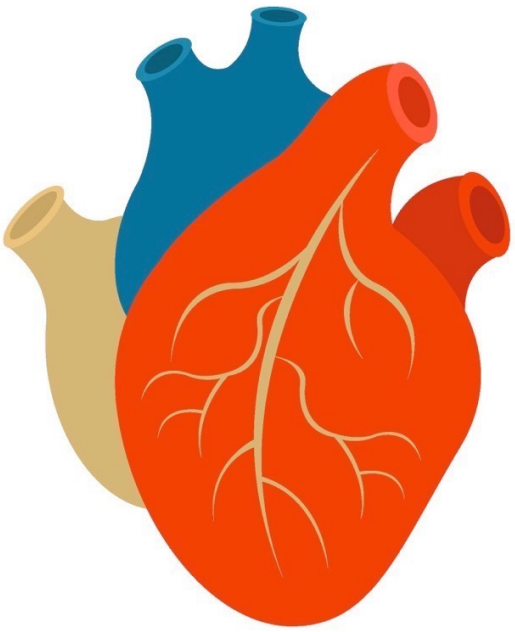

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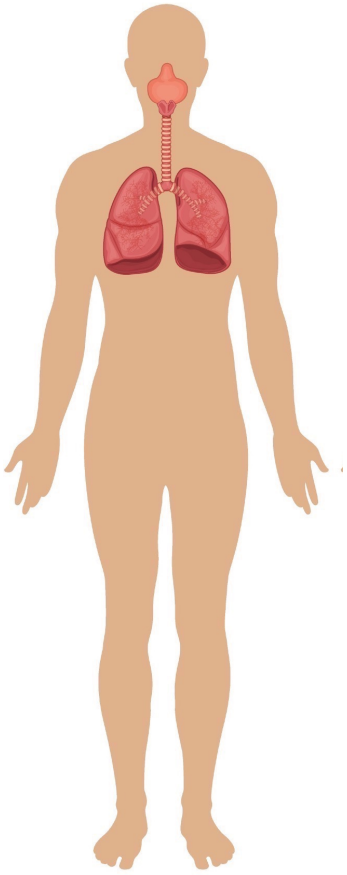

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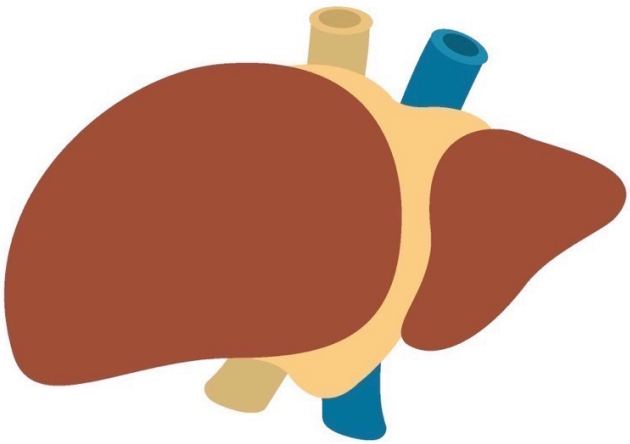

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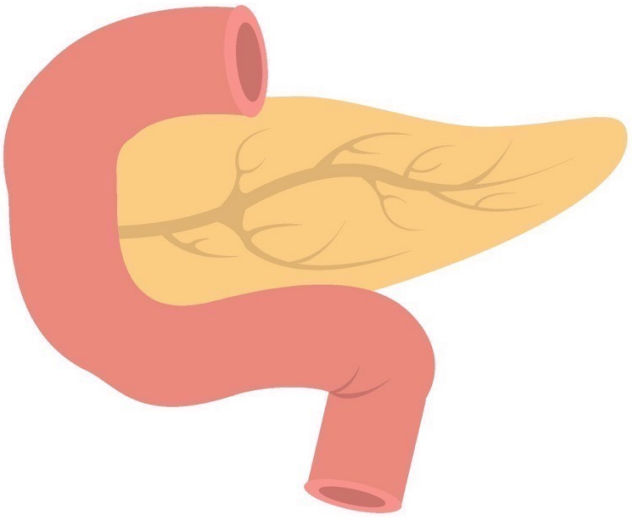

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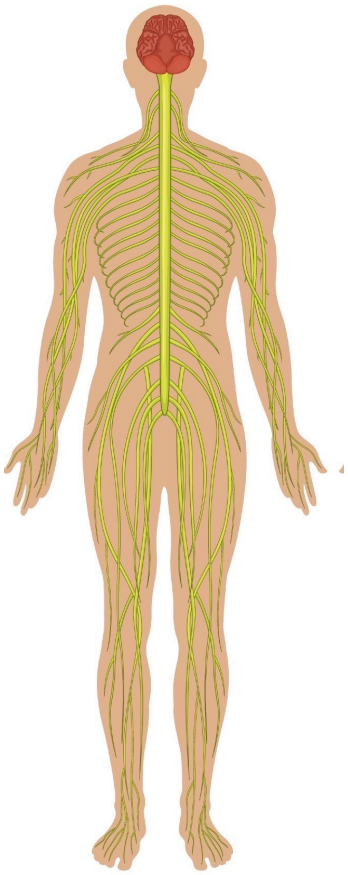

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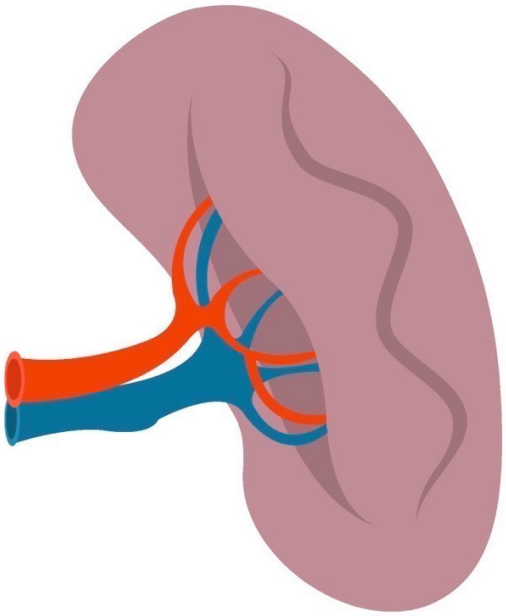

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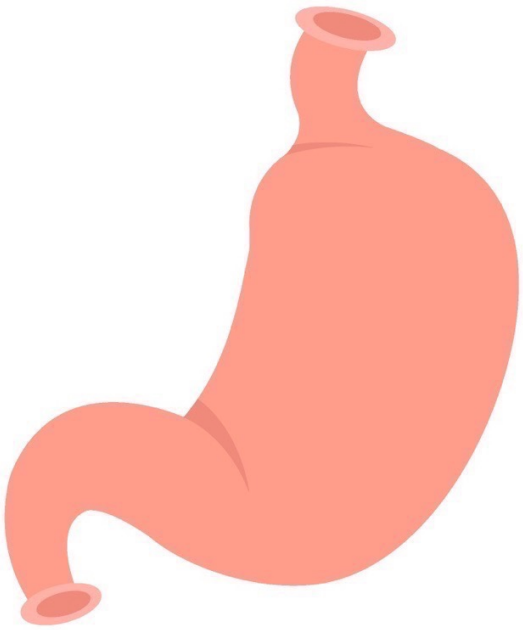

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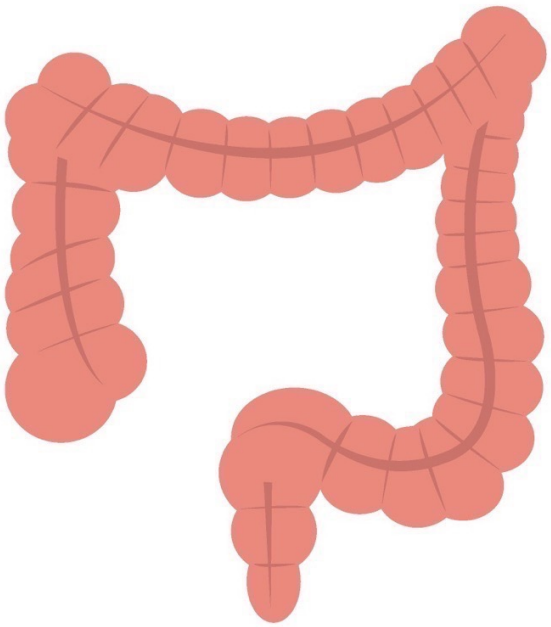

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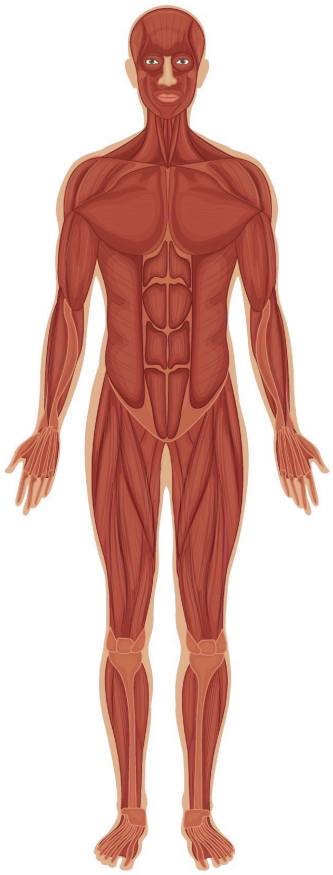

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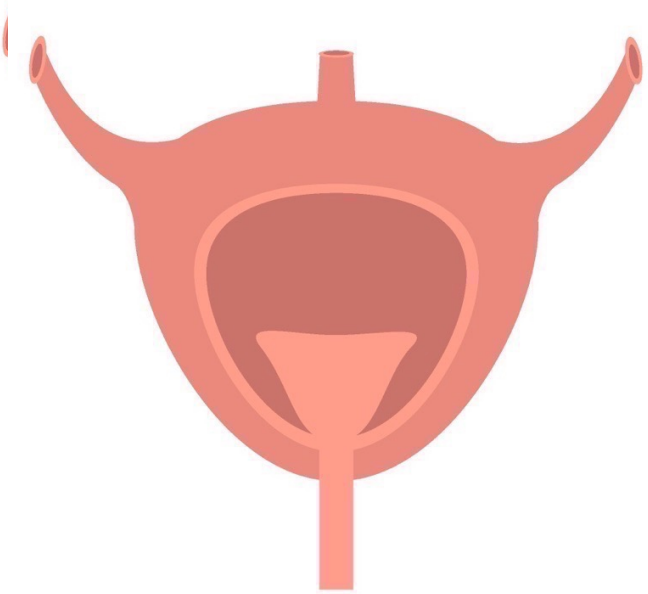

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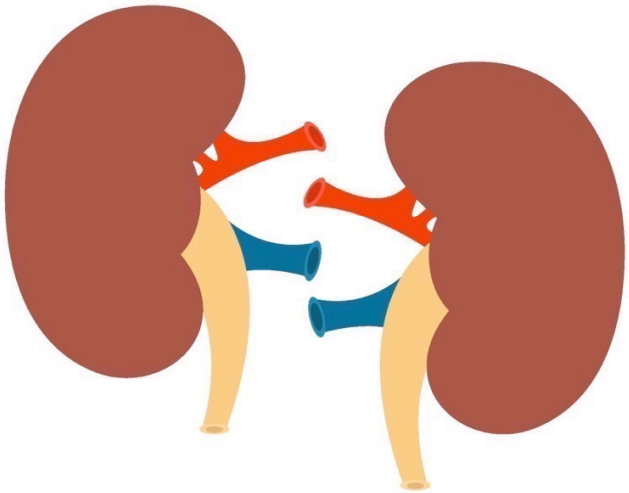

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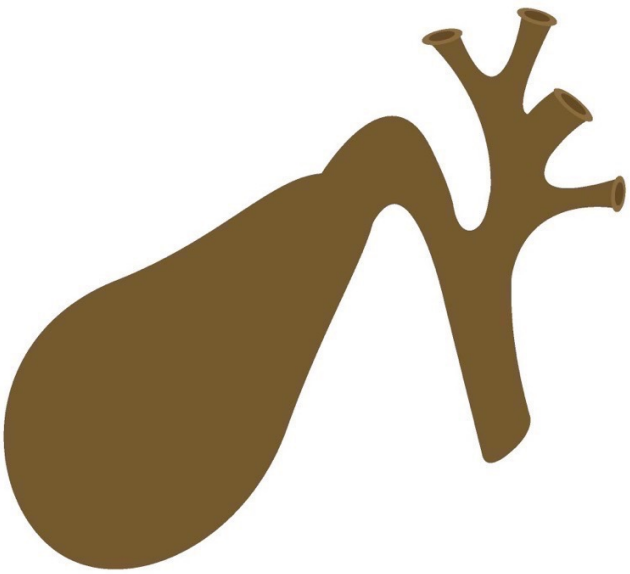

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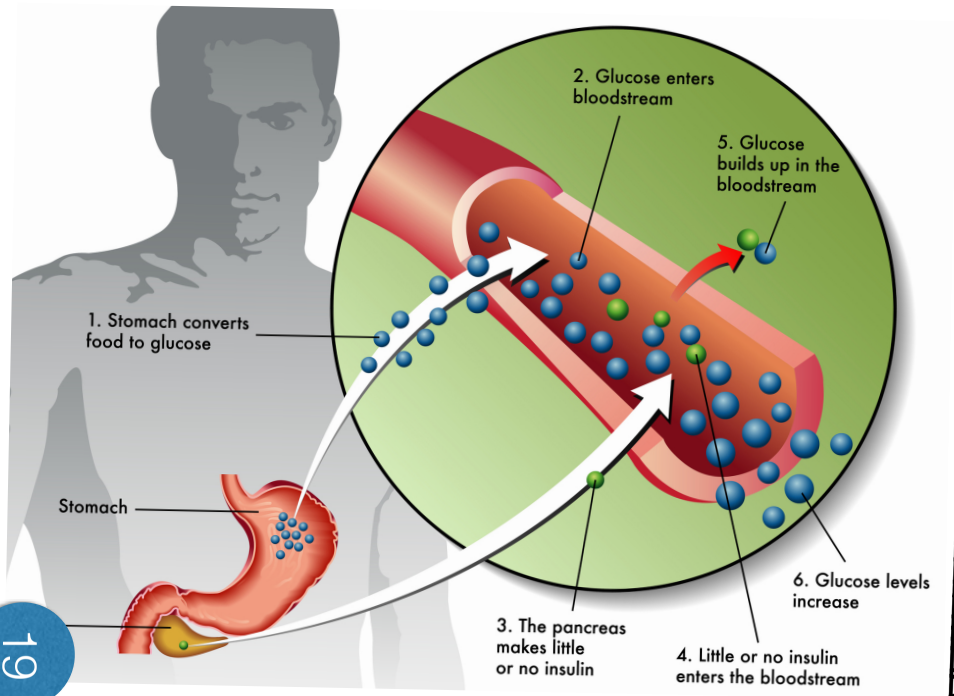

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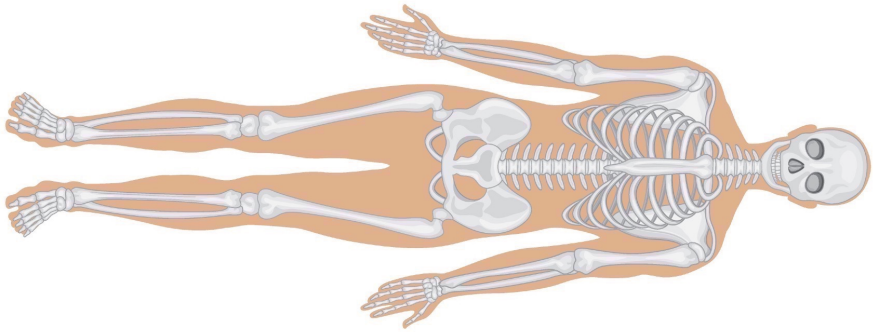

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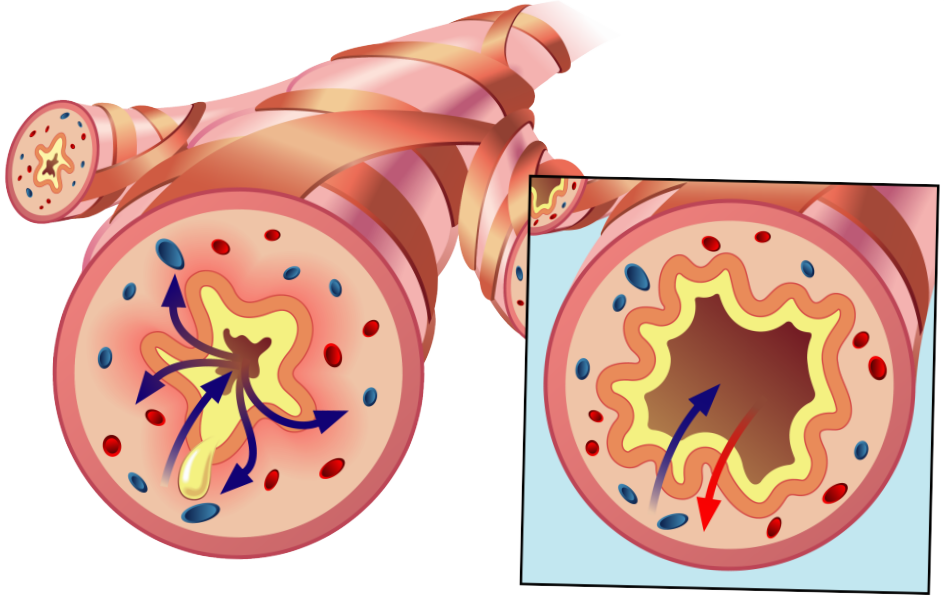

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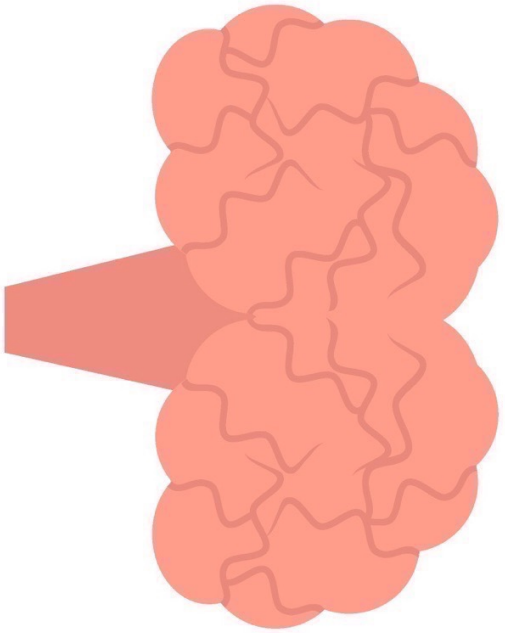

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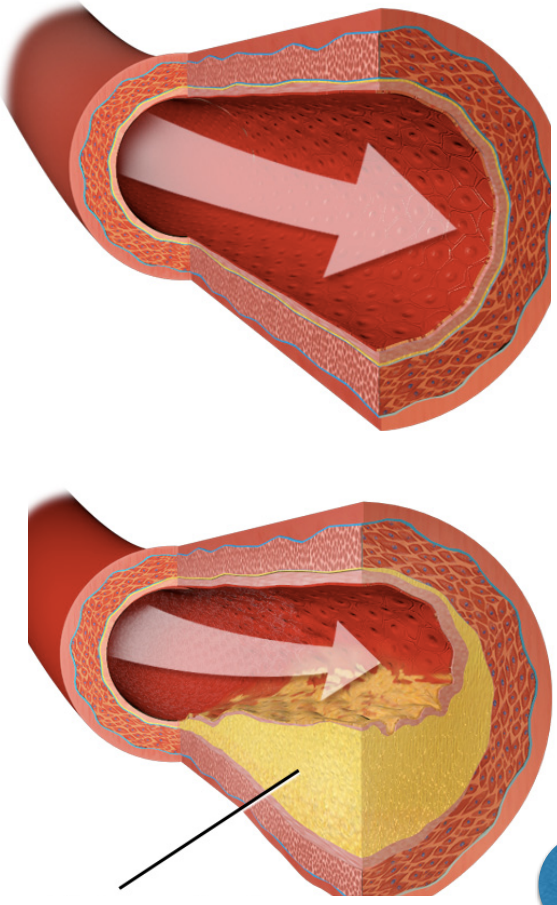

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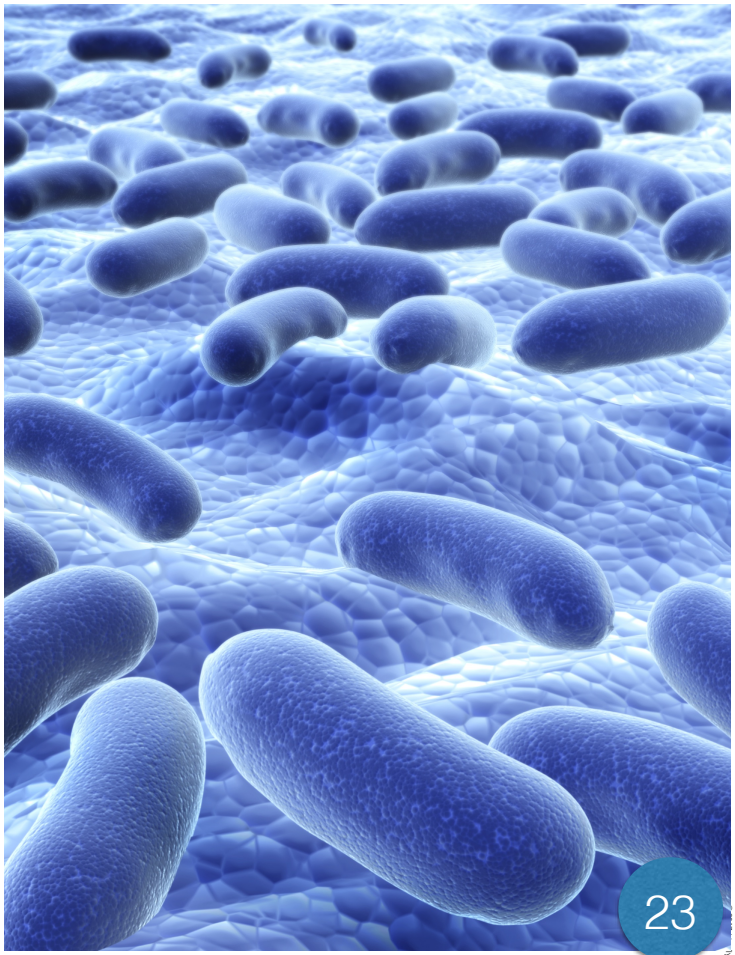

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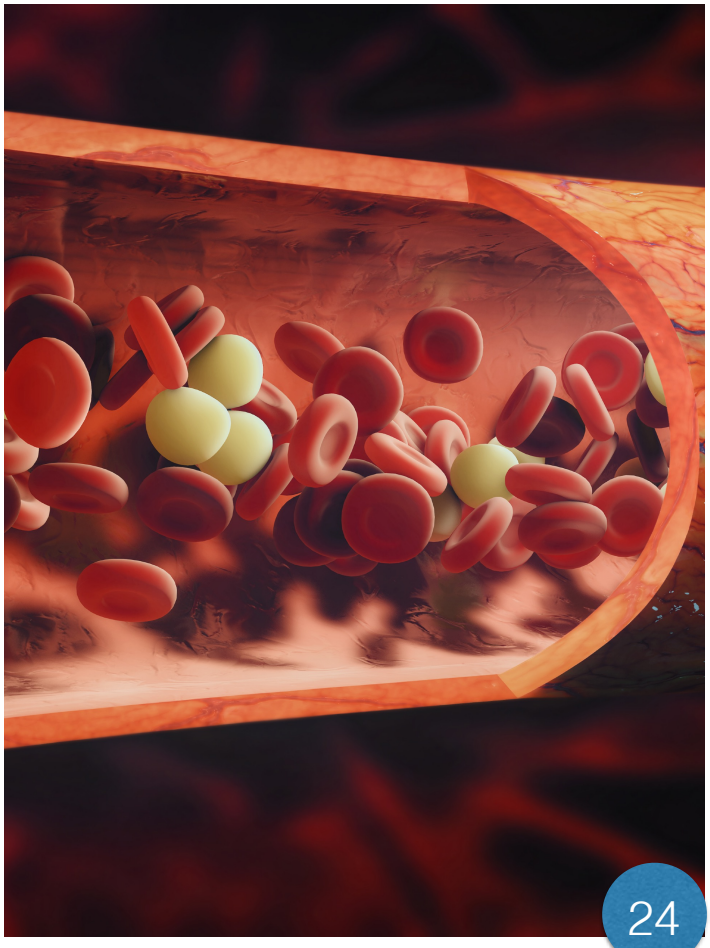
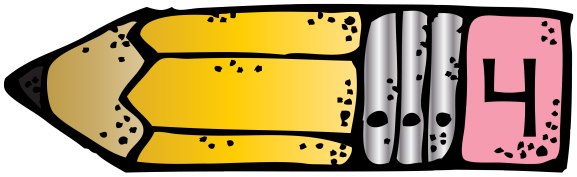


24

Wonder Wall Answers

1	Digestive System	13	muscular system
2	Circulatory System	14	bladder
3	Lungs	15	kidney
4	Heart	16	gall blader
5	Respiratory System	17	skeletal system
6	Liver	18	brain
7	Pancrease	19	Type 1 Diabetes
8	small intestine	20	Bronchial Tube Normal vs Asthma Attack
9	nervous system	21	smokers lung
10	spleen	22	heart disease Plaque
11	stomach	23	bacteria
12	large intestine	24	blood cells

Diagnostic Assessment



Answer the following questions to the best of your ability. Do not worry if you do not know the answers. Just write what you know or what you think might be the correct answer.

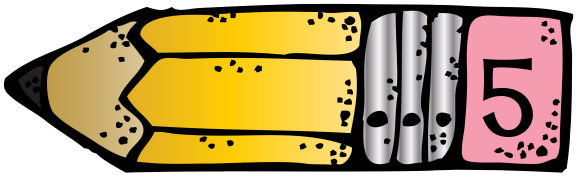
What is a habitat?

What elements do habitats need to support the animals living there?

What are different types of habitats around the world? Give an example of three types of animals live in each habitat.

How can humans protect habitats?

Diagnostic Assessment



Answer the following questions to the best of your ability. Do not worry if you do not know the answers. Just write what you know or what you think might be the correct answer.

Name three different types of systems that work together in your body to help it function:

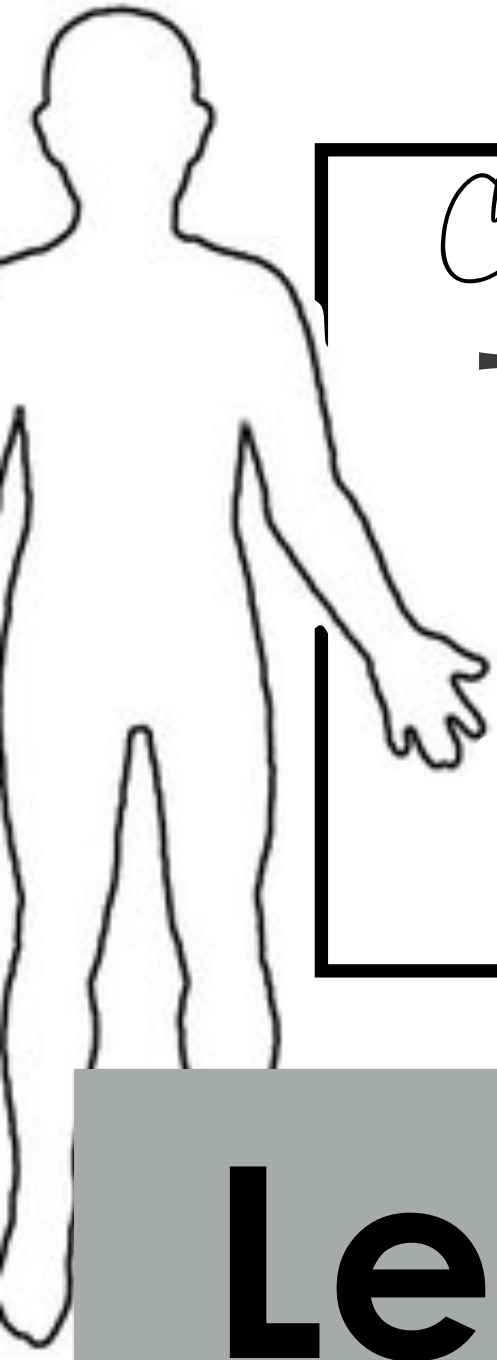
What happens to food after you swallow it?

How do your lungs work to keep your body alive?

How does your heart work?

Why is diet and exercise so important for your health?

SCIENCE



Combined Grade

Teaching Plan

Habitats
&
Human Body

Lesson #2

Combined Lesson #2

	First Half	Second Half
Prep	• *Prepare enough game boards for students to play in groups. You can cut out all of the pieces and have them ready in an envelope for students or you can have them do this.* • *Prepare a model game board for yourself to show students how to play. You may consider playing this game yourself prior to playing it with students to become more familiar with it.* • *Grade 5 students will need access to technology for research or printed research baskets.*	
Grade 4	Students will read the instructions for "Hare by Nature". Review the rules of the game and model for students the various roles in the game.	With a partner they will play the game "Hare by Nature". Students can use the playing pieces provided or they can use counters from around the classroom. Students will need about 30 food/water, 5 foxes, and 24 hares. This game is similar to checkers and the goal is for students to realize that both people need to work together to keep a balance in the habitat. Too many of one thing will make it an unbalanced habitat and the game becomes unfair or end quickly. The goal is to make their habitat last the longest and be sustainable.
Grade 5	Students will read the article on the Digestive System. Alternatively students can watch the video links on the LiveBinder link page. bit.ly/ML-HumanBody Access Code: MLHB	Together with students, look at the diagram of the digestive system and label each part. Students will cut and colour the pieces of the digestive system. Students will glue these into their notebooks.
Notes		

Hare by Nature

The goal of this game is to create a long lasting and sustainable habitat for both of the animals that live there.

What will you need

- 30 food/water pieces
- 5 foxes
- 24 hares
- 1 game board

Set Up

- Place two foxes in the middle of the board game.
- Start with 6 hares in their shelter spaces on the either end of the board.
- Place the 30 pieces of Food/Water cards on the board in any spots.

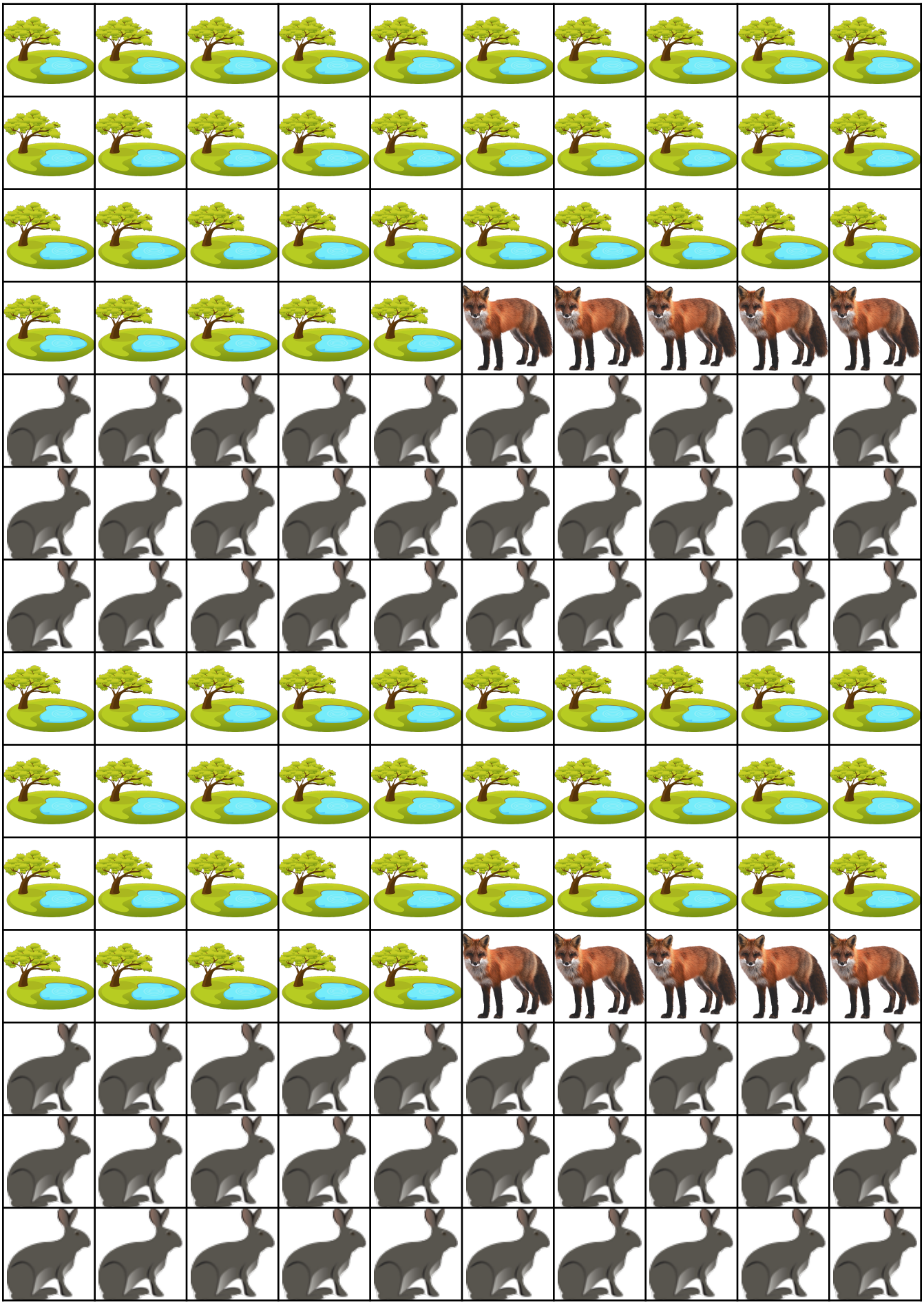
Foxes

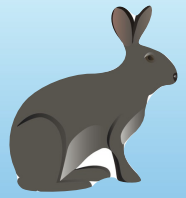
- If you are a fox you start with two playing pieces in the middle of the game board.
- In order to survive in your habitat you must catch and eat some hares
- You will move around the board trying to catch and eat the hares.
- You may move up to **3 spaces** at a time. (right or left only, not diagonal)
- You have **3 turns** to *catch a hare*. If you do not catch a hare for your pack in 3 turns, one of your foxes will die. Use the circles at the bottom of the game board to track your turns.
- After you **catch 5 hares** your population will grow and you will *earn a new fox* for your pack.

Hares

- Start with 6 hares.
- Place your hares anywhere in the shelter spaces at the side of the board. The shelter protects you from foxes.
- To begin you must choose one of your hares to leave the shelter and go get food/water.
- Hares may only move one space at a time.
- When you land on a food or water card, you get a new hare added to your shelter.
- If you do not land on a food/water card one hare from your shelter dies.
- You might eventually run out of shelter spaces to place your hares. When this happens, you have run out of space so the last hare to have moved will die.
- Whenever a hare dies, three food pieces are added back into the game in any available space.

The game ends after 10 minutes or when each player has no more moves left.





Hare by Nature

Student Reflection

Hare by Nature

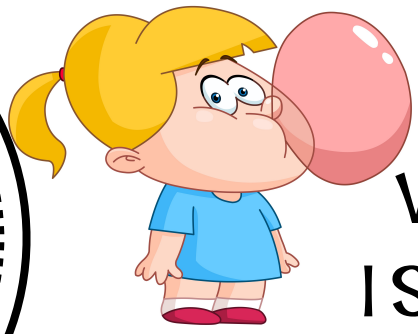
1. Describe how your game worked out when you played it.
   - How long did the game last?
   - What happened if you ran out of one element of the habitat (such as hares, wolves, food/water, or shelter)?

2. How might you change how you played to make your habitat live longer?

3. All habitats need to be balanced. Describe how you know this to be true after playing this game.

4. Would you conclude that you are more successful at this game if it is competitive or cooperative? Explain why.

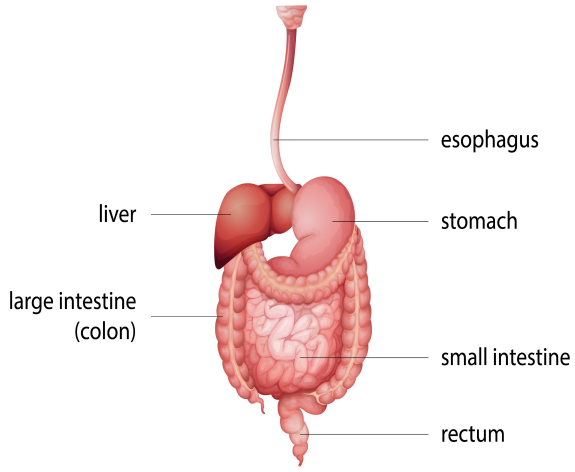
The Digestive System



What Happens if I Swallow My Gum?

Have you ever heard the tale about the kids who swallowed gum and their grandma told them that it would stay in their body for 7 years? Well, this isn't true. When you chew a piece of gum, your saliva begins to moisten the gum and along with your teeth the gum begins to break down and you taste the flavour. If you accidentally swallow the gum, it then travels down your ESOPHAGUS. That is like a large straw in your throat made up of muscles that flex and squeeze the gum down to your STOMACH.

Human Digestive System

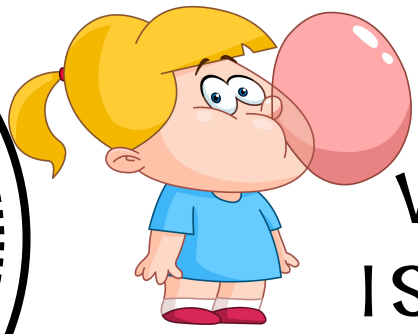


Once the gum reaches your stomach it is mixed and churned around like a washing machine breaking up the gum. This is necessary so that the body can take what it needs from the gum like NUTRIENTS. These are all the good things your body needs like fats, protein, and carbohydrates. It then leaves the stomach. When food leaves the stomach, all of that churning has turned it into a paste.

SMALL INTESTINE

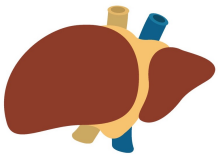
From the stomach the gum enters the SMALL INTESTINE. This part of the digestive system is a really long tube that is packed tightly in your stomach. The small intestine's job is to take the nutrients (all the good stuff your body needs) out of the food. There are not many nutrients in gum, so the small intestine usually can only take out some of the sugars in it.

The Digestive System

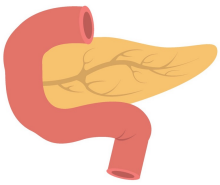


What Happens if I Swallow My Gum?

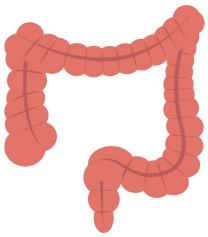
To help get the nutrients out of the food the small intestine needs the help of the liver and the pancreas. The LIVER sends bile, which is the waste left over after the liver cleans our blood. Bile helps us to break up the fats in our foods. The PANCREAS, which helps regulate the sugar levels in our blood, has another important job in the digestive system. It sends enzymes to help the small intestine break down carbohydrates, and proteins. Your gum along with the other food will pass through the small intestine. Eventually what is left is stuff you don't need and this ends up in the large intestine.



LIVER



PANCREAS

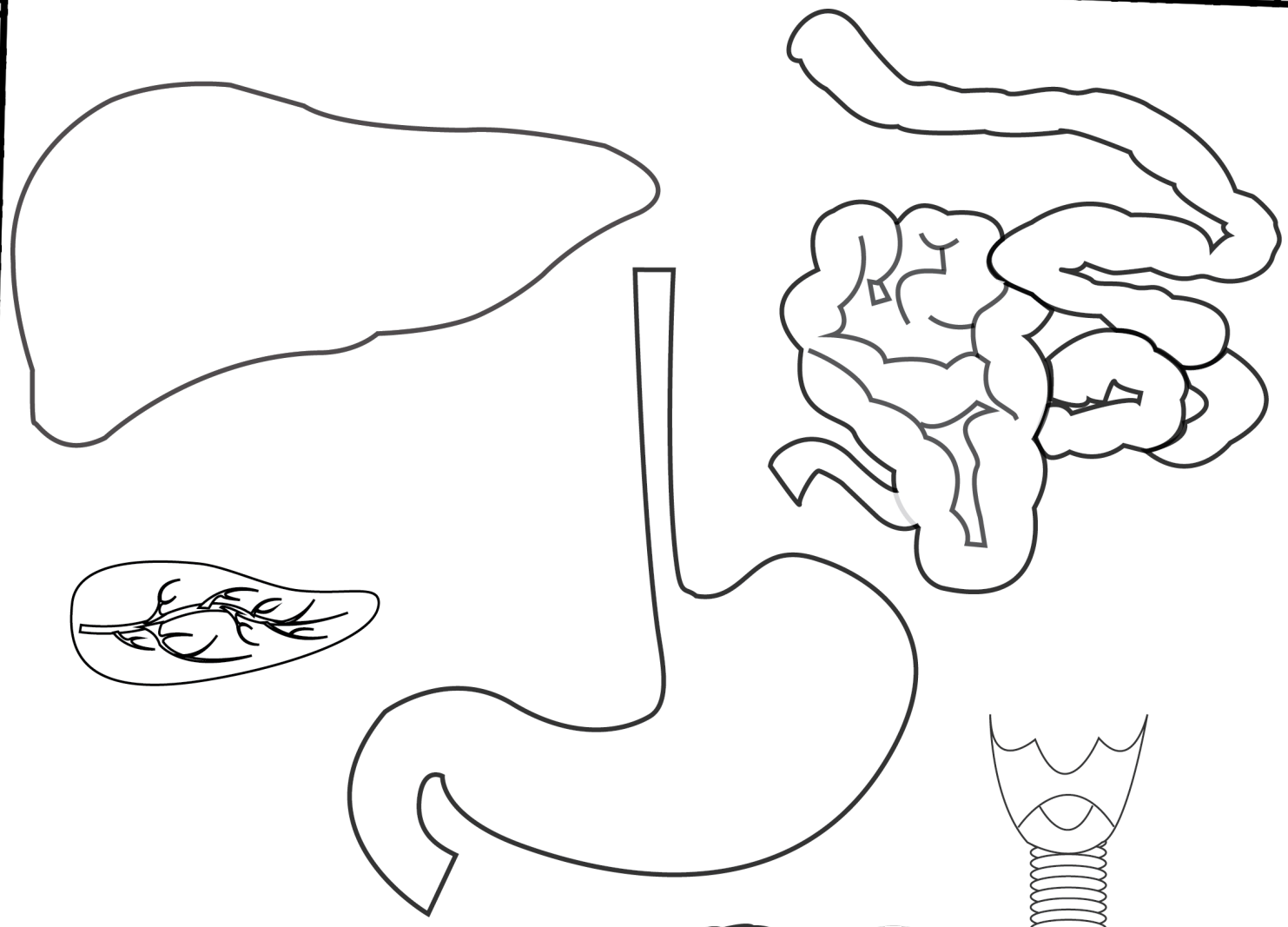


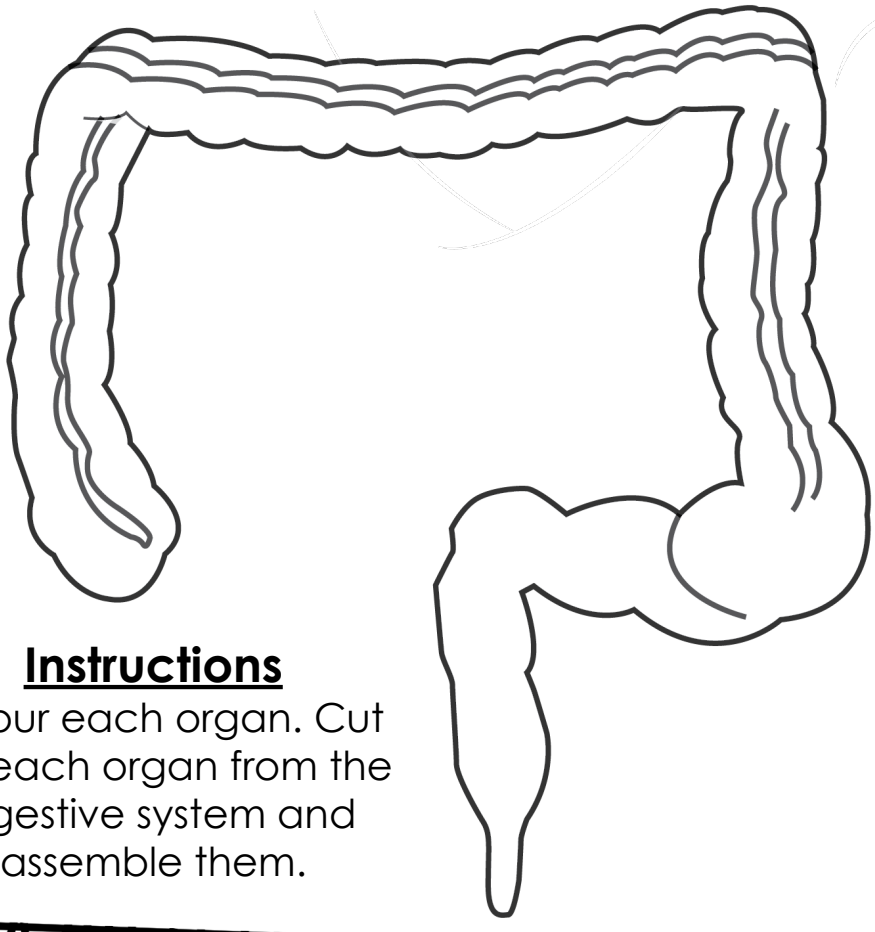
LARGE INTESTINE

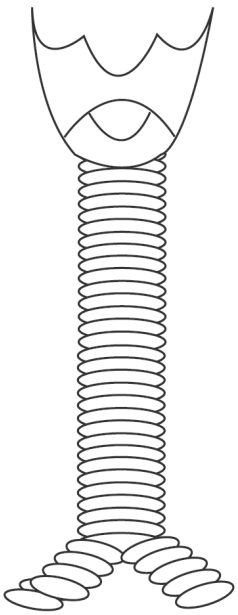
The job of the LARGE INTESTINE, sometimes called a colon, is to take any remaining water out of the left over food. It will take about 36 hours for the gum to pass through your large intestine.

Once all of the water has been removed the remaining waste, including your gum, is now poop and is passed out of your body through the rectum.

However, swallowing gum is still not a great idea because gum is very sticky and most of it does not get digested. Sometimes doctors will have to remove a blockage from your intestine that was caused by other foods getting stuck in the gum. Food can stick to the gum, creating a blockage in your intestine.





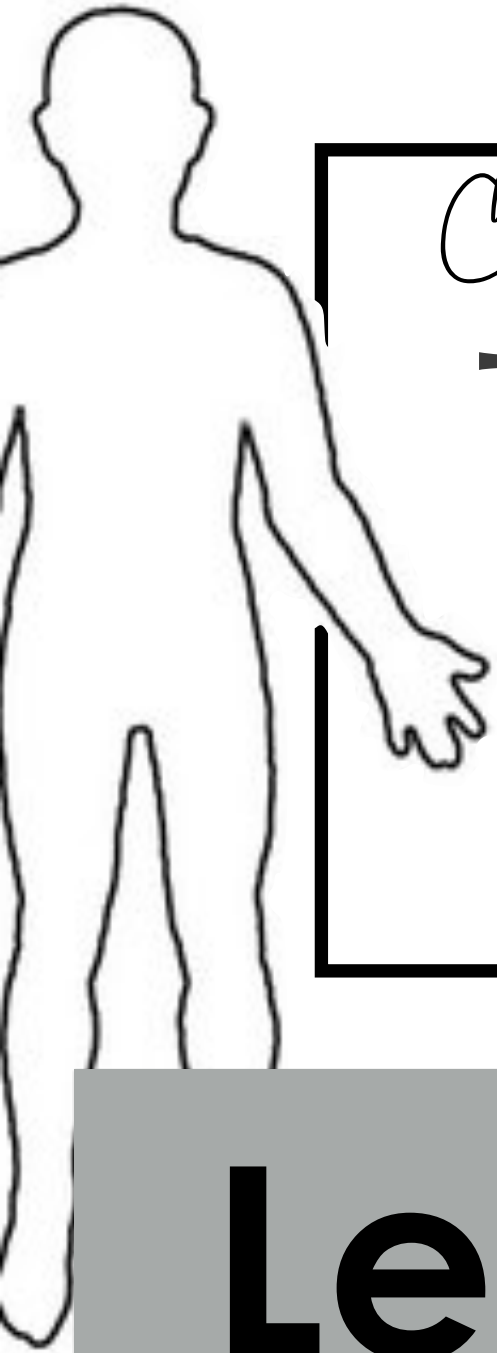


Instructions

Colour each organ. Cut out each organ from the digestive system and assemble them.

The Digestive System

SCIENCE



Combined Grade

Teaching Plan

Habitats
&
Human Body

Lesson #3

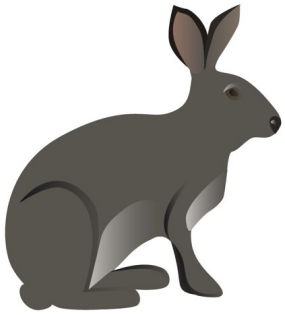
Combined Lesson #3

	First Half	Second Half
Prep	Who Eats Who - Cut out the task cards prior to the lesson.	
Grade 4	Who Eats Who - Have each student choose a card or two. Have them read the clue on the page to themselves. Ask them to think about what animals or plants might be predators or prey to their animal/plant card. Create food chain groups. Students will find the other members of their food chain groups. Students will share with others what is in their food chain. Students should discover that there are some similarities between food chains. They all have decomposers, producers, and consumers (herbivores, omnivores, carnivores).	*Students will then complete either the interactive notebook activity or the reflection page explaining what they learned about food chains.*
Grade 5	Students will complete a matching activity where they match the function of a part of the digestive system with the organ. This activity can be done in small groups as students infer from the clues on the written word cards.	Students will take up the organ sort together and discuss what they learned about the function of an organ system. Then with you they will write a story called "The Adventures of ____ (choose a piece of food). This story can be continued through your language arts program or can be given extra time during their next science period to finish their story.
Notes		

Find the Food Chain

Grasses

I get my energy from the sun and my nutrients from the ground thanks to help from decomposers.



The Rabbit

The green, green grass is very tasty. I just have to watch out for the sneaky fox.

The Eagle

Soaring through the air, I keep my sharp eyes looking out for the yummy fox in the meadow.

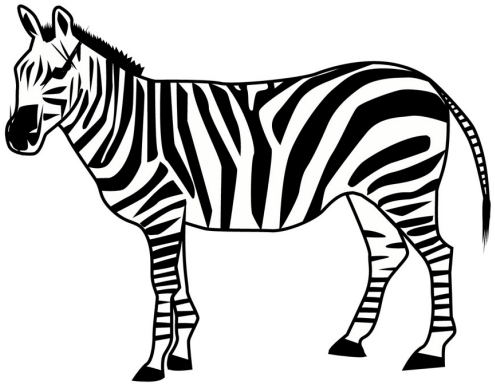
The Fox

Rabbits are a tasty treat when I really want to eat. But I have to keep an eye on the sky to avoid that eagle.

Find the Food Chain

Grasses

I get my energy from the sun and my nutrients from the ground thanks to help from decomposers.

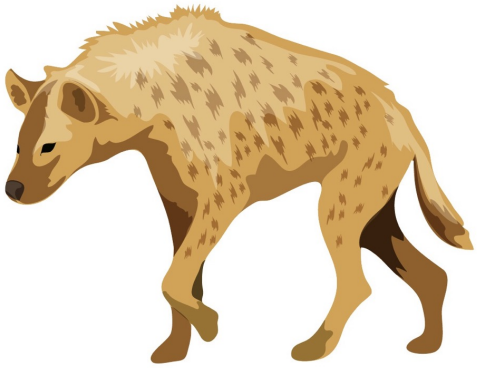


The Zebra

I like taking it easy and eating the grass with my friends. I just have to watch out for that sneaky hyena.

The Lion

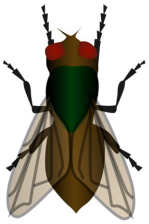
Hyena's are one of my favourite meals.



The Hyena

I have to be patient but eventually I will get my zebra meal. I just have to remember to watch out for that lion.

Find the Food Chain



.....

The Fly

I buzz around but I am always watching out for the frog.

.....

The Frog

I live in the grasslands and snacks on flies.

.....

The Owl

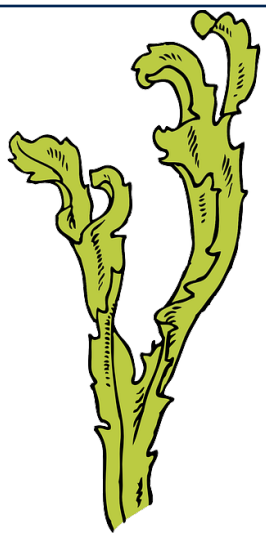
Mmmm… when I get really hungry I eat a slithery snake.

.....

The Snake

I slither through the tall grass looking for tasty frogs to eat.

Find the Food Chain

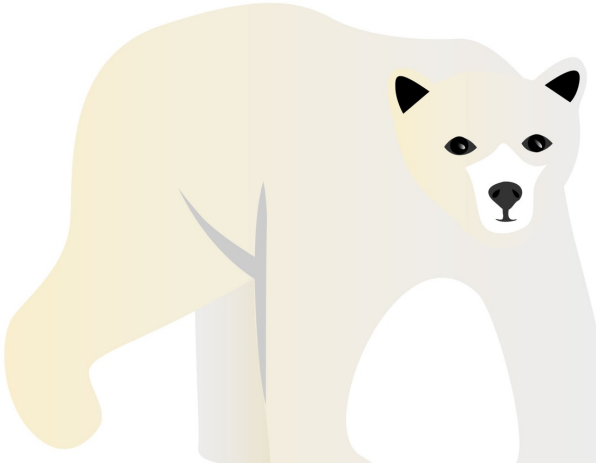


Algae and Seaweed

I wave and flow with the current in the water. I am a favourite snack of the fish.

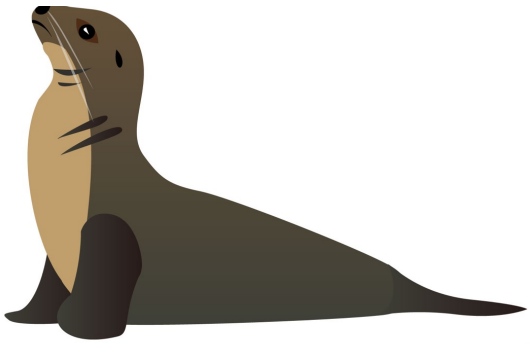
Fish

I swim and swim and snack on algae and seaweed. I try to avoid that sneaky seal.



The Polar Bear

I am a great hunter and my favourite meal is the tasty seal.



The Seal

I dive and swim hunting for fish. If I can avoid the big polar bear it is a good day.

Find the Food Chain

Bamboo

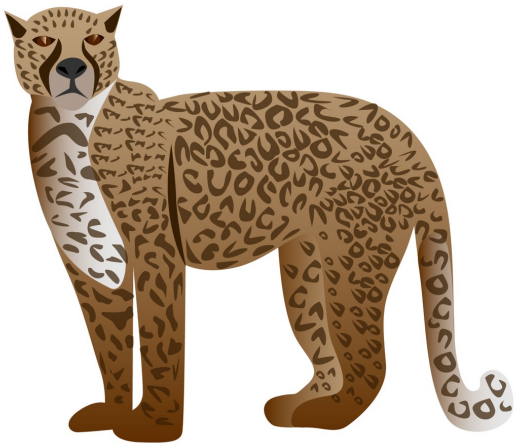
I grow tall and strong and am a favourite treat of the panda.

The Panda

I love snacking on bamboo. But I have to be careful, that cheetah looks hungry.

The Tiger

I am a smart hunter and will wait and wait. I look for the cheetah it's my meal of choice.



The Cheetah

I hunt and search for the great panda to eat. But I try to avoid that tiger. He has sharp teeth.

Find the Food Chain

The Acorn

I'm an acorn small and round lying on the forest ground. The squirrel will often snack on me. I'm a tasty nut you see.

The Squirrel

That tasty acorn is my treat. I really want to eat, eat, eat. But that sneaky fox he might find me. I'm his favourite snack you see.

The Wolf

I'm a wolf who hunts his prey. With my pack we hunt all day. With my team we dream of fox. When we catch one we lick our chops.

The Fox

I'm a fox with a red coat that's nice. I hunt for squirrels because they taste so nice. I watch for wolves who might eat me. They like to hunt and snack on me.

Food Chain Reflection

My Learning Goal for this lesson was

_____

_____

What I learned:

_____

_____

_____

_____

Proof

Food Chains

Decomposer

Role: _____

_____

_____

_____

_____

Examples: _____

_____

_____

_____

Producer

Role: _____

_____

_____

_____

_____

Examples: _____

_____

_____

_____

Consumer (Carnivore)

Role: _____

_____

_____

_____

_____

Examples: _____

_____

_____

Consumer (Herbivore)

Role: _____

_____

_____

_____

_____

Examples: _____

_____

_____

Consumer (Omnivore)

Role: _____

_____

_____

_____

_____

Examples: _____

_____

_____

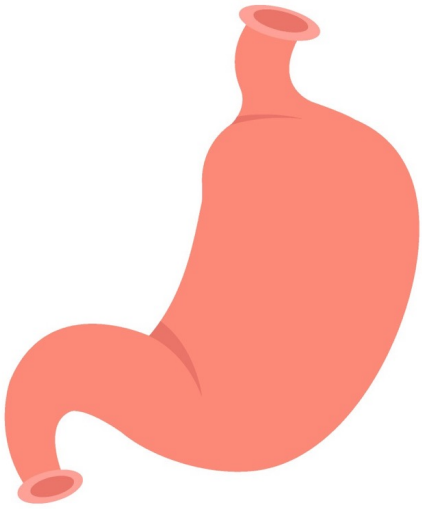
1) Fill in the petal with the correct answer. 2) Cut out around the outside and put glue on the back of the middle section.

3) Fold the petals into the middle. 4) Draw an example of each section in the food chain.

****

Copy the sentences below onto the correct petal above

They eat other animals.
They eat both plants and animals.
They eat plants.
They help to break down dead organic matter in the soil.
They take nutrients from the soil and energy from the sun.

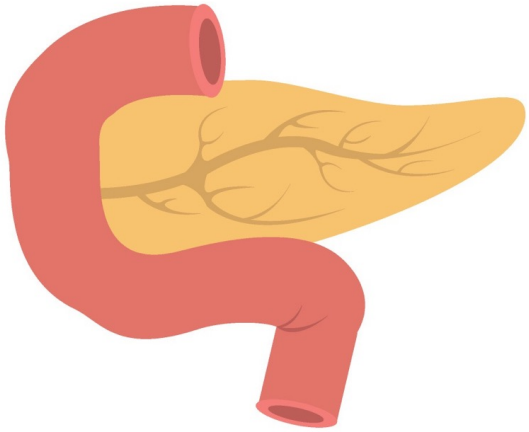


STOMACH

Your food ends up here after you have chewed and swallowed it. Once inside, it churns the food up and mixes it with acid. This breaks the food down in to a slushy liquid that is easier to digest.

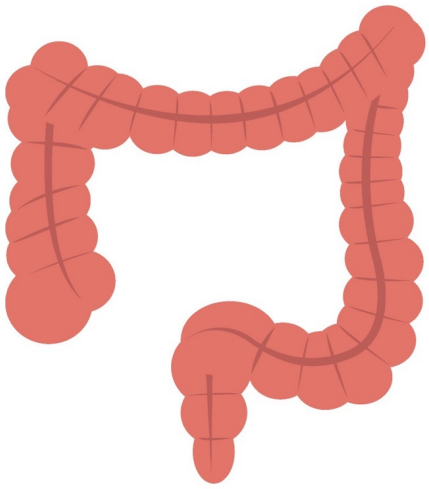
SMALL INTESTINE

Your food now enters this long tube that is coiled tightly in your abdomen. Once food arrives it's time for your body to take out the nutrients. With the help from bile from the liver and enzymes from the pancreas this organ is an expert at getting those nutrients out of your food and into your body to give you energy.



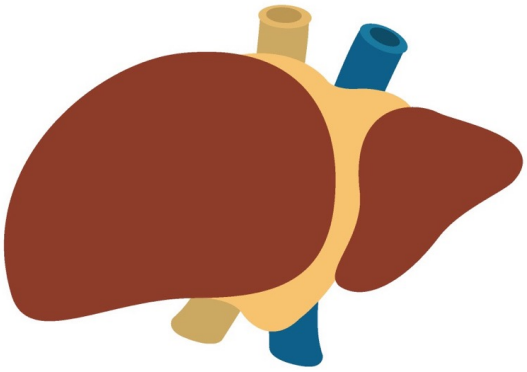
PANCREAS

This organ has an important job. It helps to regulate the sugars in our bodies. It makes special enzymes that help to break down the sugar in our food. It sends these enzymes to the small intestine where the sugar in the food is broken down. It also makes hormones called insulin and glucagon. Insulin helps us to take the extra sugar in our blood and turn it into energy. Glucagon tells our body to make more sugar when we don't have enough.



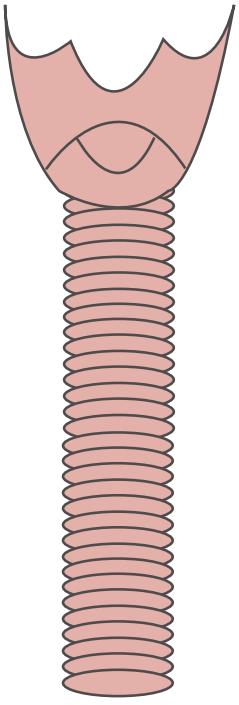
LARGE INTESTINE

Once all of the nutrients have been taken from the food you eat it enters this organ. Here water is taken out of your food and absorbed into your body. What is left is waste, or stuff that your body does not need anymore. We call this waste feces (poo). Feces is passed from the large intestine to the rectum so you can poop it out.



LIVER

This organ filters the blood in our bodies. It regulates the chemicals and transfers unwanted things out of our bodies through our urine and feces. Some of the waste is made into bile. Bile is transferred to the small intestine and helps break up the fats in our food and transport the waste from our blood out of our bodies. When the body breaks down carbohydrates, our bodies make glycogen. Glycogen gives our bodies a boost of energy when we need it and is stored in the liver.

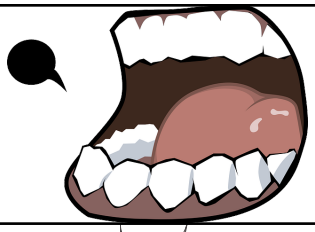
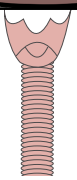


ESOPHAGUS

This organ is a long tube that connects your throat with your stomach. There are many rings of muscles that are stacked together to make this tube. When food passes through, these muscles push and squeeze the food down toward the stomach. This organ is often confused with the windpipe which sits in front of this organ. On either end there are flaps (sphincters) that prevent air from entering or food coming back up the wrong way.

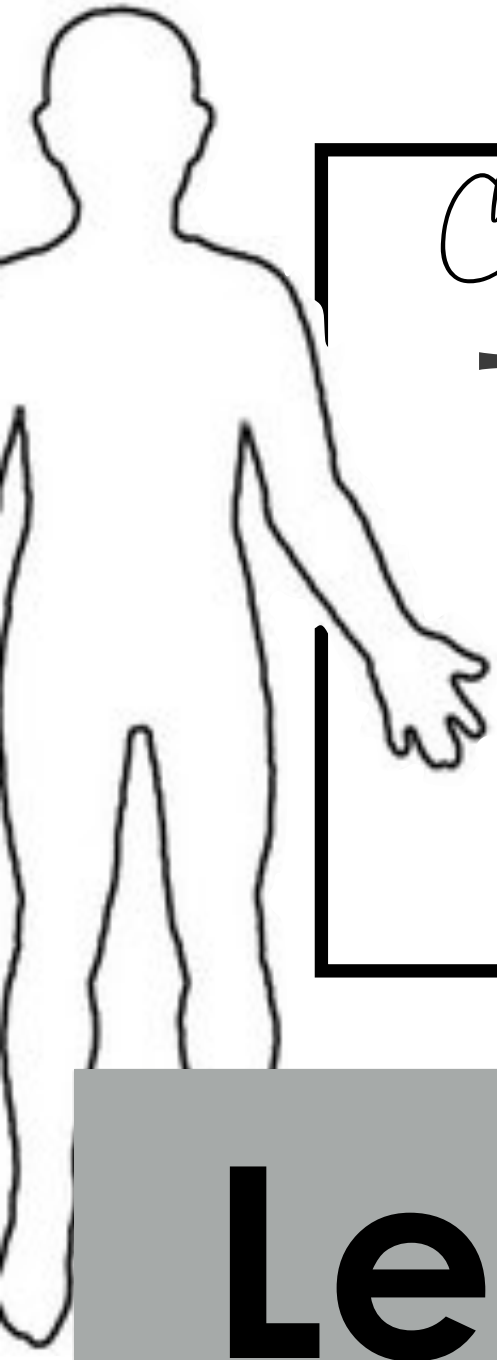
The Digestive System

Think of a piece of food that someone might eat. Imagine that you are that piece of food. Use this organizer to write a recount of your adventure through the digestive system. Make sure to include events with each of the organs shown. Don't forget the science! Use what you have learned so far to help you write.

	
 ESOPHAGUS	
 STOMACH	
 LIVER PANCREAS	
 SMALL INTESTINE	
 LARGE INTESTINE	
	

My Digestive Story

SCIENCE



Combined Grade

Teaching Plan

Habitats
&
Human Body

Lesson #4

Combined Lesson #4

	First Half	Second Half
Prep	***Prepare research baskets for students or access to technology to help them research.***	
Grade 4	Adaptable Animals and Specialized Species. Pose the following questions to students. Try to use familiar animals or animals in which students as a group have shown special interest. "How do animals handle changes to their environment". "Why do some animals only live in certain areas". "Why do _____ live in _____ habitat and not _____ habitat?	Students read about different animals and how they have adapted to their environment. Students will follow the Research guide to help them discover more about their animal. Provide students with "search stems" to help them find the information they are looking for
Grade 5	Students can read the task cards about the various diseases that affect the digestive system. They will match the task cards with the human digestive system diagram. Using the cut and paste or simply just labeling the diagram with the illness on the task cards.	In groups students will choose a condition or disease from the task cards. With the goal of keeping the digestive system healthy students will create a skit that informs others about the condition and what they can do to keep the digestive system healthy.
Notes	*<u>Grade 4 Lesson</u> - This is a key lesson to help students follow their interests and let them lead the focus of this lesson. Depending on your student groups students may show more interest in one animal over another. For this reason I have not included all animals. I have provided task cards for some of the most familiar animals but would encourage you to allow students to follow their own interests. Most animals specific books found in local libraries and many websites will have this information. This mini-inquiry will help students prepare for their final inquiry focus. You have been provided links to some sites that will help students to find the answers to their interests.* *<u>Grade 5 Lesson - Inquiry Tip</u> - Be prepared to follow the lead of your students. Your goal with this task is to allow students to take their new knowledge of the illness and inform others about ways to treat or prevent this from happening. A skit is a good, different way to show their learning but other options can be available. Transferring from Knowledge and Understanding to Application of Skills is the key here. I have had students want to develop a website, a skit, a video, a poster, a speech, or an interview with an expert on the subject as results of being open to what students suggest.*	

Animal Adaptations

How animals change to meet needs in the environment.

Have you ever wondered why a dolphin lives in the water and not on land? No, you probably have not. You know that an animal such as a dolphin belongs in the water. It doesn't have legs to walk on land. It has special characteristics that allow it to live in water such as fins, echolocation, and a snout that allows it to successfully eat life underwater.

Animals cannot live in every environment on Earth. Animals live where they are successful. Characteristics that make them special or unique and make it possible to live in their habitat are called adaptations. Over time, animals who live successfully in their environment continue to live and thrive. Animals that do not adapt, and change to live in that environment are not successful and die off.

Many features of an animal that are necessary for survival are characteristics that animals have adapted to be more successful in their habitat. Many animal adaptations are related to

- How they eat
- Who they eat
- How they move
- Body structure
- Their role in the food chain

Can you think of some animals that have special characteristics that make them uniquely successful in their habitat.

Camels - Live in deserts and can go a long time without water.
Polar Bears - Have thick skins that allow them to live in cold arctic areas.
Narwhals - Have a pointed horn that allow them to break though ice in arctic waters.
Zebras - Have stripes so that when they stand in their herds it is much harder for predators to tell one zebra from another.
Poison Dart Frogs - Have bright colours that warn predators of their poison which helps to protect them.

Woodpecker

Woodpeckers have many adaptations that make them successful in their many different habitats with wooded areas all over the world. To help it eat, the woodpecker has a special beak. Its beak is very strong and powerful. It is shaped like a chisel which makes it good at drilling in trees for bugs to eat. They also have a long sticky tongue that helps them catch the bugs in the holes they drill with their beaks. Many different species of woodpecker live in groups. This helps them to work together to be more aware of predators. Their body has adapted to help them peck wood. Their eyes close when they begin pecking wood. The bones in their head are spongy to protect their brains from the force of all of the hammering.

The polar bear is a strong and fierce bear that lives in the Arctic region habitat. Polar bears are good hunters and have many adaptations that help them catch their prey. They have strong muscles in their legs that allow them to be excellent swimmers and runners. They also have very sharp claws and teeth that help them to catch their prey and eat them. Because polars bear live in such cold weather conditions in the arctic they must have adaptations that allow them to stay warm. Polar bears have a thick layer of fat between their fur and muscles that acts as insulation to keep them warm. Another challenge that their habitat has is that it is covered in ice. Polar bears have fur on the bottom of their feet to help them grip the ice better. It also helps to keep their feet warm when walking on the ice. Polar bears use the sea ice as a platform for hunting their prey. However as the world is warming up this is changing the habitat of the polar bear as they are losing their ice platforms, making it hard to get to their prey. The polar bears will have to adapt to this change in their environment as they are now endangered and they are struggling to adapt to this environmental change.

Polar Bear

Camel

Camels are unique animals that have adapted well to the difficult environments that they live in. Camels live in the desert regions of the world. Their body has adapted in many ways to help them be successful in their environment. They have large feet which helps them walk better on the sand by spreading their body weight out on the sand which prevents them from sinking into the sand. Their bodies also need to be able to cope with very high temperatures in the desert. When humans get too hot, our bodies begin to sweat to help cool us down. Camels do not need to sweat, which helps them to save up that water in their bodies. Many people think that a camel's hump stores water. This is not true. A camel stores its body fat in the hump. This way that insulation is not stored around the body, making it easier for the camel to stay cool. Living in an environment with lots of sand, the camel needs to protect its eyes from that sand. The camel has bushy eyelashes and lots of hair in its nose to keep sand out.

Elephant

Elephants are well-loved animals that are native to habitats in Asia and Africa. Elephants have some of the most unique features for a large animal, and these features help them to survive in their habitat. Elephants are very large animals with short necks. Having trunks allows elephants to reach things that they wouldn't otherwise be able to reach such as water on the ground and food high in trees. Their trunks also have the ability to make noise which can be used as a signal between other elephants to communicate or warn others against predators. Even more elephant trunks can help to keep them cool by spraying water or dust on their bodies to help keep them cool. Elephants have very large tusks. These are an important feature. These tusks help elephants to scrape the bark off of trees so that they can eat it. They also help elephants to dig up water and nutrients underground. Another special feature of the elephant its large ears. Elephants, like camels, do not sweat so their large ears have adapted to help fan them to keep them cool. Elephants that live in African Grasslands habitats have larger ears then Asian elephants that live in jungles. Larger ears help cool off in the hotter temperatures. Elephants are great at adapting to changing environments but can be destructive when changing their environment to suit their needs. As a result they often interfere with human development and crops, which can make them a nuisance to local farmers.

Sharks are celebrated predators of the ocean. They are feared and loved by many people. Sharks have many adaptations that make them successful ocean predators. Sharks are able to move quickly through the water, making it easy to catch and eat their prey. Their bodies are shaped like an arrow at both ends, helping them to move fast and quietly through the water. Sharks do not have bones but cartilage like in a human nose. This makes them lighter, flexible, and quicker in the water. Sharks are also great hunters because they are good at sensing their food. Their snouts can sense changes in the electric field that is created underwater by living things. Sharks use the sensors in their snout to sense very small changes in this field to find their prey. This is helpful in dark waters or murky waters where they cannot rely on their vision to help them see their prey. This is helpful in dark waters or murky waters where they

Shark

cannot rely on their vision to help them see their prey. Sharks also have very sharp teeth that help them eat their prey. There are many different types of sharks and many of them have different shaped teeth depending on the type of food that they eat. Sharks also have teeth that grow back when they fall out. Their body is perfectly camouflaged so that looking at them above you in the water, they match the light grey/blue sky and looking at them below you in the water, their darker colour blends in with the colour of the deeper, darker ocean.

Mouse

A mouse is a very interesting animal. Sometimes it makes people scream and gives them the creeps while other times people have it as a pet. Mice are very adaptable animals, which often makes them pests to many people. Mice adapt easily to eating in different environments. They are not picky eaters. Mice will eat whatever they can find. They eat and forage about 15-20 times per day. This is why they can be so destructive and quite the nuisance to people. Mice that live in forests will eat grains and seeds and mice that live near humans will eat leftovers and garbage. Mice do not live for a very long time so they have adapted to having many baby mice very quickly. This helps to grow their population very quickly. Mice also have the ability to change the thickness and colour of their coat to suit the environment that they are living in. This is helpful when living in changing climates with winters and summers. Although mice don't really like living in cold temperatures, they have become very good at finding safe warm places to build their nests. Sometimes that even means in your homes. They will seek out just about anything to help them make their nests for their many babies. This can mean that in a home they can be very destructive. Mice live in families. They work together to forage for food near their nests. They often stay in one area close to their nests. They are very sensitive to changes in their environment, quickly noticing changes that help protect them from predators. Their whiskers are very helpful with this and help them feel and sense these small changes.

Animal Adaptations

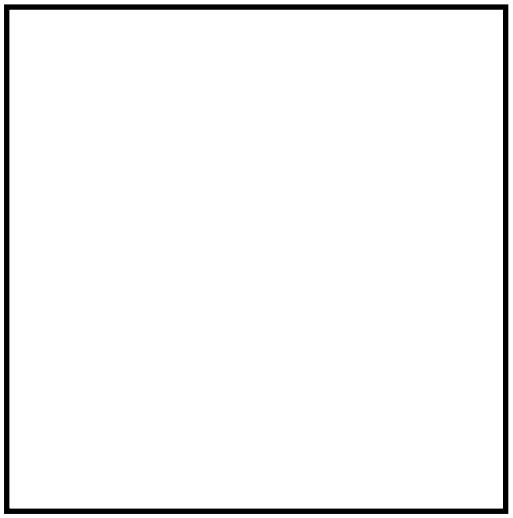
My Animal Research

My animal is: _____

My animal's habitat is: _____

My animal's role in the food chain is:

Predator Prey Both



My Animal Adaptations

Adaptations that help my animal eat:

_____

_____

_____

_____

Adaptations that help my animal move:

_____

_____

_____

_____

Body adaptations that help my animal survive in its habitat:

_____

_____

_____

_____

Diabetes

Diabetes is a disease that affects how the body uses sugar. This sugar is called glucose. Glucose gives our body energy. When you eat food the sugars in the food get taken out and go into your bloodstream. The glucose needs help to get from your bloodstream to your body's cells. This is where the pancreas helps out. The pancreas makes a hormone called insulin. Insulin helps the glucose get into the cells. That is how your body uses the glucose to get energy. When someone has diabetes the pancreas cannot make insulin or the insulin that it makes doesn't work. Because the sugar cannot leave the blood stream to get into the body's cells, the blood has too much sugar in it. When this happens people get incredibly sick. When someone has diabetes they often have to inject insulin so the body can process sugar.

Food Poisoning

Food poisoning is caused when you eat food that has bacteria, parasites, and viruses in it that make you sick. These are most often found in undercooked meats and eggs or food that comes in contact with these. They can also grow on food that sits out too long and begins to rot. Food poisoning is often not serious and goes away in a few days. These germs get onto foods in a few ways. When meat is processed before it gets to the grocery store it could have come in contact with bacteria from an animal's intestines during processing. If foods like vegetables and fruits are washed on farms with contaminated water, these germs will stay on the food. Finally, improper food handling is another common cause of food poisoning. Unwashed hands, using contaminated cooking tools, or not keeping raw meats and other foods separate can lead to food poisoning. Careful food preparation will prevent most instances of food poisoning.

Celiac Disease

When someone has celiac disease their body cannot digest gluten. Gluten is found in many grain foods like bread, and cereal. It is a protein that is found in wheat, rye, and barley. Most people can eat gluten with no problem. However when people with celiac disease eat gluten their immune system has a bad reaction. In everyone's small intestine there are finger-like hairs on the inside of the intestine that are so small they can only be seen by a microscope. These are called villi. These villi have an important job. They take the nutrients out of your food and pass them to the rest of your body. When someone with celiac disease eats gluten, the immune system that usually helps to protect the body from sickness begins to attack the villi and destroy them. When this happens the villi cannot pass the valuable nutrients to the body. These nutrients are essential to a healthy body so people with celiac disease need to avoid gluten to stay healthy.

Acid Reflux: GERD

Acid reflux means that acid from the stomach gets into the esophagus. When you eat foods the food is squeezed down your esophagus, passes through a sphincter, and goes into your stomach where acid begins to break the food down. If your sphincter opens at the wrong time then the acid from your stomach will enter into your esophagus. Most people will suffer from this condition at some point. But many may not even know it is happening while others will have what is commonly known has heartburn. Sometimes when this happens often and severely it becomes a disease. This is called GERD. GERD stands for gastroesophageal reflux disease. People with GERD have heartburn which is a burning feeling in your chest, neck, and throat. Some foods make GERD worse so treatment often includes diet changes and medicines.

Laryngitis

Laryngitis happens when your vocal cords become swollen so they don't work properly. This means that you cannot talk like you normally do. Laryngitis can come from too much talking or yelling, allergies, smoking, or germs. At the top of your windpipe, you have a voice box. Inside your voice box, you have vocal cords. When you talk the vocal cords come together, which causes sound when air passes through them. This is what allows you to say what is on your mind. When someone gets laryngitis they need to rest their voice and drink plenty of fluids. Sometimes using a humidifier, which makes the air more moist, helps your vocal cords heal.

Crohn's Disease

Crohn's disease is a type of inflammatory bowel disease. When the intestines become inflamed these are often caused by ulcers. Ulcers are breaks or tears in the lining of the intestines. These cause pain and bleeding. Crohn's disease most often happens where the small intestine and large intestine meet. However it can occur anywhere in the digestive tract. In a person with Crohn's disease the affected part of their bowel is extremely swollen and inflamed. People with Crohn's will experience stomach pain, diarrhea, fever, and weight loss. It can be caused by environmental factors, germs, and family history. There is no cure for the disease, which means that there are no medications or surgeries that can help to cure Crohn's disease. People with Crohn's need to mange the symptoms of the disease and try to prevent it from getting worse.

Gastroenteritis

When someone has gastroenteritis they are most likely vomiting and experiencing diarrhea. This is most often called the stomach flu. This is very different from another "flu" which is caused by influenza. People can get gastroenteritis from someone else who is sick, contaminated food, or unwashed hands after bathroom use. Gastroenteritis is caused by different viruses: rotavirus and norovirus. It can also be caused by bacteria such as E.Coli, and Salmonella. These are most often found in uncooked meats. Due to the most common symptoms of gastroenteritis (vomiting and diarrhea), this condition affects both the stomach and the intestines. The risks to people with this disease are most often dehydration because the body is quickly getting rid of all liquids and does not have time to absorb the necessary liquids to function properly.

Jaundice

Jaundice is a condition where the body has too much bilirubin. Bilirubin is made when the body breaks down old blood cells. The cells and the bilirubin are removed from the body by the liver. When a person is affected by jaundice, their skin turns yellowish and so do the whites of their eyes. In babies, jaundice is a common problem that happens after a baby is born. Newborn babies have extra red blood cells and their liver is slower in the first few days at removing the bilirubin. In babies, this is normal and goes away after a few days or weeks. Jaundice happens in adults too. When there is damage to the adult liver it cannot clean the blood of the bilirubin. There are many conditions that can cause liver damage including hepatitis, alcohol-related liver damage, blocked bile ducts, pancreatic cancer, and some medicines. Jaundice in adults is usually a sign that something more serious is affecting the body.

Diabetes	Food Poisoning	Celiac Disease
Acid Reflux: GERD	Laryngitis	Crohn's Disease
Gastroenteritis	Jaundice	

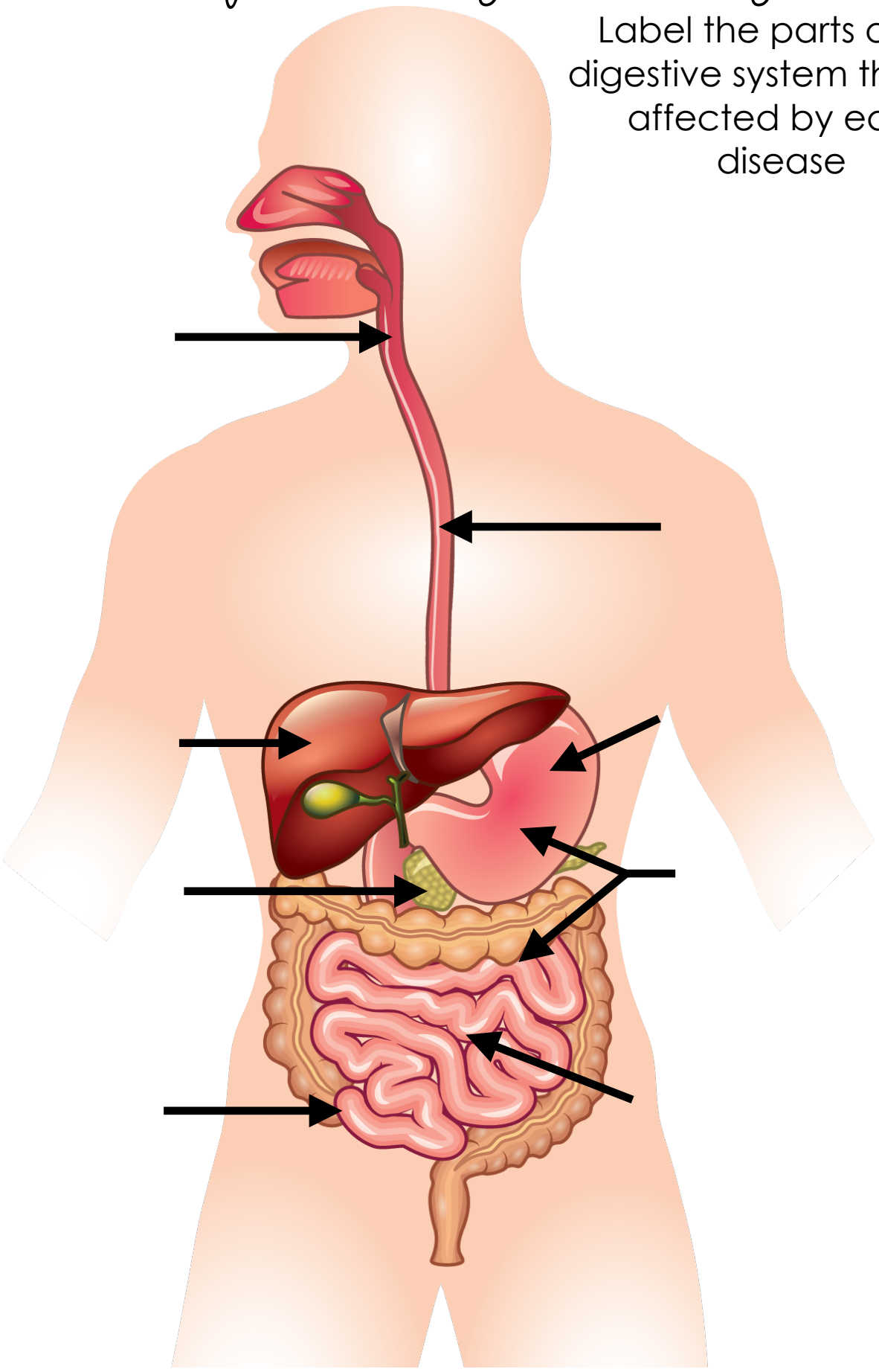
Diabetes	Food Poisoning	Celiac Disease
Acid Reflux: GERD	Laryngitis	Crohn's Disease
Gastroenteritis	Jaundice	

Diabetes	Food Poisoning	Celiac Disease
Acid Reflux: GERD	Laryngitis	Crohn's Disease
Gastroenteritis	Jaundice	

Diabetes	Food Poisoning	Celiac Disease
Acid Reflux: GERD	Laryngitis	Crohn's Disease
Gastroenteritis	Jaundice	

Diseases of the Digestive System

Label the parts of the digestive system that are affected by each disease



SCIENCE QUIZ REVIEW

grade five

Human Digestive System

1) write out the functions of each of the following organs in the human digestive system
   a) esophagus
   b) stomach
   c) liver
   d) small intestine
   e) large intestine
   f) pancreas

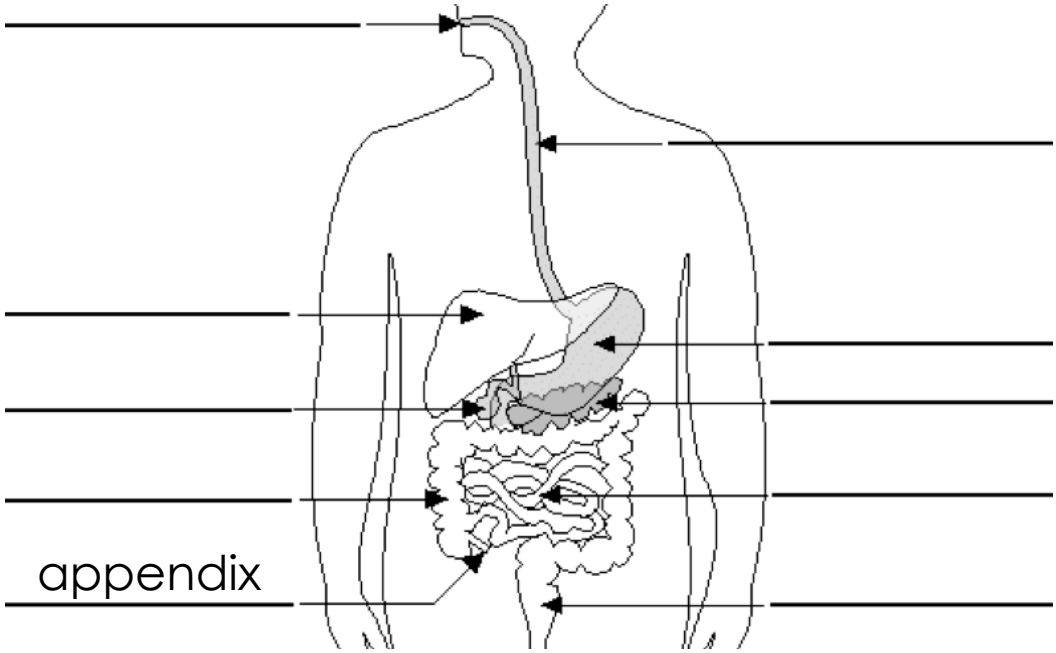
2) Describe what happens to a piece of food as it passes though all of the organs of the digestive system. Make sure you include the involvement of all of the organs in the list above.

3) Identify how these diseases affect the organs of the digestive system

- Diabetes
- Celiac Disease
- Acid Reflux (GERD)
- Food Poisoning
- Laryngitis
- Crohn's Disease
- Gastroenteritis
- Jaundice

4) Identify how two organs work together to make the digestive system work

5) Label the organs of the digestive system



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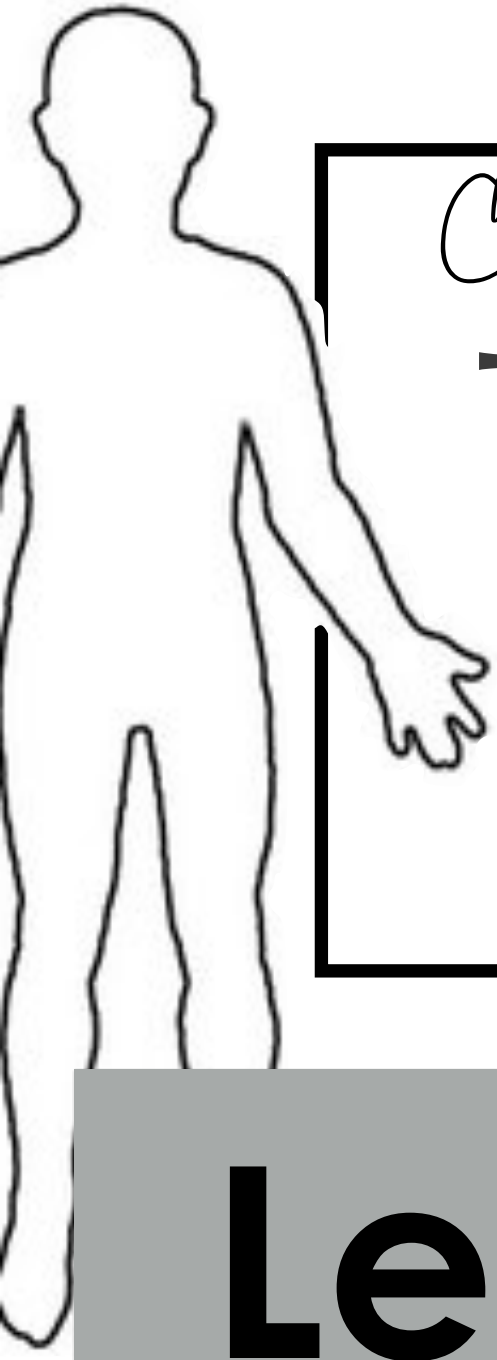


Combined Grade

Teaching Plan

Habitats
&
Human Body

Lesson #5

Teacher Notes

Guide to the Following Grade 4 Lessons

Dear Teacher,

The next few lessons for the Grade 4 students can be completed in multiple ways depending on your student's familiarity with inquiry. This unit is normally done either first or second in the school year so this means that students need much more support in a guided inquiry. For ways to structure the centres of the following lessons please see the centres ideas at the end of this three-page introduction.

Student Skills	Teacher Comfort Level
• Independent research skills: both text and internet research skills. • Independent work skills. • Creative and flexible thinking skills. • Leadership skills. • Strong group work skills.	• Beginner - teacher wants a high degree of structure and sequence to lessons. The teacher is the leader. • Comfortable - Teacher wants a mix of student voice and choice within a structured environment. The teacher is the guide. • Experiences - Teacher releases control of learning to students and acts more as a support.

Beginning in Inquiry

If your students are beginners I would suggest that you use a gradual release model and look at the first habitat as a modelled inquiry. Students will watch as you look at the research provided and use it to extract information. Purposefully showing students that the information that they need is interspersed in the reading and not laid out exactly as they need it is an important skill. Working through the page in the following sequence is important for students to see you do. Be very explicit with each step you make and why so that they can see how you do it with a hope that they can replicate this.

- **Step 1:** Look at your research notes guide to remind yourself what you are looking for. Then skim and scan the article for key-words to see if this article has the correct type of information. (It does but this is an important step especially if you are going to have them complete independent research on the internet.)
- **Step 2:** Read the whole article through one time without making notes.
- **Step 3:** Work sentence by sentence and ask yourself if this information belongs in your organizer. If it does, show them how to write this in point form notes without copying word for word out of the text. (Highlight that copying word for word is considered plagiarism. I tell my students that the author does not own the fact but does own the way they put the words together in a sentence.)
- **Step 4:** Record the information in your own words on the organizer.

Teacher Notes

Guide to the Following Grade 4 Lessons

As you move forward through the remaining centres, gradually release your control on the centres moving from modelled to shared inquiry where you do it together with your students to small groups to independent work. As students can do more work with partners you can also introduce adding in additional research from other texts and the internet. When introducing internet research talk to your students about search terms and how to use Google. To get started I would recommend using the kids version of Google - KIDDLE.

Comfortable with Inquiry

When your students are comfortable with research skills then you can approach these following activities as rotating centres. Students in groups can work at one centre at a time. Groups can rotate through the different habitats learning about the various features completing the research guides. If you package the research pages together then students can complete these as a booklet. Additional research can be obtained through print books and internet sources.

Experienced with Inquiry

When your students are more experienced with inquiry then these centres can be done as an independent study. Students can complete more in-depth research on one or two of the habitats then share their learning with their peers to teach others. Students can choose the habitat in which are most interested. Included in this could be extensions of looking specifically at a food web/chain from this habitat and researching these animals and their relationship to the environment.
Students or teachers at this stage in their inquiry journey can use the resources provided to form their own project or goals for inquiry. More control about learning goals and aims of student learning are led by the students and supported by the teacher. These authentic learning tasks will be more engaging for students but both the teacher and the student group will need to be ready and experienced with this type of learning before beginning. This for many is the goal but I would caution teachers from jumping right to this stage. Inquiry learning is a process and the necessary research skills, independent work skills, and learning skills must be present before being able to get to this stage.

Inquiry is a journey and wherever you are on your own inquiry journey as a teacher is an okay place to be. Start with one inquiry task and with every new experience release a bit more control to students letting them lead. This happens over time not over night.

Teacher Notes

Guide to the Following Grade 4 Lessons

The following are suggestions on how to structure the learning in the classroom. Many of these can be used at any stage of inquiry depending on the amount of control released to students or teacher-led.

1) **Student Inquiry Centres** - With an internet-connected device, link to a LiveBinder, and the provided articles. Centres can be set up and students can choose which centre to go and learn from each week. This is easily differentiated as you can establish individual student goals as to how many habitats that they can explore.
2) **Genius Hour Action Plan** - You can have students use the articles provided as a jump-off point for students to learn about a few selected habitats of personal interest. They can then explore these habitats more in-depth looking at more specifics such as studies of animals within the habitat, food chain, threats, etc. Students can eventually develop an action plan to determine how to protect this habitat or an animal within the habitat.
3) **Traditional Centres** - Students can use the articles provided to conduct simple research on a variety of habitats and create a mural of the world with a few of the various habitats and features on it.
4) **Carousel** - Students can learn about 2-3 different habitats using the articles provided and any other additional resources contained within the school. These habitats will become their expert habitats. Students can then be responsible for teaching others in their classroom about their expert habitat areas.

As you can see there are many possibilities that this unit allows for. The layout of the lessons here are not necessarily the teaching approach that might work best with your students. The materials that you will require to get started are all contained in this unit. It is highly recommended that you provide students, with other data sources as well although this is not always necessary.

This collection of lessons are designed to support student inquiry. Teachers are not expected to gather all of their resources for students. Students need to take ownership of their own learning and assist in guiding their students learning.

The following centres lessons and materials are provided for traditional centres or inquiry centres. Please modify your delivery method to suit the needs of your students.

Grade 4 Centres

Use this guide to help you organizer your centres for students.

Set Up:

1. Gather research materials for student research centres. Research can be gathered using the resources in the LiveBinder. Each resource website can be printed or used digitally for student use. Additional research can be found as a bonus in bundled purchases or can be purchased separately from my TPT store: Grade 4 - Habitat Research Articles. Please check your download file prior to purchasing this additional unit. Additionally you can use other resources found in textbooks, or the library.
2. Put your research into research baskets or containers.
3. Attach the group labels to each bin.

Grouping Students

Group students in mixed ability groupings. Ideal groups are of 4-6 students. Students follow the centre rotation guide to move from each centre per lesson.

First Lesson

A sample research page is provided in this resource as a guide for teachers. Use this to help you model for students how to use and complete the organizer. Model this lesson for students to show them how to research. This can also be done cross curricular during your language program.

During Centre Rotations

When working with the Grade 4s on their centres meet with one or two groups each for about 10-15 minutes. Check in with them about their research and ask them what they have learned and check their research progress. Identify students that may need additional research support or reteaching.

Duration

These lessons can be completed in one period or extended over two 50-minute periods. Timing of these lessons varies between groups of students, subject allotments per week, and classroom time-table. Use your professional judgement as to how much time each lesson will take for you and your students.

Grade 4 Centres
Rotation Schedule

	Centre Lesson #1	Centre Lesson #2	Centre Lesson #3	Centre Lesson #4	Centre Lesson #5	Centre Lesson #6
Polar Region Habitats	1	2	3	4	5	6
Desert Habitat	6	1	2	3	4	5
Tropical Rain Forest Habitats	5	6	1	2	3	4
Ocean Habitats	4	5	6	1	2	3
Coniferous Forest Habitat	3	4	5	6	1	2
Grassland Habitat	2	3	4	5	6	1

Notes

**This rotation schedule will still work with less than 6 groups. If your students have more experience with research they can choose their own rotation based on interest. If you have less experienced students you can use more guidance with research and do this together. **

**The research at this stage is just building knowledge and understanding of the various habitats and developing research skills. Students will choose a habitat and look into this in more detail later. **

Animal Habitats Centres

Polar Region Habitat

http://goo.gl/5dd8gg

Animal Habitats Centres

Desert Habitat

http://goo.gl/yS5Lu6

Animal Habitats Centres

Tropical Rainforest Habitat

http://goo.gl/jJ2uyh

Animal Habitats Centres

Ocean Habitat

http://goo.gl/igVXqa

Animal Habitats Centres

Coniferous Forest Habitat

http://goo.gl/tx1Dai

Animal Habitats Centres

Grassland Habitat

http://goo.gl/NBBRzo

Combined Lesson #5

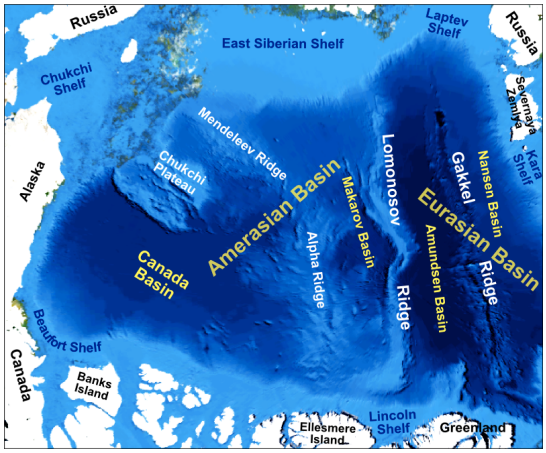
	First Half	Second Half
Prep	***Prepare research baskets for centres (devices or text-based reading). Gather Materials for Grade 5 Experiment.***	
Grade 4	**Modelled Centre** Life in the Ocean: The Arctic Ocean Model for students how to extract information from a research article or website to find the information that they need. Students will need to focus on Skimming and Scanning, Point Form/Jot Notes, and avoiding plagiarism. To Link to Digital Research please have students follow the QR Code to the LiveBinder.	**Centre Day #1** Students will complete their research organizers based on the research they gathered in their groups. You may choose to use one of the two research organizers provided. Ensure students have a think-pair-share to share the information that they found with the others from their group. Students will put their research organizers into their notebooks.
Grade 5	Students read the article about the lung and then complete the organizer independently.	Talk about the lung and relate it to a balloon. The lungs fill up with air like filling up a balloon. The balloon inside the bottle is a lobe, the balloon at the bottom of the bottle is the diaphragm, the bottle is the chest and rib cage. Watch the video tutorial together with students. **Materials Needed Include:** 2 balloons, scissors, straw, plastic bottle (pop bottle), modelling clay, pencil, and an elastic. https://www.youtube.com/watch?v=CBv2BqqAydE Have students create their own lung systems in a group. Lung model can be done together with the teacher creating the model or students can work in groups to create the model.
Notes	***This lesson may take more than one period for both grades. It is suggested that you do "first half" with both groups on day one and then "second half" with both groups on day two.***	

Life in the Ocean

Arctic Ocean Habitat

Polar habitats have colder waters and the marine life that live there, must adapt to living in colder climates.

The Arctic Ocean is almost permanently covered by ice. It is surrounded by land from Canada, Russia, and Greenland. The Arctic Ocean is made up of two main basins of water. A basin is like a very large bowl that holds ocean water. These basins sit between two under water mountain ranges on the ocean floor. Inside these two large basins there are also smaller basins.



Arctic Krill feeding on ice algae

Phytoplankton are a type of plant and they are the producers in this food chain. In the Arctic phytoplankton is frozen inside the ice. In the early spring it groups together to make ice algae. This ice algae phytoplankton turns carbon dioxide in the water into sugar. It uses photosynthesis with help from the summer sun to make the sugar for the other ocean animals. Ice algae only grows in the summer. Ice algae does not grow in the winter because there is not enough sunlight. When the summer warms up the ice the ice algae will fall off the ice and sink to the ocean floor where it is eaten by other marine life, like crabs.

Beluga whales are an example of a species that live in polar waters. These whales have adapted well to life in the icy ocean. They do not need a dorsal fin because without a dorsal fin the beluga can easily move around the ice covered water. Belugas also have a thick layer of blubber to help keep them warm in the cold water.

Beluga Whale

There is a lot that we don't know about this Arctic Ocean habitat. But, human activities, climate change and melting ice will have huge impacts on the ocean life in this fragile habitat

Polar Region Habitat

http://goo.gl/5dd8gg

Use the QR code to Link to Student Research

Land and Weather

Human Impact

Animals and Adaptations

Animal Adaptations

Land and Weather

Human Impact

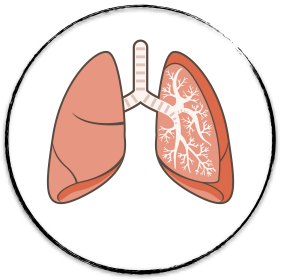
Animal Adaptations

The Polar Region Habitat

http://goo.gl/5dd8gg

Follow the QR code to link to the research for this topic. Fill out the foldable with your research. When done cut out both shapes around the solid black line. Fold the flaps in on the dotted line. Glue the middle section in your notebook. Glue the title on the front of the flaps.

The Lungs
and the breath we take



The lungs are a vital part of our body. We need oxygen to live. So it is our lungs that get that oxygen from the air around us into our body. The air around us is made up of two main parts, oxygen and carbon dioxide.

We breathe air into our nose or mouth. Then it goes into our **trachea**, also know as a windpipe. The trachea is next to the esophagus. But instead of going into the stomach, the trachea sends air into the lungs.

We have two lungs. These are called **lobes**. We have a right lobe and a left lobe. In each of our lobes are a series of branches that look like a tree.

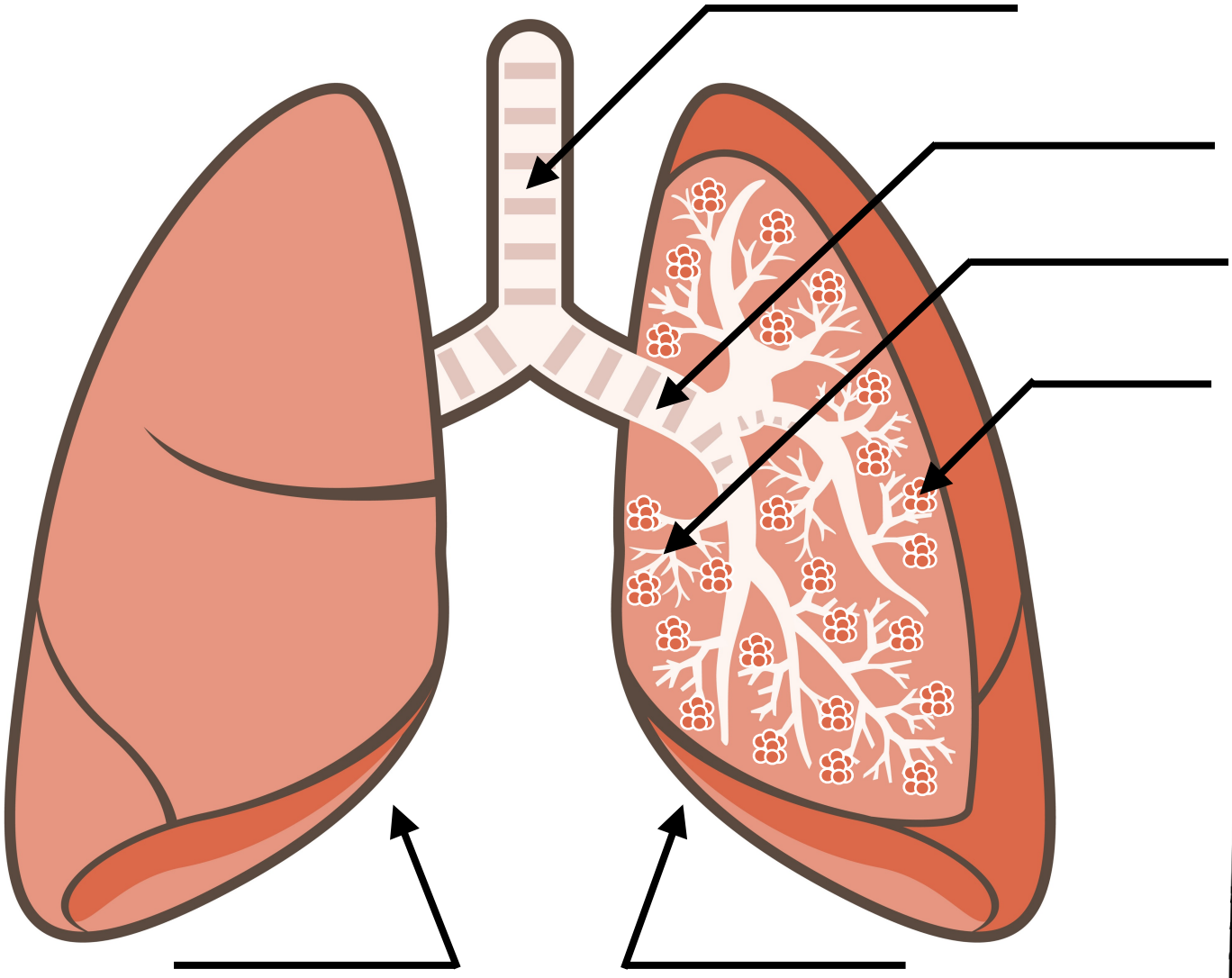
When the air enters the lobes of our lungs it first enters the **bronchus**. The bronchus is like the trunk of a tree. It is the widest part of the branch system in our lungs. The bronchus divides into main branches. The branches of the bronchus are lined with cartilage to hold their shape. Cartilage is the same stuff that the outside of your ear is made of. There is mucus in this part of the lungs too. Mucus is pushed around by little hairs. The mucus helps to clear the lungs of dirt, and germs that may get into your lungs. That is why when you are sick there is more mucus in your lungs.

As the branches get smaller they are called **bronchioles.** Unlike the bronchus, the smaller bronchioles are not lined. Instead, they are smooth and stretchy. When you need more oxygen in your body, like when you are exercising, your bronchioles can stretch and become wider so more oxygen can get to your body. Or they can shrink when you are breathing in bad or polluted air.

Eventually at the end of the bronchioles are the **Alveoli.** These are air sacs at the end of your lungs These air sacs take the oxygen from the air and sends it to the blood through the **capillaries.** The alveoli and the capillaries are connected through a very thin wall that lets the oxygen move between them.

The Lungs

Label the Lungs with the Words Below



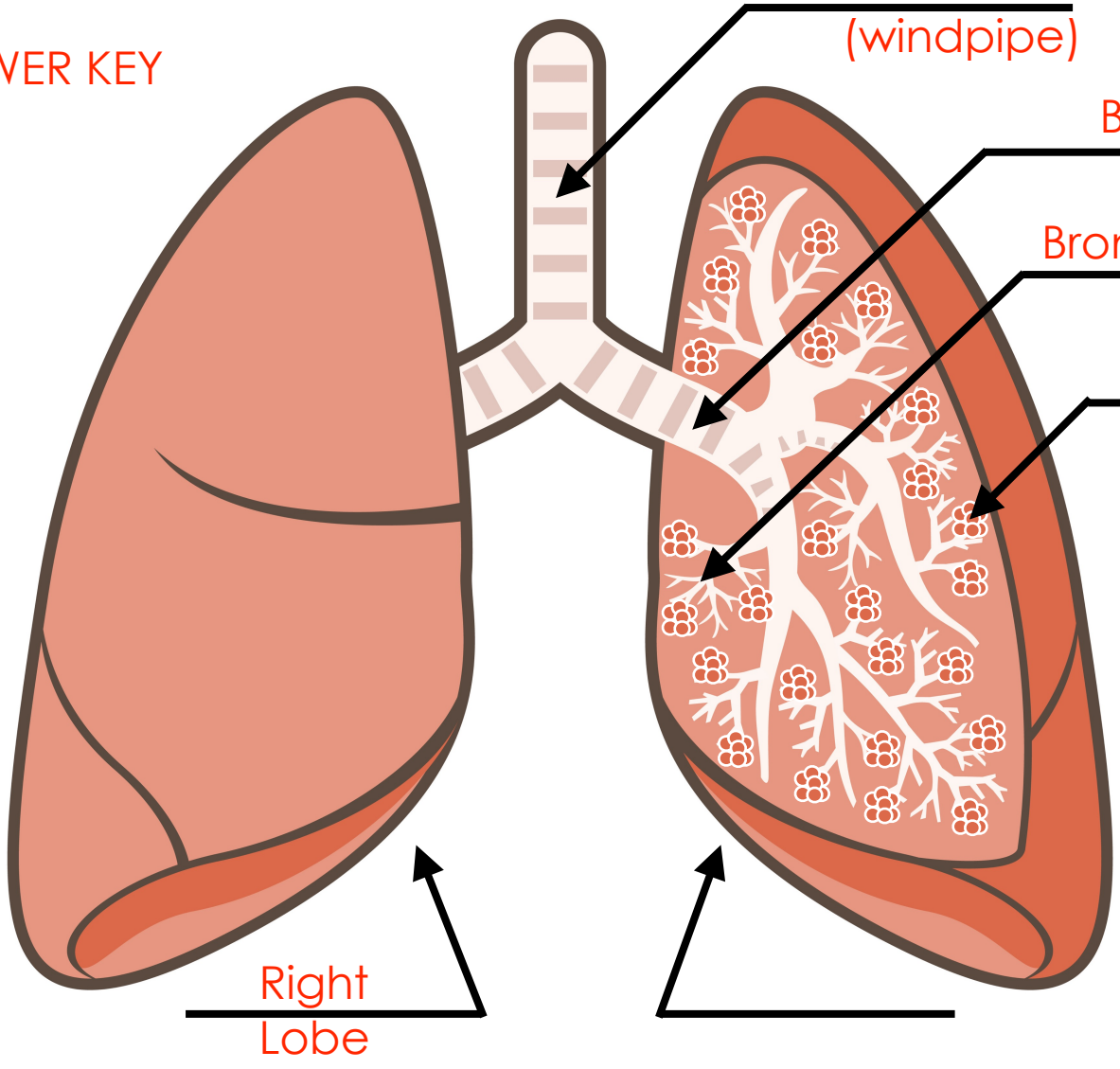
Trachea (windpipe) | Bronchioles | Right Lobe | Bronchus | Left Lobe | Alveoli

Describe how the model of the lungs you made helps you to explain how your lungs work:

The Lungs

Label the Lungs with the Words Below

ANSWER KEY



Trachea (windpipe) | Bronchioles | Right Lobe | Bronchus | Left Lobe | Alveoli

Describe how the model of the lungs you made helps you to explain how your lungs work:

It helps me see how my lungs fill with air.

Model of the Lung

Teacher Notes

In the model of the lung you will need the following materials.

- 2 Balloons
- Scissors
- Elastic
- Plastic bottle
- Modelling clay
- Pencil
- Straw

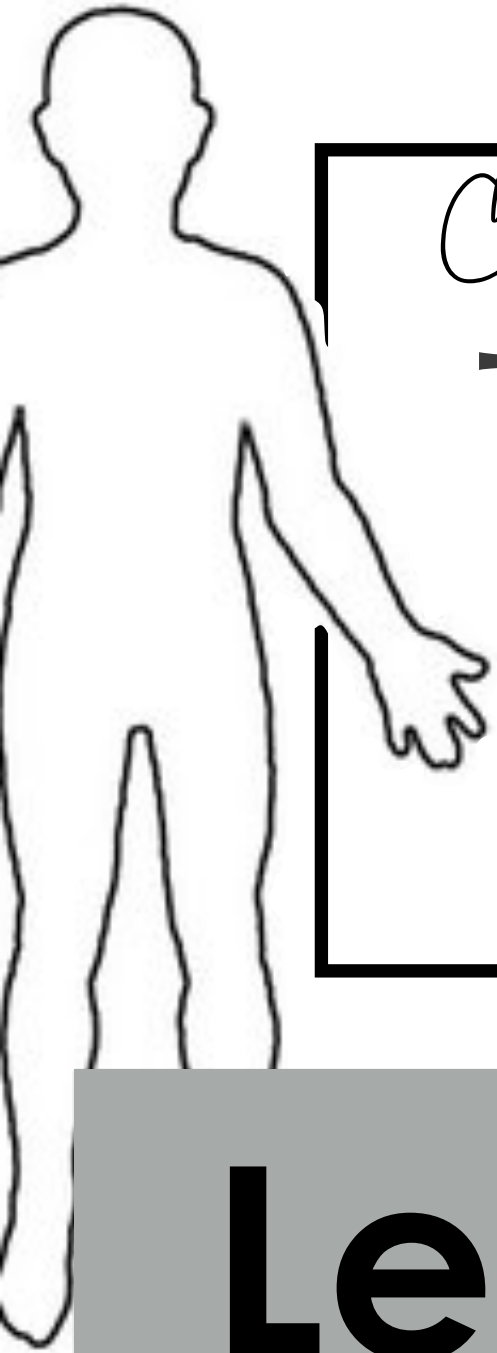
In this model it is important for you to relate the parts of the model to the real parts of the lung.

The bottle represents the rib cage that protects the lungs inside the chest. The balloon in the bottle represents one of the lobes of the lung. The straw is the trachea that allows air to enter the lung.

Talk about the inside of the lung and how it looks like trees.

- The trunk in each lobe is called the Bronchus - it transfers air from the trachea into the lungs so eventually oxygen can be extracted.
- The Branches are called the Bronchioles - These connect the alveoli and bronchus. They narrow as they get closer to the air sacs of the alveoli.
- The leaves are called the Alveoli (or air sacs) - oxygen from the air is absorbed into the blood. (Just like how leaves absorb the sun for the tree.)

SCIENCE



Combined Grade

Teaching Plan

Habitats
&
Human Body

Lesson #6

Combined Lesson #6

	First Half	Second Half
Prep	***Students will need access to research for their habitats research centres either through research baskets or digital access or both.***	
Grade 4	**Centre Day #2** Various Habitats - Follow Rotation Schedule **Student Research Time** Students will read and gather information on their habitat for this cycle of research. Students will work together to share information as they complete their research from the research baskets. Students will record their information on one of the graphic organizers.	**Centre Day #2** *Meet with Teacher* 1-2 groups of students will meet with the teacher about their research, share what they have learned, and check in on research skills. Make notes of any students who may need additional support on researching skills or catch-up time. *Student Collaboration:* Students not meeting with the teacher will either continue researching or collaborate with another students to talk about what they have learned and share the information they have gathered with peers. Students will put their research organizers into their notebooks.
Grade 5	Knowledge Building Circle Have students share their models of the lungs that they created in the last lesson and compare that to the article and diagram that they labelled. Which part of the model represents each part of the lung? Relate this back to how the lungs in our body work.	Students will complete the reflection activity on the parts of the lungs. They can create the simple reflection of the more detailed foldable of the lungs. Students can store their independent reflection or foldable in their notebooks. Additionally why not use both the foldable and the interactive notebook activity. The simple reflection page would make a good review for student homework.
Notes		

Tropical Rainforest Habitat

Use the QR code to Link to Student Research

http://goo.gl/jJ2uyh

Land and Weather

Human Impact

Plant and Animals and Adaptations

Animal Adaptations

Land and Weather

Human Impact

Animal Adaptations

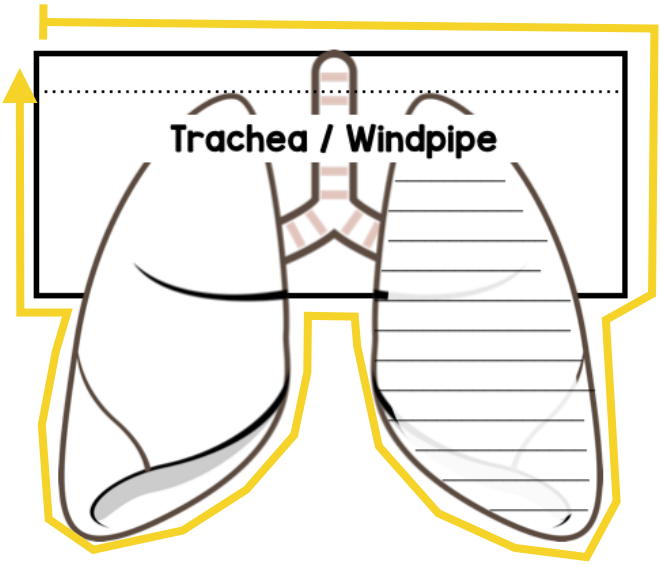
Tropical Rainforest Habitat

http://goo.gl/jJ2uyh

Follow the QR code to link to the research for this topic. Fill out the foldable with your research. When done cut out both shapes around the solid black line. Fold the flaps in on the dotted line. Glue the middle section in your notebook. Glue the title on the front of the flaps.

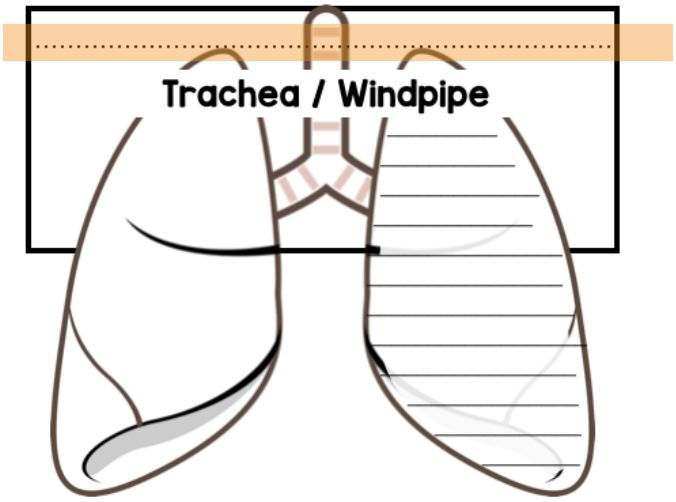
Lung Foldable Instructions

Cut around the outside of the shapes following the line. You will cut the box and the bottom part of the lungs. Cut out all four parts of the foldable.



Fold all of the four pages on the dotted line. Line up the edges of each page and lay them on top of each other in the following order

1. Trachea / Windpipe
2. Bronchus
3. Bronchioles
4. Alveoli

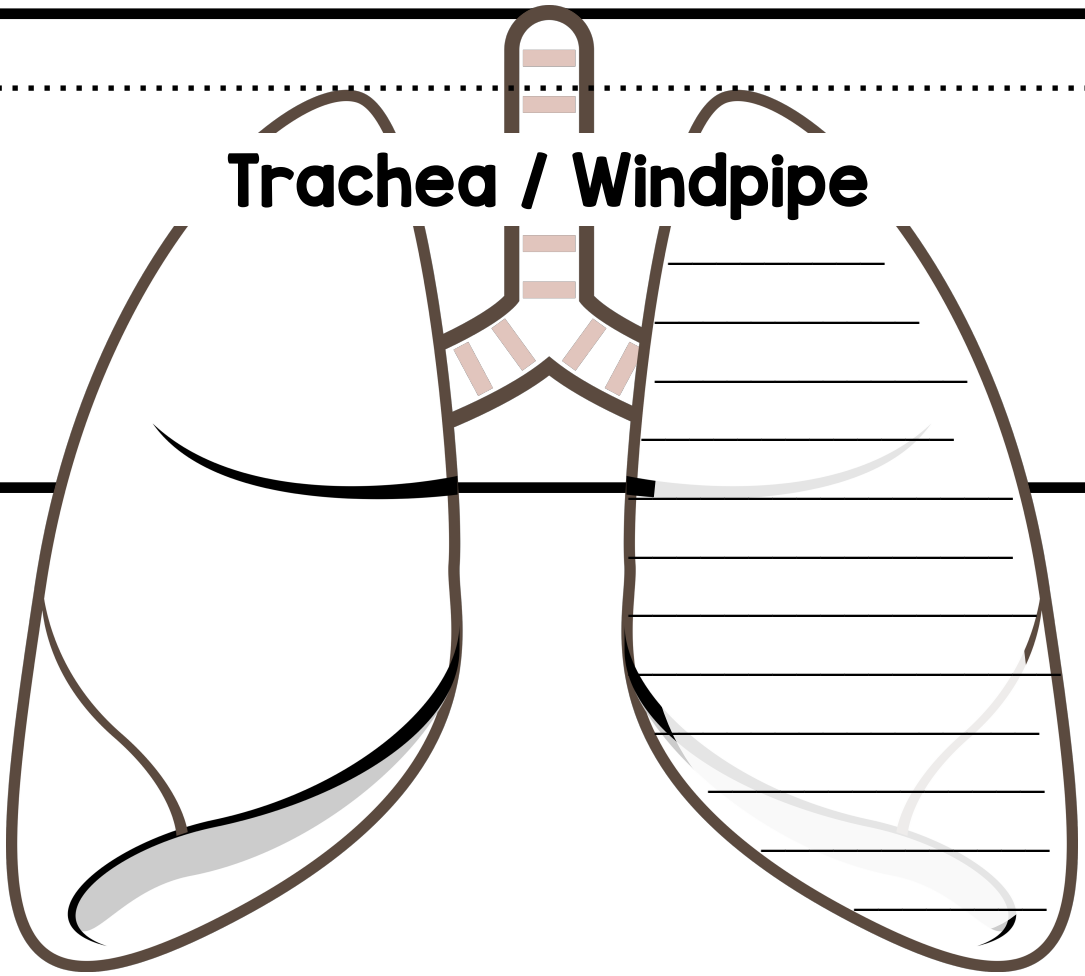


Glue the back of each top tab or staple the pages together at the top tab.

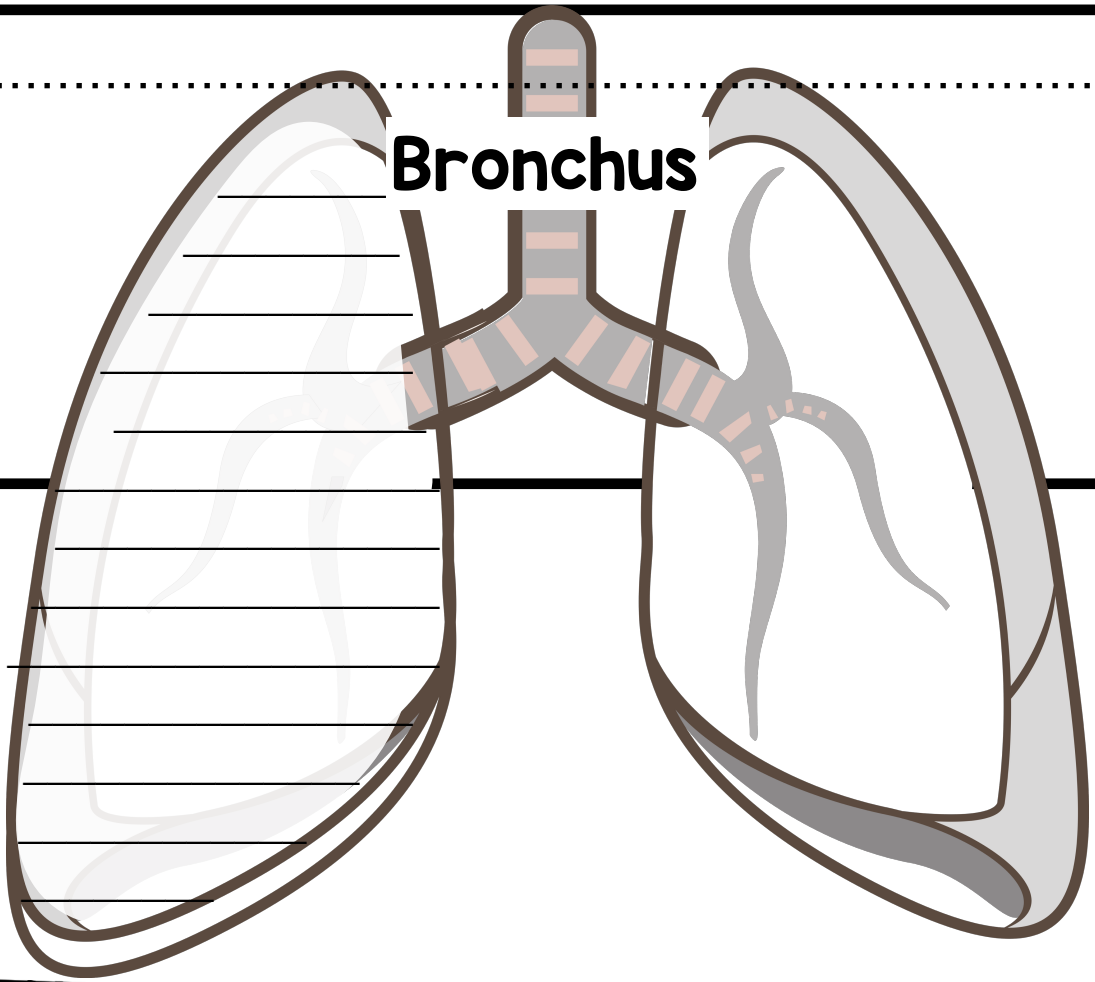
Once your pages are assembled on each flap of the foldable write:

- **What that part of the lung is responsible for.**
- **How it helps the lungs work.**
- **How it keeps the body healthy.**

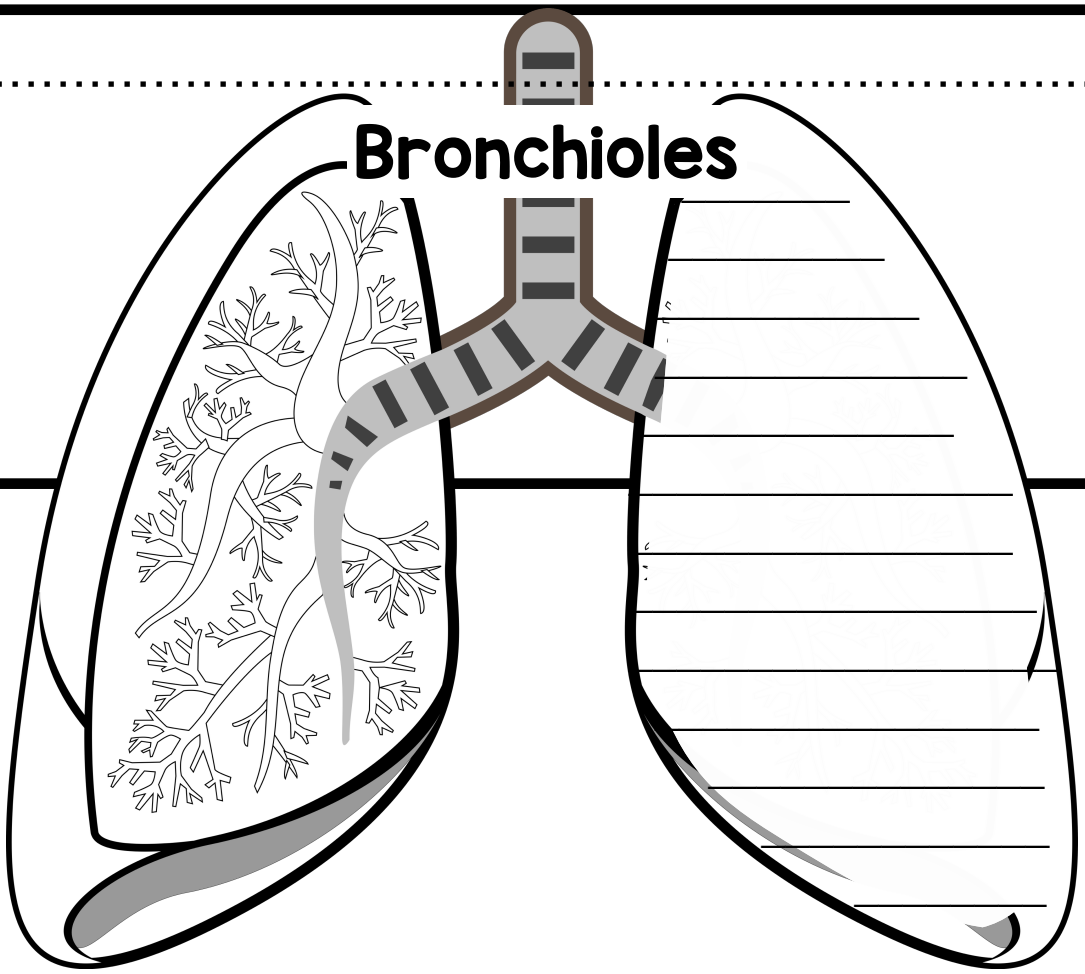
Trachea / Windpipe



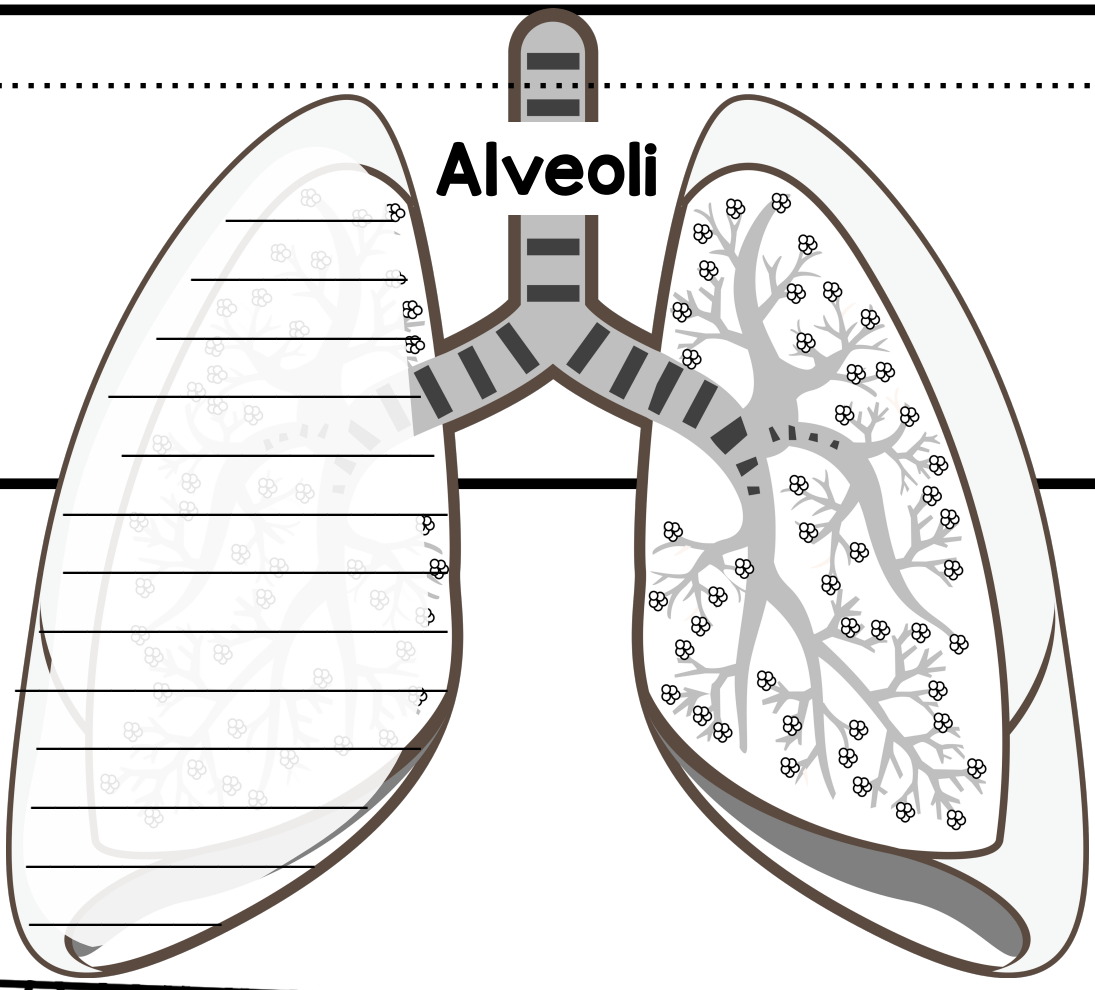
Bronchus



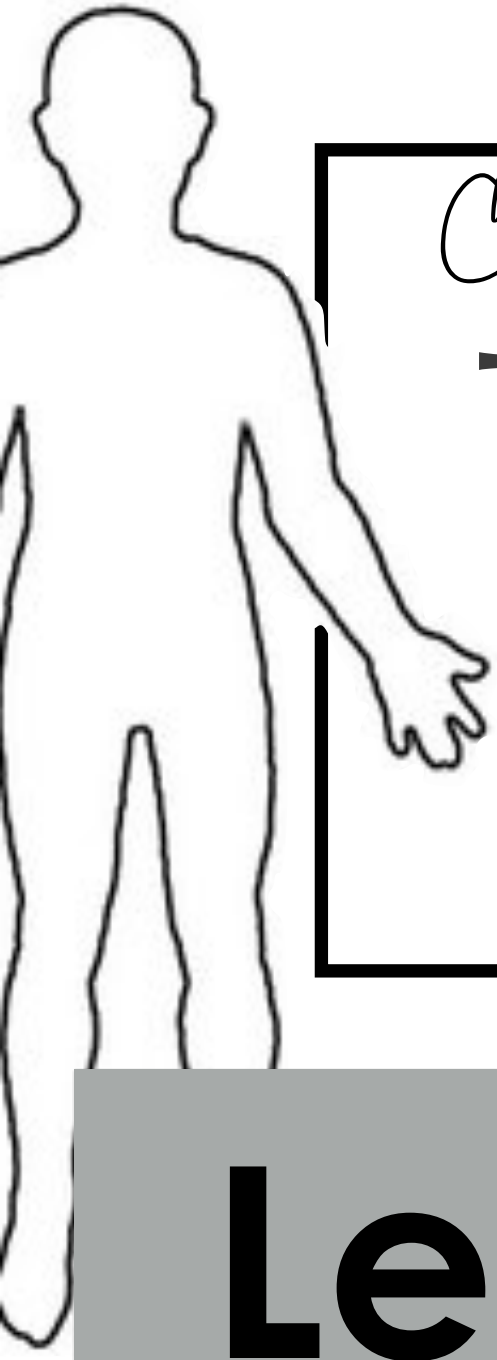
Bronchioles



Alveoli



SCIENCE



Combined Grade

Teaching Plan

Habitats
&
Human Body

Lesson #7

Combined Lesson #7

	First Half	Second Half
Prep	***Prepare the materials needed for both lessons and grade 5 experiment.***	
Grade 4	**Centre Day #3** *Meet with Teacher* 1-2 groups of students will meet with the teacher about their research, share what they have learned, and check in on research skills. Make notes of any students who may need additional support on researching skills or catch-up time. *Student Collaboration:* Students not meeting with the teacher will either continue researching or collaborate with another students to talk about what they have learned and share the information they have gathered with peers. Students will put their research organizers into their notebooks.	**Centre Day #3** Various Habitats - Follow Rotation Schedule **Student Research Time** Students will read and gather information on their habitat for this cycle of research. Students will work together to share information as they complete their research from the research baskets. Students will record their information on one of the graphic organizers.
Grade 5	*Students will look at the impacts that asthma has on the lungs, with a focus on how air pollution and smoking increase the risk factors for this disease, and how these risk factors can be reduced.* *1) Students will read the article "You take my breath away". This article can be used to help teach independent research skills. Using highlighters student can identify key ideas in the text that tell the who, what, where, when, and why of asthma.* *2) Students can reflect on this strategy and how it helps them to focus on research skills.*	Students will conduct an experiment how on effect of asthma on your lungs. Talk about what it means to catch your breath and what a normal resting breath feels like. ***CAUTION: Students should be warned about breathing through the straw. When they feel a shortness of breath they should stop. Students with diagnosed asthma should not engage in this activity.*** ***Ask your group to get into partners or groups of three. Before the groups begin the trials have them think about their hypothesis. Remind students that a hypothesis is an educated guess that is supported by background knowledge and research. Students will read through the trials and then make their hypothesis. What do you think will happen? What will be different between trial one and two? Which trial will take longer to catch your breath and justify your hypothesis?*** ***Students will begin their trials with a partner. Only one of them will complete each trial at a time while the other partner times how long it takes to regain a normal breathing pattern or to catch your breath.***

Ocean Habitat

Use the QR code to Link to Student Research

http://goo.gl/igVXqa

Land and Weather

Human Impact

Animals and Adaptations

Animal Adaptations

Land and Weather

Human Impact

Animal Adaptations

Ocean Habitat

http://goo.gl/igVXqa

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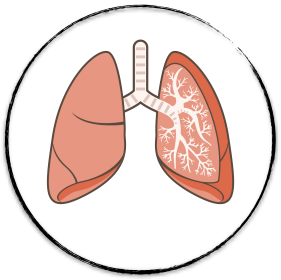
Experimental Safety

Catch your Breath

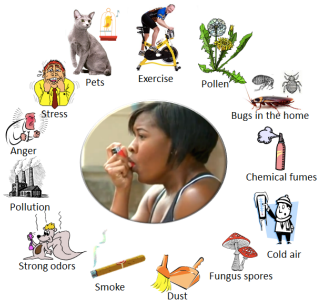
1. Work with a partner.
2. Only one partner does the trial at a time.
3. The other partner who is not doing the trial will count how long it takes to "catch your breath" and monitor their partner.
4. Be safe at all times.

You Take My Breath Away



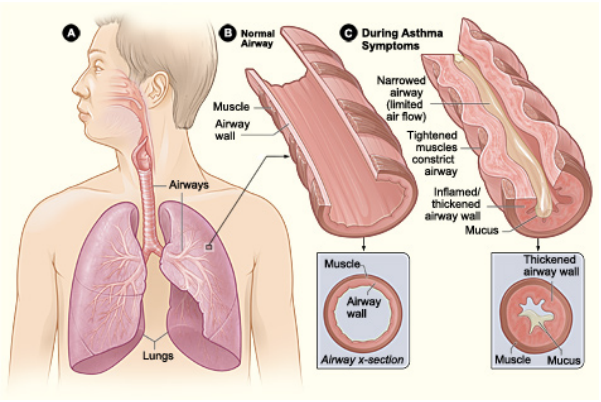
The Effects of Asthma on Your Lungs

Asthma is a disease that affects the lungs. Asthma can affect people of all ages but children are the most affected group. People who have asthma have very sensitive lungs that are hyper-reactive. This means that their lungs have an over-reaction to certain problems. Sometimes people with asthma have an asthma attack. They stop breathing normally and they start wheezing, struggle to breathe and have a shortness of breath, begin coughing a lot, and have a tight feeling in their chest. There are many things that might cause an asthma attack. Bad air is one cause that may lead to an asthma attack. Breathing in cigarette smoke, and polluted air causes the lungs of someone with asthma to over-react. Sometimes allergies to certain things like dust can cause an asthma attack. Also lots of exercise or physical activity can cause the lungs to have an asthma attack.



Asthma Triggers

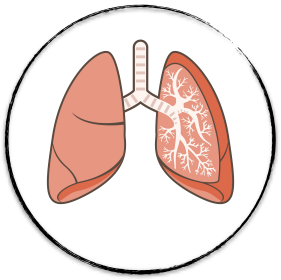
What is happening inside lungs when someone has an asthma attack? When these sensitive lungs encounter something bad like cigarette smoke the lungs begin to panic and try to stop the bad air from entering the lungs. The stretchy walls of the bronchioles swell and narrow, trying to let less air through. They also begin to release more mucus in hopes of washing away the bad air. All of this closes the bronchiole air tubes which makes it much harder to breathe. An asthma attack can be very serious because if it is not treated the airways can completely shut making it impossible to breathe.



A doctor will diagnose asthma by asking lots of questions about breathing problems in the past and by giving a breathing test. Many people with asthma can manage this disease through knowing themselves and their triggers for asthma attacks and through medicines. These medicines are often administered through puffers. A puffer allows someone with asthma to breathe in medicines that are designed to help relax the lung muscles, which helps the swelling go down and the muscles return to normal.

You Take My Breath Away

The Effects of Asthma on Your Lungs



STUDENT EXPERIMENT

TRIAL 1

Run on the spot for
2 minutes.
Breathe Normally
and try to
'catch your breath'
and return your breathing to
normal.

TRIAL 2

Run on the spot for 2 minutes
Plug your nose.
Breath through a straw a few
times.
Do you notice a difference?
Could you
'catch your breath'?

1. *Before you Begin...* **WHAT IS YOUR HYPOTHESIS?**

_____

_____

2. *Conduct your Experiment....* **WHAT DID YOU NOTICE?**

Trial #1 _____

_____

Trial #2 _____

_____

3. *Think about it....* **WHAT ARE YOUR CONCLUSIONS?**

_____

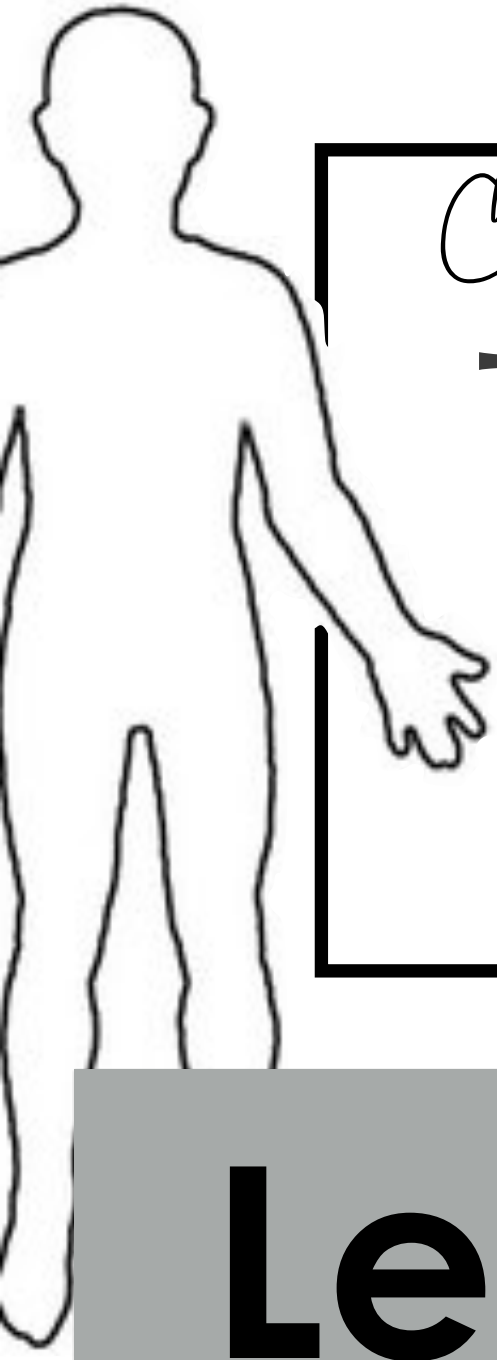
_____

_____

_____

_____

SCIENCE



Combined Grade

Teaching Plan

Habitats
&
Human Body

Lesson #8

Combined Lesson #8

	First Half	Second Half
Prep	***Gather the materials that you require for the heart model.***	
Grade 4	**Centre Day #4** *Meet with Teacher* 1-2 groups of students will meet with the teacher about their research, share what they have learned, and check in on research skills. Make notes of any students who may need additional support on researching skills or catch-up time. *Student Collaboration:* Students not meeting with the teacher will either continue researching or collaborate with another students to talk about what they have learned and share the information they have gathered with peers. Students will put their research organizers into their notebooks.	**Centre Day #4** Various Habitats - Follow Rotation Schedule **Student Research Time** Students will read and gather information on their habitat for this cycle of research. Students will work together to share information as they complete their research from the research baskets. Students will record their information on one of the graphic organizers.
Grade 5	***Students will read the story "The Little Red Blood Cell and the Pump it Path" (included)*** ***They will then record the steps that Billie Rubin takes as he moves through the body and the heart. They will use this information to make a human model of the human heart.*** ***Students will reflect on the model that they made and talk about how the model replicates the actual functioning of the heart.***	Students will create a larger than life model of the heart for students to move through. • You need four hula hoops to represent the chambers of the heart • Card for students (one side red and the other side blue) • Use the labels provided for students to label the parts of the heart. Follow the instructions in the following pages to see how to set this model up in your classroom. When you start this human model I would recommend that you start it very slow. Start with two students entering the heart only and have them work through the entire blood pump cycle before the next two students begin. As students get more familiar you can add more students into the model at step #1 and step #6.
Notes	***To modify this heart model have students create a smaller version that they can manipulate with materials like circles out of construction paper and manipulatives such as tennis balls or bean bags in blue and red. Students could even create a stop motion video of the manipulatives moving through the heart.***	

Coniferous Forest Habitat

Use the QR code to Link to Student Research

http://goo.gl/tx1Dai

Land and Weather

Human Impact

Animals and Adaptations

Animal Adaptations

Land and Weather

Human Impact

Animal Adaptations

Coniferous Forest Habitat

http://goo.gl/tx1Daj

Follow the QR code to link to the research for this topic. Fill out the foldable with your research. When done cut out both shapes around the solid black line. Fold the flaps in on the dotted line. Glue the middle section in your notebook. Glue the title on the front of the flaps.

The Little Red Blood Cell
and the Pump It Path

Once upon a time there was a little red blood cell named Billie Rubin. When Billie Rubin was born he stayed safely protected inside a big bone wrapped up tightly in the bone marrow. After 7 days, Billie Rubin was now big enough to join the other blood cells in the blood-stream, and to do the important job of delivering oxygen all around the body. Billie Rubin wasn't sure if he was ready but knew that he didn't have much choice and would be released anyway.

As he was released he joined a sea of other blood cells racing down the leg **arteries** towards the **capillaries** in the foot. On his journey he met an older blood cell named Cherry Appositive. She welcomed Bille to the blood stream and showed him what to do.

As Billie Rubin travelled along he watched amazed at the efficiency of the blood cells and the muscles working together to get the job done. He stopped in the capillaries in the foot with Cherry and watched as she delivered the oxygen and exchanged it for some carbon dioxide. As they were preparing to exit the capillary and enter the vein system, he was suddenly given some carbon dioxide to carry with him. He was so excited that this was his first big job as a blood cell. He felt so important.

It was a long haul up towards the heart. But eventually he heard Cherry Appositive yell towards him "Okay kid here it comes, get ready for the heart!"

Billie Rubin was so excited for his first time through the heart. He was eventually sucked into the heart through the **inferior vena cava** and entered the right atrium. There he met the other blood cells from the upper body that were sucked in through the **superior vena cava.** On the next pump he was whooshed though the **tricuspid valve** which was like opening the door, and into the **right ventricle.**

The Little Red Blood Cell
and the Pump It Path

He held on tight to his carbon dioxide package as he knew that on the next pump he would go rocketing to the lungs. The next pump came quicker than expected as he flew up through the **pulmonary arteries** towards the lungs.

As he flew to the lungs he asked the cell next to him what was going to happen next. The other cell turned to him and said, "Well kid, get ready you have got to be quick. You will drop your carbon at the **alveoli** and quickly pick up an oxygen package for your next delivery."

He wasn't kidding! When Billie Rubin got to the alveoli of the lungs, the **capillaries** were yelling at the blood cells, barking orders, and handing out new packages. Surprisingly Billie Rubin was able to follow the lead of the older blood cells and get through the chaos. Now he headed back to the heart so that he could be pumped back to the rest of the body.

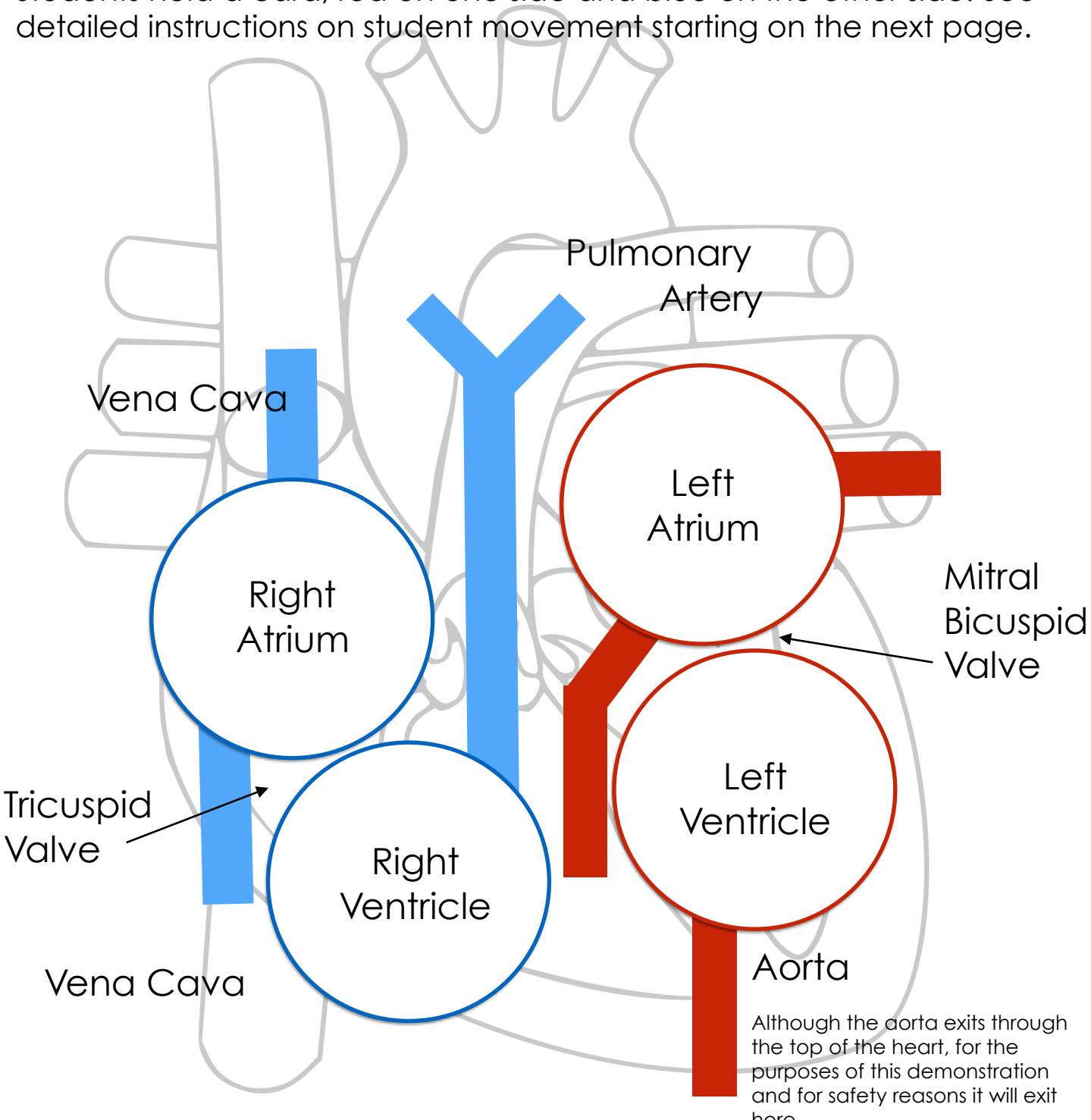
He once again approached the heart but this time was sucked into the **left atrium** through the **pulmonary veins**. From there he was joined by the blood cells that had travelled to the other lung and when the atrium was ready the **mitral bicuspid valve** opened and he flowed into the left ventricle. He was almost through the heart and ready to travel through the rest of the body to deliver his oxygen and pick up another carbon dioxide package. On the next pump the aortic valve opened and Billie Rubin was pumped through the aorta and travelled around the body to make his delivery. Billie Rubin was so proud of he first journey through the heart and the lungs. But it was the slowest, yet most exciting 20 seconds of his whole life.

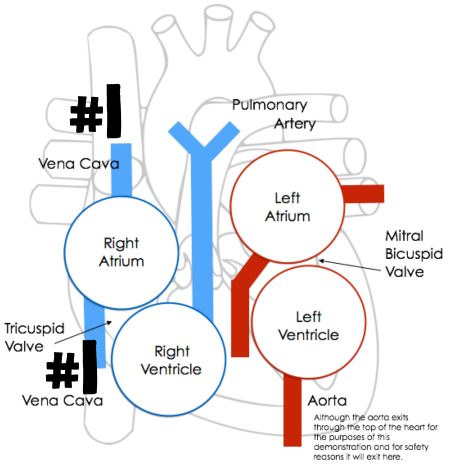
Billie Rubin would make this journey 4,320 more times that day. Eventually Billie Rubin would be too old to make this journey so after 120 days Billie Rubin was cleaned out of the blood by the liver and the spleen.

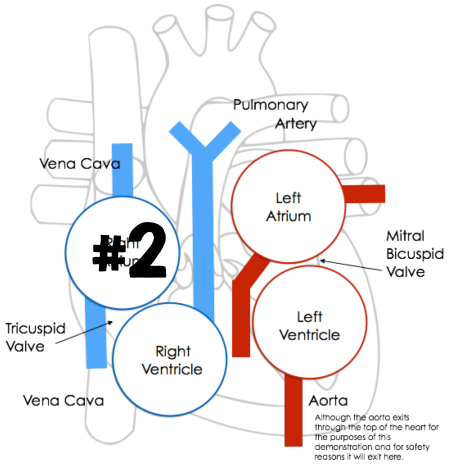
Human Model of the Heart

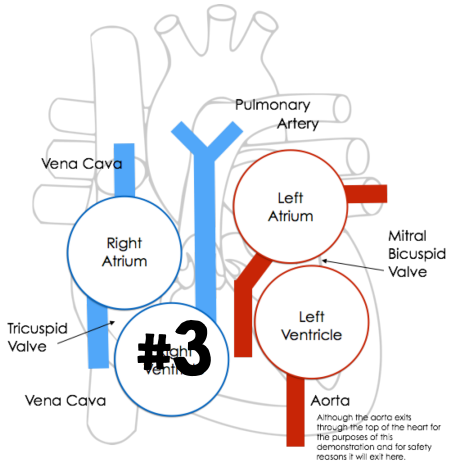
To set this up you need the following:
Hula hoops, or coloured circles to act as the heart chambers
Skipping ropes to map out the veins and arteries.
Lungs on either side of the heart model and red and blue signs.

Students hold a card, red on one side and blue on the other side. See detailed instructions on student movement starting on the next page.

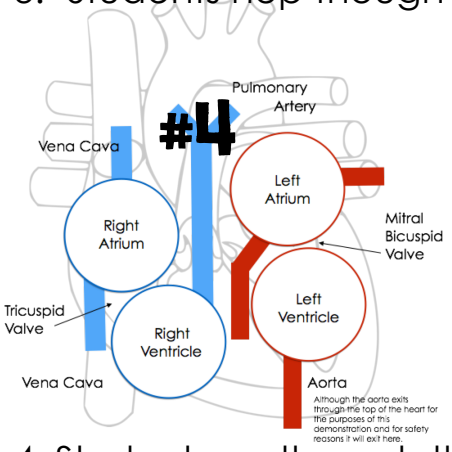


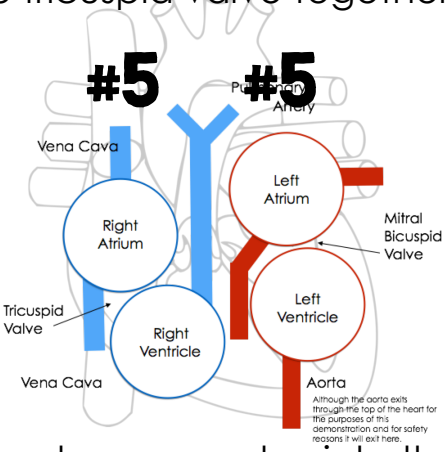


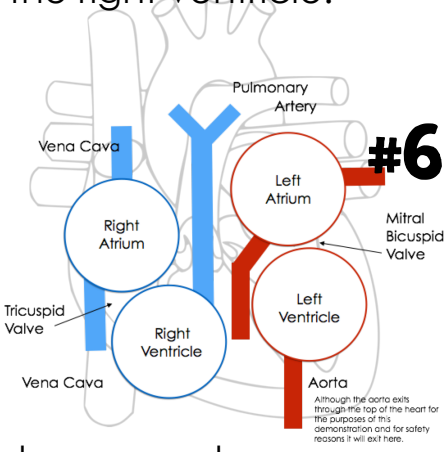




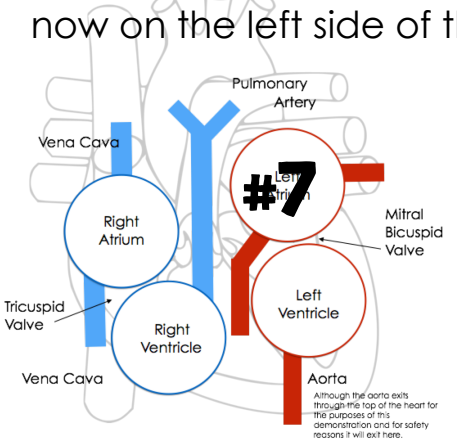
1. Students enter the vena cava (one student per vena cava top and bottom).
2. Students join together as they enter the right atrium at the same time.
3. Students hop though the tricuspid valve together to the right ventricle.

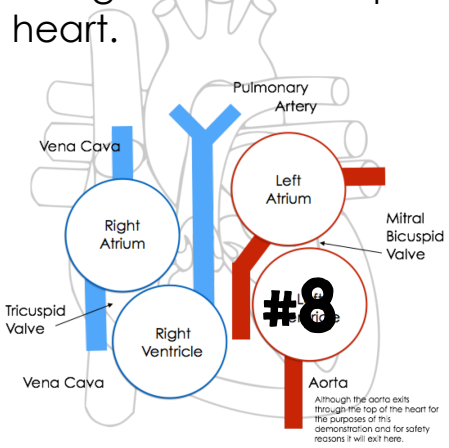


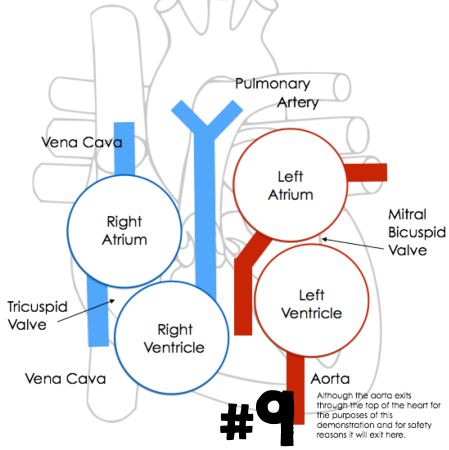




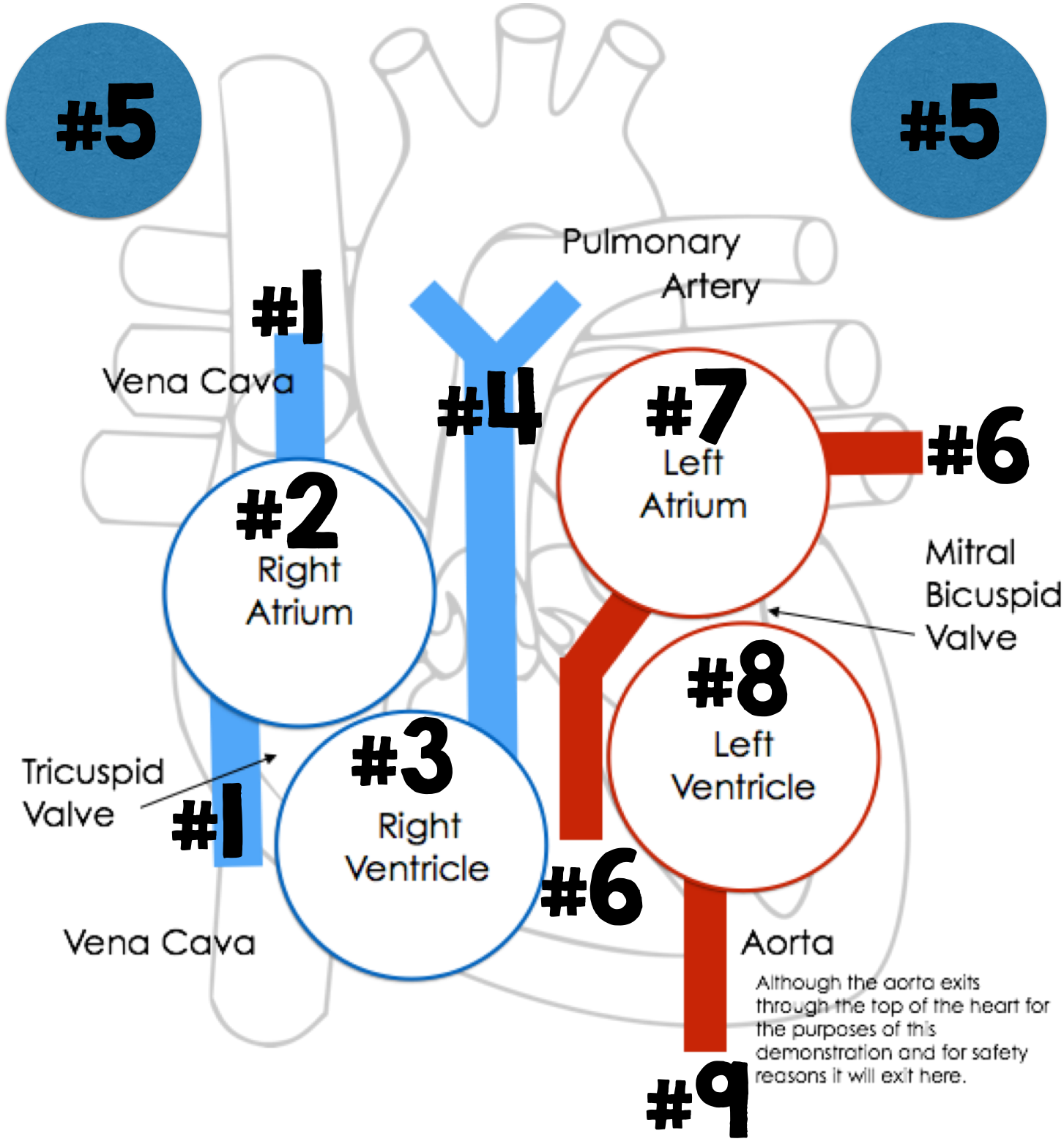
4. Students go through the pulmonary valve into the pulmonary artery.
5. Students exit the heart and enter the lungs and exchange their CO2 for Oxygen (flip their card).
6. Students leave the lung and go back to the pulmonary veins in the heart now on the left side of the heart.



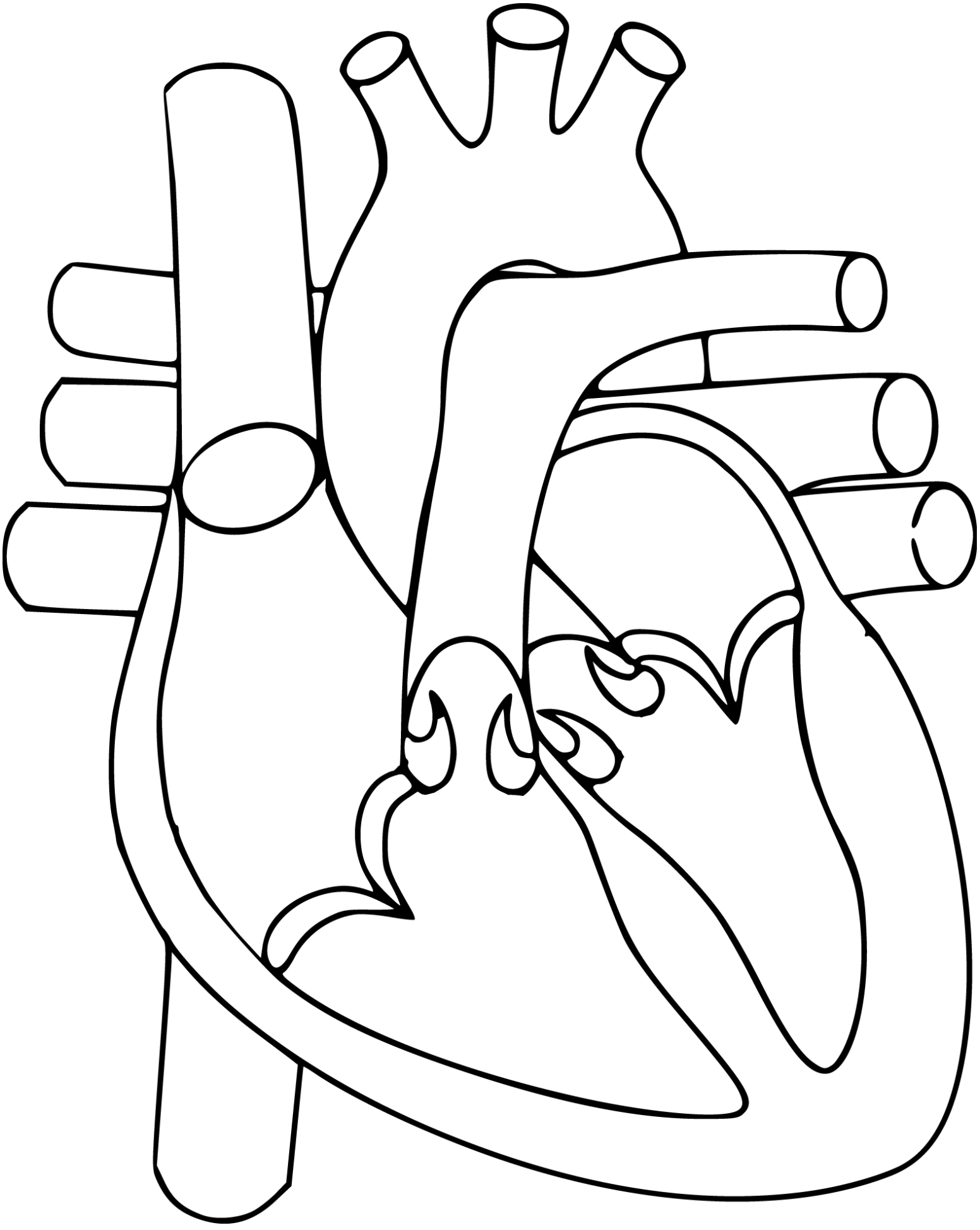




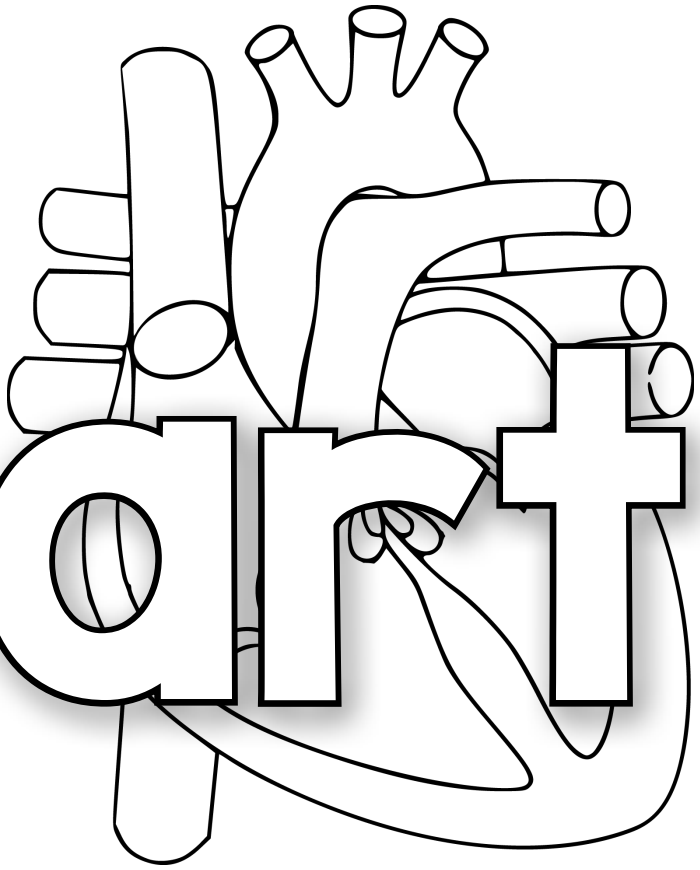
7. Students enter the left atrium together.
8. Students jump through the mitral valve into the left ventricle.
9. Students exit the heart through the ventricle going out through the aortic valve into the aorta. The students go throughout the body dropping off their oxygen-rich blood. Before they enter the heart again they flip their card to blue. Then the cycle continues.



1. Students enter the vena cava. 2. Students enter the right atrium. 3. Students hop though the tricuspid valve to the right ventricle. 4. Students go through the pulmonary valve into the pulmonary artery. 5. Students enter the lungs and exchange their CO2 for Oxygen (flip their card). 6. Students go back through the pulmonary veins. 7. Students enter the left atrium. 8. Students jump through the mitral valve into the left ventricle. 9. Students exit the ventricle through the aortic valve into the aorta. Then the cycle continues.



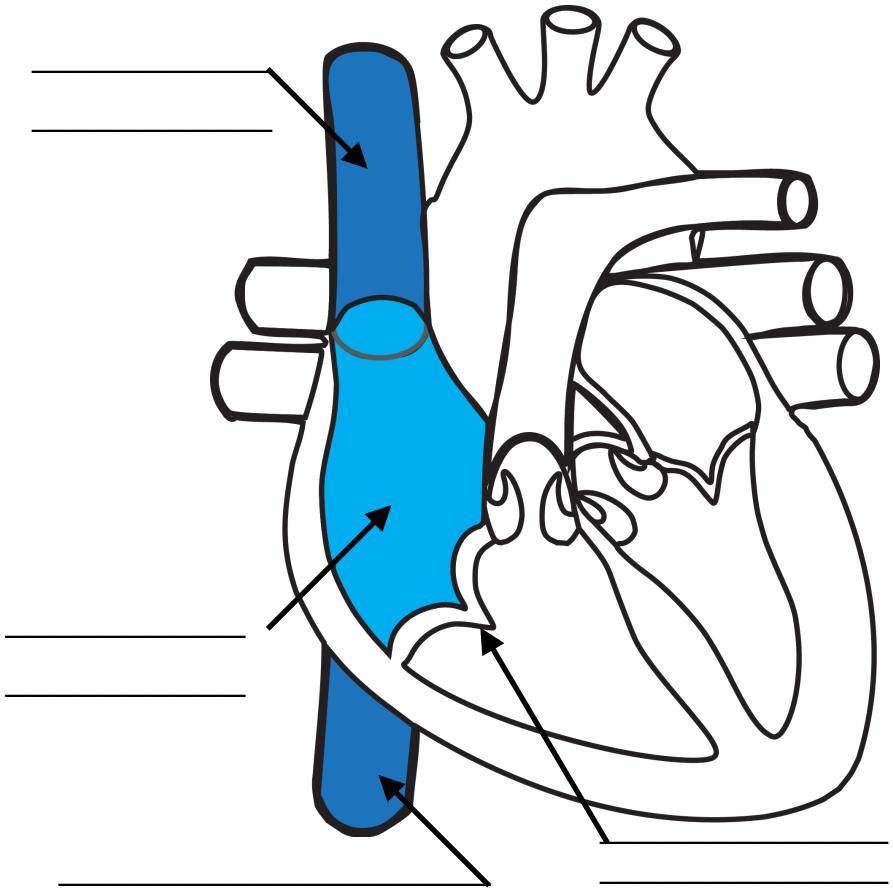
The Heart



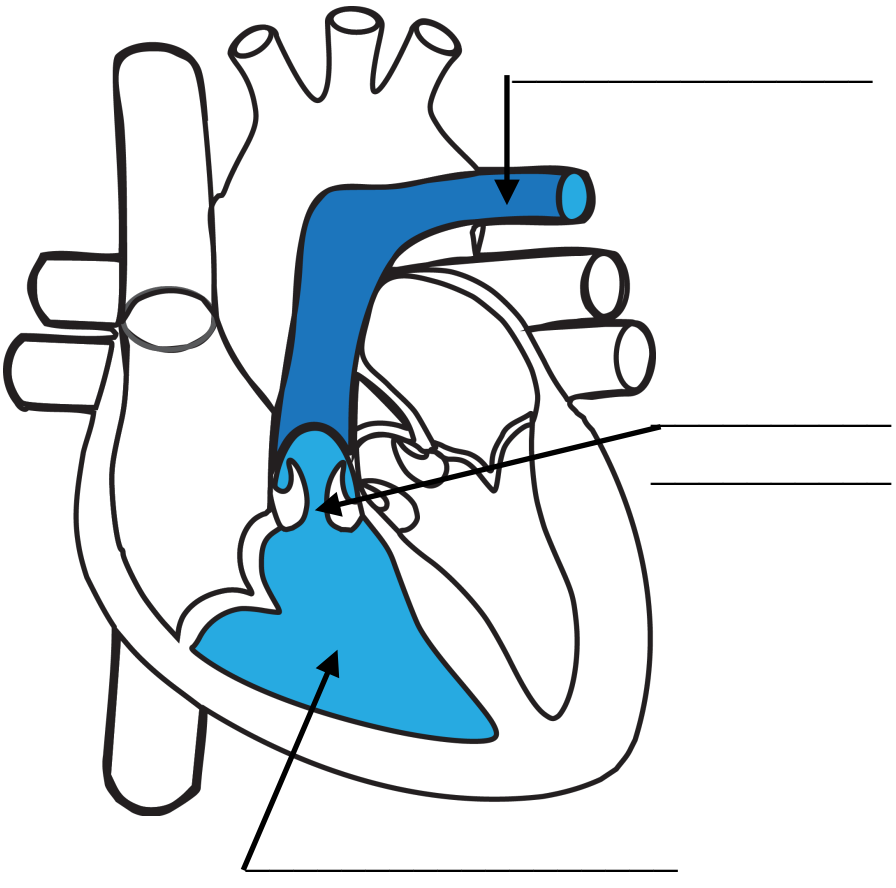
My Reflection

What did I learn about the heart?

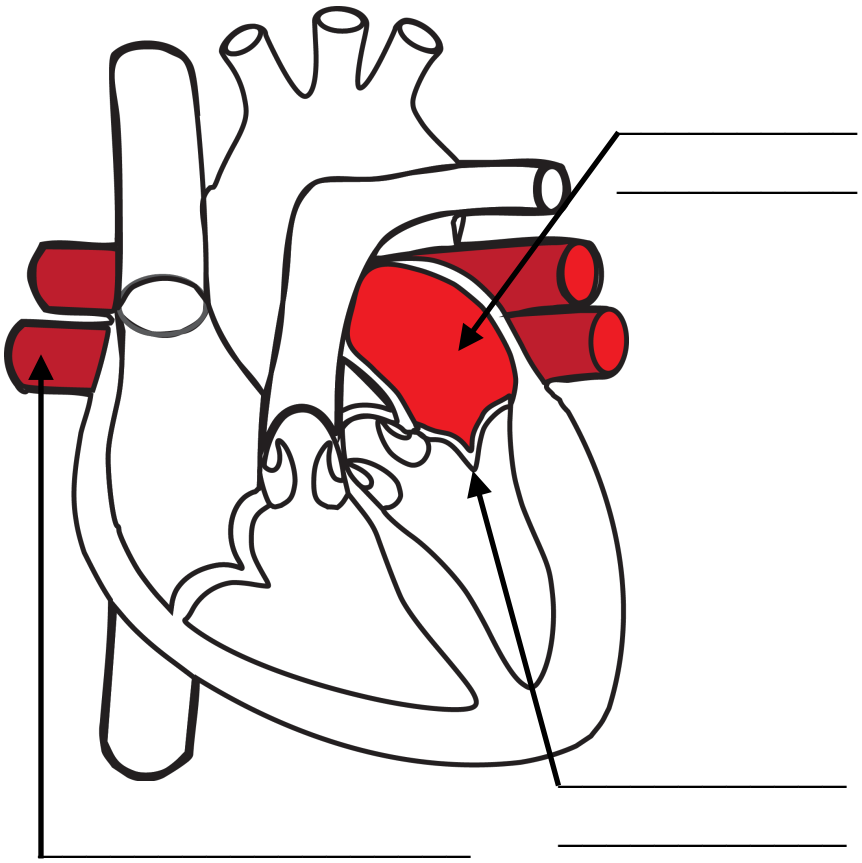
What question do I still have about how the heart works?



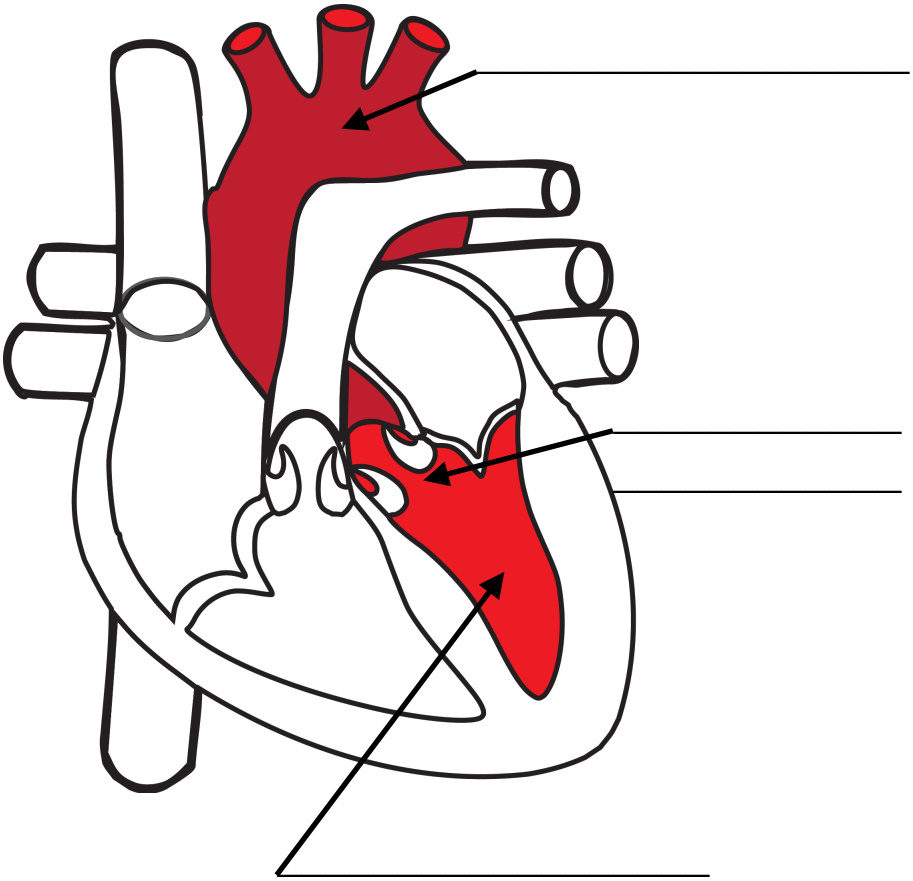
Describe how the blood moves though this section of the heart.



Describe how the blood moves though this section of the heart.



Describe how the blood moves though this section of the heart.



Describe how the blood moves though this section of the heart.

Pulmonary Artery

Inferior Vena Cava

Pulmonary Valve

Superior Vena Cava

Right Atrium

Mitral Valve

Right Ventricle

Tricuspid Valve

Right Atrium

Left Atrium

Right Ventricle

Left Ventricle

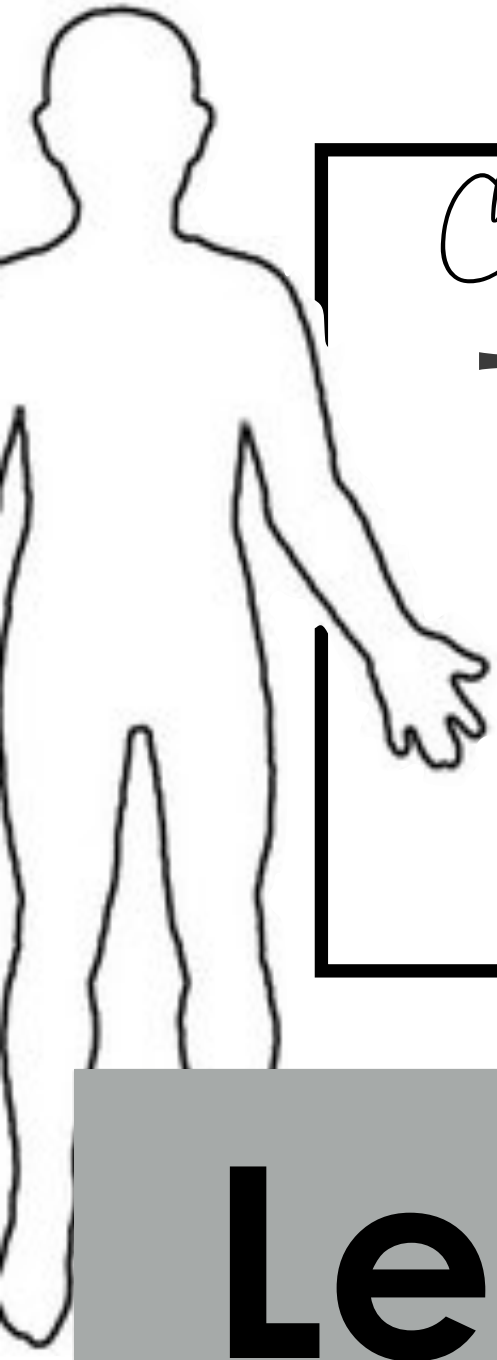
Aorta

Aortic Valve

Blood

Lung

SCIENCE



Combined Grade

Teaching Plan

Habitats
&
Human Body

Lesson #9

Combined Lesson #9

	First Half	Second Half
Prep	***Gather the materials needed to make blood as listed on the Make Your Own Blood instructions page.***	
Grade 4	**Centre Day #5** Various Habitats - Follow Rotation Schedule **Student Research Time** Students will read and gather information on their habitat for this cycle of research. Students will work together to share information as they complete their research from the research baskets. Students will record their information on one of the graphic organizers.	**Centre Day #5** *Meet with Teacher* 1-2 groups of students will meet with the teacher about their research, share what they have learned and check in on research skills. Make notes of any students who may need additional support on researching skills or catch-up time. *Student Collaboration:* Students not meeting with the teacher will either continue researching or collaborate with another students to talk about what they have learned and share the information they have gathered with peers. Students will put their research organizers into their notebooks.
Grade 5	EXPERIMENT - Students will explore blood by conducting an experiment to make a model of blood with common kitchen materials. Students will read about the different parts of the heart and then they can begin to follow the instructions to make their own blood.	***Students will create an interactive notebook to reflect on what they learned about blood.***
Notes	***Two cereals are used for the making of the blood. I recommend using Cheerios and Gerber Graduate Puffs. You do not need many of the Gerber Graduates Puffs as platelets are not a large concentration of the blood. Other star - like cereal or items can be used instead.***	

Animal Adaptations

Land and Weather

Human Impact

Animal Adaptations

Grassland Habitat

http://goo.gl/NBBRzo

Follow the QR code to link to the research for this topic. Fill out the foldable with your research. When done cut out both shapes around the solid black line. Fold the flaps in on the dotted line. Glue the middle section in your notebook. Glue the title on the front of the flaps.

Grassland Habitat

Use the QR code to Link to Student Research

http://goo.gl/NBBRzo

Land and Weather

Human Impact

Animals and Adaptations

Making Blood

What is in our blood?

Blood is made up of four main ingredients.

- Plasma
- White blood cells
- Platelets
- Red blood cells

PLASMA is like your blood's truck driver. Plasma brings nourishment to the rest of your body and helps to remove waste from your blood. It is mostly yellowish water. Plasma also contains sugar, fats, vitamins, hormones, enzymes, antibodies, and proteins. These are all of the things your body needs for nourishment. Plasma makes up about half of your blood.

RED BLOOD CELLS are like your blood's pilots. Red blood cells have a very important job. Iron-rich hemoglobin inside your red blood cells pick up the oxygen in your lungs and carry it all around your body. Red blood cells are made in your bone marrow and make up about 45% of your total blood.

WHITE BLOOD CELLS are like your blood's soldiers. They help your immune system fight off infections. They are made in the bone marrow. They work by attaching themselves to bacteria and viruses to flush the bad things out of your system.

PLATELETS are like your blood's nurses. They work with clotting proteins to help patch up wounds by sticking to the walls of a damaged vein. They are also produced in the bone marrow.

Plasma

Red Blood Cells

White Blood Cells

Platelets

_____
help to form clots to fix wounds

_____
brings nourishment and removed waste

_____
Pick up oxygen and deliver it to the body

_____
help to fight off infections

Take or Draw a picture of blood from your experiment and label the pictures.

Reflection:
What did you learn about blood?

plasma
© 2017 Madly Learning

platelets
© 2017 Madly Learning


Red
Blood Cells
© 2017 Madly Learning


White
Blood Cells
© 2017 Madly Learning

White Blood Cells
© 2017 Madly Learning

Red Blood Cells
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Make Your Own Blood

WHAT YOU NEED

- A glass jar with a lid or clear plastic bottle with lid
- Yellow food dye
- Salt
- Sugar
- Water
- Red food dye
- Mini marshmallows
- Cheerios
- Star puff cereal
- Large plastic zip bags
- Mixing bowls
- Measuring tools (1cup & 1tbsp)

MAKE ALL PARTS SEPARATELY FIRST

TO MAKE PLASMA

Mix one cup of water with 3-4 drops of yellow food dye in each container. Add to the container 1 tablespoon of salt and one tablespoon of sugar.

TO MAKE PLATELETS

Mix the star puff cereal with some red food dye in a large plastic zip bag. Mix until the cereal is red in colour.

TO MAKE RED BLOOD CELLS

In batches mix a large amount of Cheerios with red food dye in large plastic zip bags. You will need a lot of food dye for this amount of Cheerios.

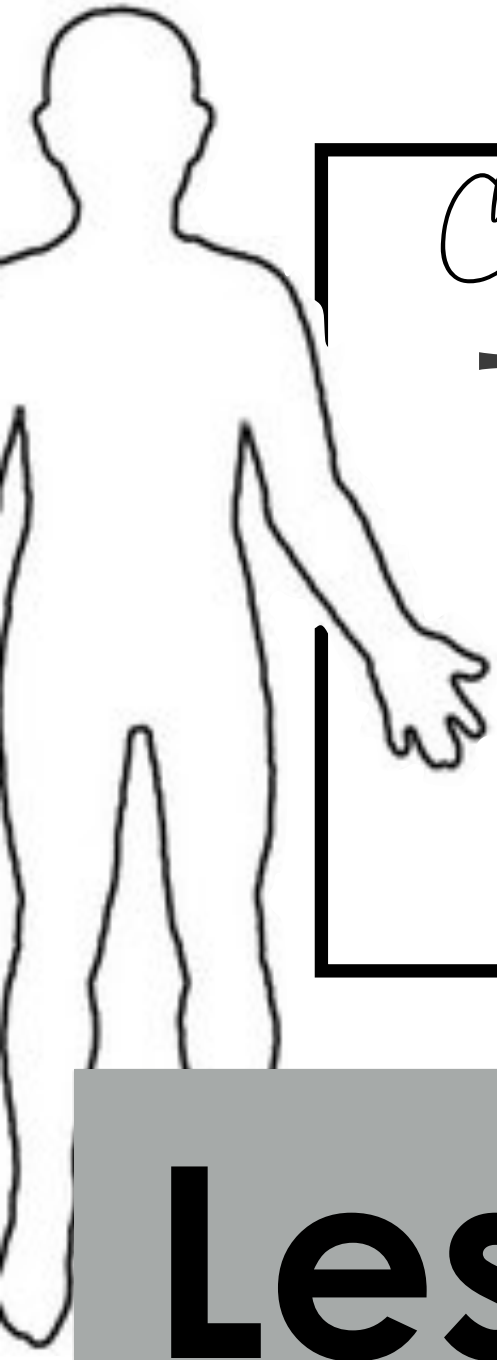
TO MAKE WHITE BLOOD CELLS

Use the mini marshmallows as they are.

ASSEMBLE YOUR BLOOD

1. First, with the lid closed, shake up the **PLASMA** in your container to mix ingredients.
2. Add one cup of **RED BLOOD CELLS** to plasma mix.
3. Add 10-20 **WHITE BLOOD CELLS** to the mix.
4. Add 1/4 cup of **PLATELETS** to the mix.
5. Place lid on container and slowly mix the blood.

SCIENCE



Combined Grade

Teaching Plan

Habitats
&
Human Body

Lesson #10

Combined Lesson #10

	First Half	Second Half
Prep	Preview the videos in the Heart Disease - LiveBinder for Grade 5 prior to the lesson to familiarize yourself with the problems that affect the heart so that you can anticipate questions or problems that students might have. Also review the teacher background information and answer pages for this lesson as well.	
Grade 4	**Centre Day #6** *Meet with Teacher* 1-2 groups of students will meet with the teacher about their research, share what they have learned and check in on research skills. Make notes of any students who may need additional support on researching skills or catch-up time. *Student Collaboration:* Students not meeting with the teacher will either continue researching or collaborate with another students to talk about what they have learned and share the information they have gathered with peers. Students will put their research organizers into their notebooks.	**Centre Day #6** Various Habitats - Follow Rotation Schedule **Student Research Time** Students will read and gather information on their habitat for this cycle of research. Students will work together to share information as they complete their research from the research baskets. Students will record their information on one of the graphic organizers.
Grade 5	Students will look at heart disease and how it impacts the heart.	*In a knowledge building circle have students share what they learned with others about problems that affect the heart.* *Guide them to the understanding that the heart is a vital organ that should be protected. If students do not come to this conclusion rewatch the videos on keeping the heart healthy on the LiveBinder resource.*
	Inquiry Notes: For Grade 5 Heart Lessons - depending on your students' comfort level with inquiry this can be done in a few ways. As a guided inquiry you can watch the videos together and you can lead the students to help them find their answers using the cut and paste. For students with some familiarity with inquiry they can work in teams to find the information together and use the cut and paste answers to help them guide their learning. For more advanced students familiar with inquiry you can leave the answers from the cut and paste activity out and have students use the resources to fill in the organizer themselves. Additionally you can omit the links to the LiveBinder resources and have students find these answers on their own. They can do this activity as a small group or they can do it as a jigsaw.	

Desert Habitat

Use the QR code to Link to Student Research

http://goo.gl/yS5Lu6

Land and Weather

Human Impact

Animals and Adaptations

Animal Adaptations

Land and Weather

Human Impact

Animal Adaptations

Desert Habitat

http://goo.gl/yS5Lu6

Follow the QR code to link to the research for this topic. Fill out the foldable with your research. When done cut out both shapes around the solid black line. Fold the flaps in on the dotted line. Glue the middle section in your notebook. Glue the title on the front of the flaps.

What is Heart Disease

Follow the QR code to link to the playlist on Heart Disease. Cut out and glue the answers that match each heart problem below.

http://goo.gl/a9tOzL

Valvular Stenosis	
Regurgitation	
Septal Defect	
Deep Vein Thrombosis	
Hypertension	
Coronary Heart Disease	

What is Heart Disease

Follow the QR code to link to the playlist on Heart Disease. Cut out and glue the answers that match each heart problem below.

http://goo.gl/a9tOzL

Valvular Stenosis	The valves of the heart narrow and it prevents the valves from fully opening. This causes an enlarged heart that weakens the heart muscle as it works harder to pump blood.
Regurgitation	The blood flows the wrong way through the valves. Blood leaks back into the heart through the valves.
Septal Defect	There is a hole in the heart and blood leaks from one chamber to another. Often caused when the hole needed in a developing fetus does not close properly. Signs of this defect include a higher blood pressure but low oxygen in the blood.
Deep Vein Thrombosis	A blood clot forms in a deep vein in the body such as the leg. If it breaks apart and travels elsewhere in the body it will block the flow of blood. This is especially dangerous if it ends up in the lungs.
Hypertension	Causes high blood pressure which can lead to hardened arteries with plaque buildup. The heart becomes weakened or enlarged and struggles to pump blood effectively.
Coronary Artery Disease	This is the most common form of heart disease. It is caused when plaque builds up on the artery walls, which blocks the blood flow to the heart. If a clot forms and travels to the brain this is called a stroke. If the buildup prevents oxygen-rich blood from getting to the heart this will cause a heart attack.

Heart Disease

Cut and Glue

Watch the videos in the playlist and use the information that you learned to glue the strips on this page to the table on the other page your teacher gave you.

Cut around the outside of the strips

Cut through the boxes on the dotted lines

This is the most common form of heart disease. It is caused when plaque builds up on the artery walls, which blocks the blood flow to the heart. If a clot forms and travels to the brain this is called a stroke. If the buildup prevents oxygen-rich blood from getting to the heart this will cause a heart attack

The blood flows the wrong way through the valves. Blood leaks back into the heart through the valves.

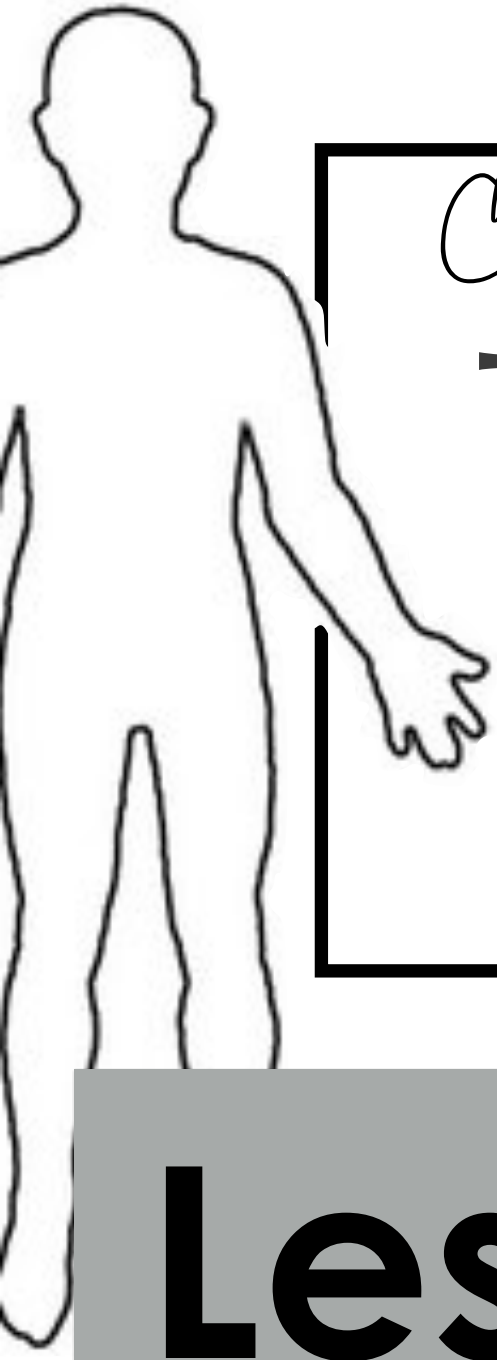
The valves of the heart narrow and it prevents the valves from fully opening. This causes an enlarged heart that weakens the heart muscle as it works harder to pump blood.

There is a hole in the heart and blood leaks from one chamber to another. Often caused when the hole needed in a developing fetus does not close properly. Signs of this defect include higher blood pressure but low oxygen in the blood.

Causes high blood pressure which can lead to hardened arteries with plaque buildup. The heart becomes weakened or enlarged and struggles to pump blood effectively.

A blood clot forms in a deep vein in the body such as the leg. If it breaks apart and travels elsewhere in the body it will block the flow of blood. Especially dangerous if it ends up in the lungs.

SCIENCE



Combined Grade

Teaching Plan

Habitats
&
Human Body

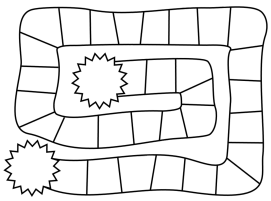
Lesson #11

Combined Lesson #11

	First Half	Second Half
Prep	***Prepare student game cards by getting them ready so that students can design and set up their review game.***	
Grade 4	Use this time for students to catch up on materials that they have not completed from the research on each different type of habitat.	***If students have no unfinished work have them create a review game for the various habitats creating four review question cards for each habitat. Use the game boards or other activities following this lesson to use with the task cards that students create.***
Grade 5	***Students will discover how someone can prevent heart disease and stroke. Students can create a PSA that could be used to help someone keep their heart healthy to protect from heart disease and stroke.*** ***Students will need to complete a small amount of research to look at ways to keep the heart healthy. They can review the section of resources on the resource LiveBinder for heart disease.***	
	Inquiry Notes: For Grade 5 Heart Lessons - depending on your students' comfort level with inquiry this can be done in a few ways. As a guided inquiry you can watch the videos together and you can lead the students to help them find their answers using the cut and paste. For students with some familiarity with inquiry they can work in teams to find the information together and use the cut and paste answers to help them guide their learning. For more advanced students familiar with inquiry you can leave the answers from the cut and paste activity out and have students use the resources to fill in the organizer themselves. Additionally you can omit the links to the live binder resources and have students find these answers on their own. They can do this activity as a small group or they can do it as a jigsaw.	
Notes	Extension Grade 4 http://www.ecokids.ca/pub/eco_info/topics/climate/adaptations/ http://www.bbc.co.uk/nature/adaptations/Detritivore#p0082js2 http://sciencelearn.org.nz/Science-Stories/Earthworms/Earthworm-adaptations	

Habitats in Review

Create a Game



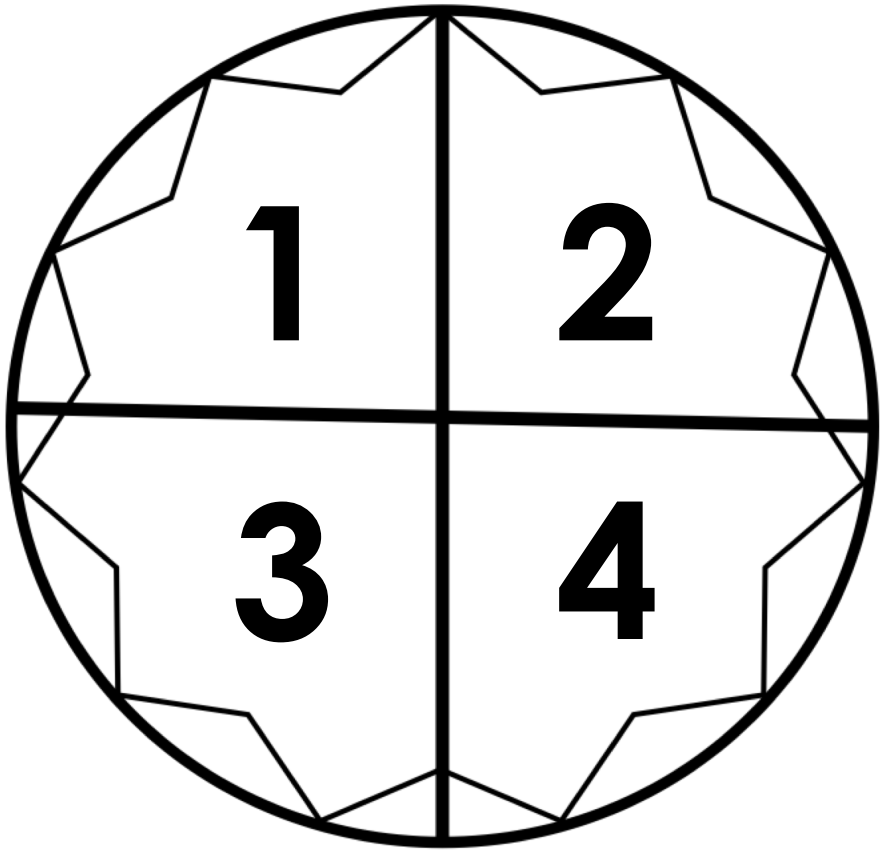
Using your notes and the articles that you read to complete your research, create four questions for each habitat. Questions should include information about

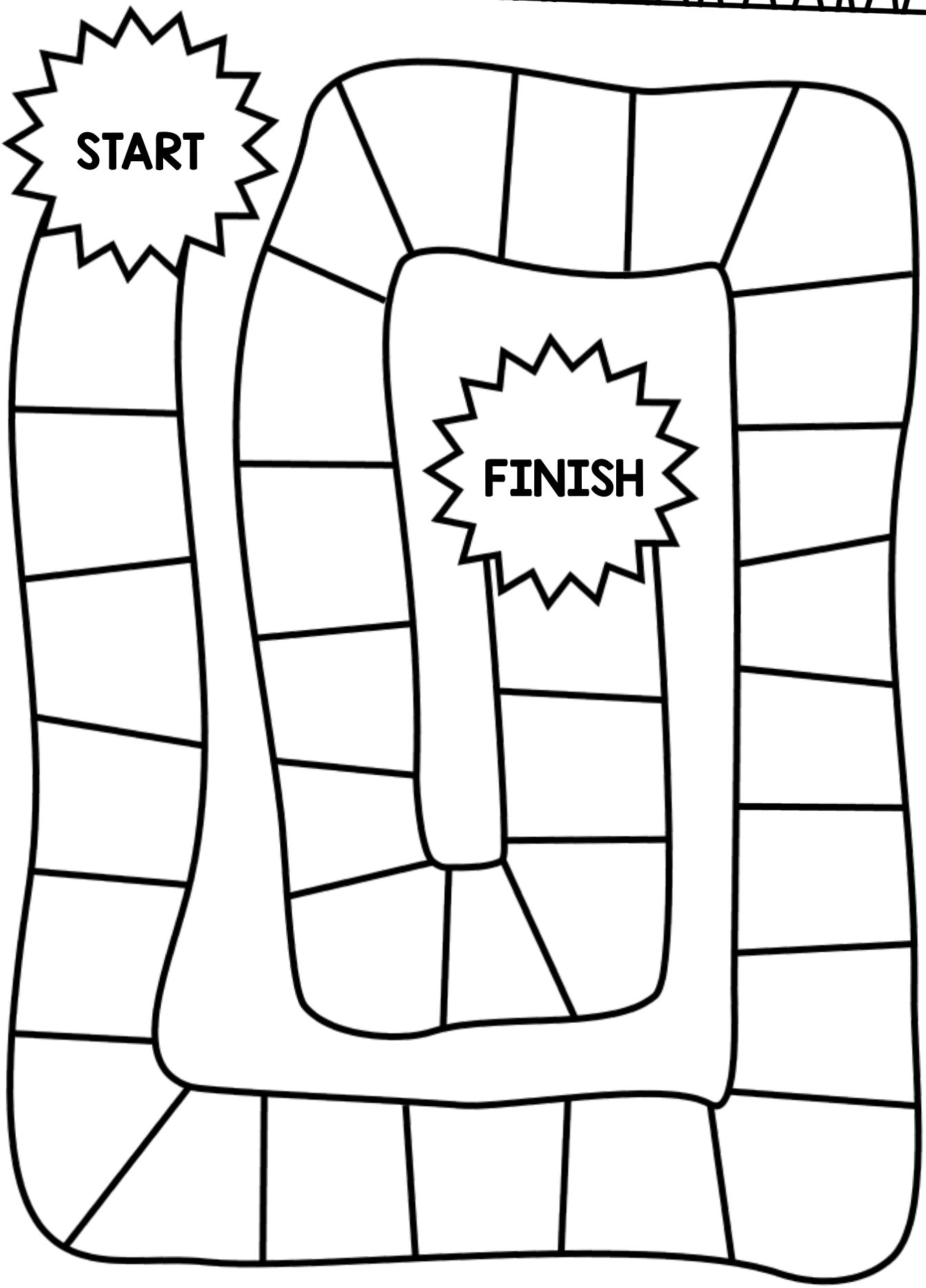
- Food chains and food webs within the habitat
- Animal adaptations
- Human impacts
- Location or physical features

Include the answers on each card provided or on the answers page given. Code each card with your Initials and the number of the card eg: ML-2. Use these cards, the spinner below, and the game board to review the information you learned about the different habitats.

Game Instructions

- Youngest person goes first.
- First person spins the spinner.
- Another player will read the card to the first player. If the first player gets it correct then they may move forward the number of spaces spun.
- If the first player does not answer the question correctly then they will move back the number of spaces that was spun on the spinner.





If you answer a question correctly, move forward the number you spun. If you answer your question incorrectly, move back the number of spaces that you spun.

Habitat: _____

Question

_____

_____

_____

_____

_____

_____

- - - - - - - - - - - - - -

_____

_____

_____

_____ Answer:

Habitat: _____

Question

_____

_____

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- - - - - - - - - - - - - -

_____

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_____ Answer:

Habitat: _____

Question

_____

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_____ Answer:

Habitat: _____

Question

_____

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- - - - - - - - - - - - - -

_____

_____

_____

_____ Answer:

SCOOT Card # _____

Habitat: _____

Question

_____

_____

_____

_____

_____

A)_____

B) _____

C)_____

SCOOT Card # _____

Habitat: _____

Question

_____

_____

_____

_____

_____

A)_____

B) _____

C)_____

© 2017 Mindy Learning

SCOOT Card # _____

Habitat: _____

Question

_____

_____

_____

_____

_____

A)_____

B) _____

C)_____

© 2017 Mindy Learning

SCOOT Card # _____

Habitat: _____

Question

_____

_____

_____

_____

_____

A)_____

B) _____

C)_____

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Habitats Review

SCOOT Answers !

Choose four question cards from each habitat and record the correct answers on this page. Use a blank page to give to friends so that they can record their own answers to your questions. They should check their answers against the answer page.

	___ 1	____ 2	___ 3	___ 4
Polar Region				
Tropical Rain Forest				
Ocean				
Coniferous Forest				
Grasslands				
Desert				

PSA Guide

Think about how you could inform someone how to prevent heart and stroke disease

What I know	What I wonder

My Research

What is heart disease?

Signs and symptoms

Who is affected by heart disease?

PSA Guide

Think about how you could inform someone how to prevent heart and stroke disease

Ways heart disease can be prevented

Focus on your PSA

Who is your audience?

What behaviour do you want people to change?

What is the goal of your PSA?

What will happen in your PSA? How will it be organized?

HEART DISEASE

preventing

Research

Signs and Symptoms

What is it?

Who is your Audience?

Why?

Who?

Plan out your PSA

- What is your goal?
- How should your audience's behaviour change?

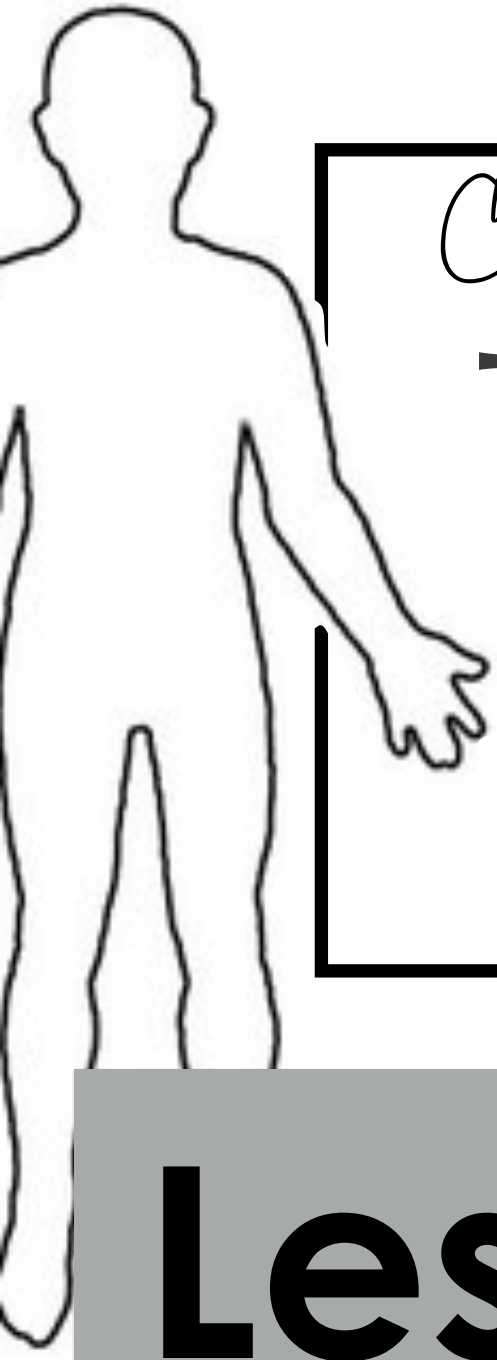
Heart PSA

What do you want to know?

What do you know?

Schema & Wonderings

SCIENCE



Combined Grade

Teaching Plan

Habitats
&
Human Body

Lesson #12

Combined Lesson #12 A

	First Half	Second Half
Prep	***Prep the task cards for students. These may be important to print in colour if possible.***	
Grade 4	***What is an endangered animal?*** ***Hand out the endangered animal reading.*** ***Read together with students.*** ***Students discuss with teacher the following questions:*** • ***What is an endangered species?*** • ***What makes an animal endangered?*** • ***What types of animals are endangered?*** • ***What can we do to make a difference?*** ***Show students the endangered species task cards. Talk about some of the different animals that are endangered.***	***Students will use the task cards to choose an animal that they are interested in learning more about.*** ***Have students research more information about their animal.*** bit.ly/ML-endangeredanimals *(If you do not have access to technology in the classroom it would be a good idea to print the articles from the research package and reduce the choices in which students can research.)* ***Students will use the endangered species task cards and brainstorm things that can be done to help increase the animal population. This will be presented as a PSA***
Grade 5	***Students will continue to work on their PSA from the previous lesson.***	***Students will share their PSA with the class.***
Notes	***This lesson for the Grade 4 students is an important lesson and transition from simple fact-finding and gaining knowledge and understanding to being about to apply some of what they have learned to make changes. The key ideas here are to focus on actions that need to be taken to prevent the loss of habitat and animals. This will be the integral step between learning and application necessary for the final inquiry project.*** ***Additional games such as SCOOT can be used by using the cards from the previous grade 4 lesson.***	

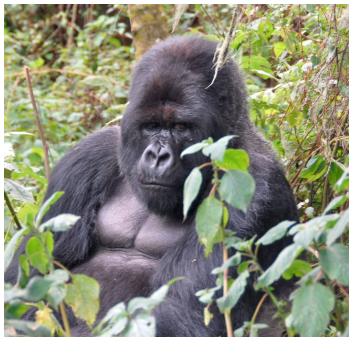
Combined Lesson #12B

	First Half	Second Half
Prep	***Prep the task cards for students. These may be important to print in colour if possible.***	
Grade 4	***Students will continue to research their endangered animal and what can be done to help to save it.*** ***They will use the PSA organizer to help them organize for their presentation to the class and use this time to prepare.***	***Students will present to the group all about their animal and what can be done to help to save it from extinction.***
Grade 5	***Students will create a review game for the different body systems that have been covered so far. Students can use the template provided to help them create the game (and make this activity easier and less time consuming to complete).*** ***Each student will create 16 (Five cards per body system with one extra card) cards for their game. Students will play the game using a variety of playing cards created by their classmates.***	***Students will play in groups of three or four.***
Notes	*This lesson for the Grade 4 students is an important lesson and transition from simple fact-finding and gaining knowledge and understanding to being about to apply some of what they have learned to make changes. The key ideas here are to focus on actions that need to be taken to prevent the loss of habitat and animals. This will be the integral step between learning and application necessary for the final inquiry project.* *Additional games such as SCOOT can be used by using the cards from the previous Grade 4 lesson.*	

Endangered Animals

Keeping Them Here

Endangered animals are animals that are at risk of disappearing from Earth. Sometimes there are very few animals left of different species. These animals are said to be endangered. There are many animals that have already become extinct like the dodo bird and one type of black rhino from West Africa.



Many other animals are endangered too. Animals such as the Amur leopard, the mountain gorilla, and the northern white rhino, are all very close to becoming extinct. There are only three northern white rhinos left in captivity in the world. Scientists are working very hard to increase the number of rhinos and other endangered animals.

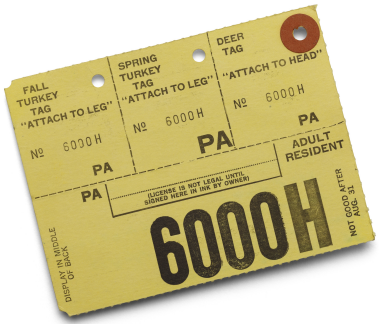
There are many different reasons why an animal becomes endangered. Sometimes the habitat for the animal changes and the animal is slow to adapt to these changes. Habitats are changed by humans and the environment. Other times animals are hunted too much and the animals are not able to keep their population strong.

Humans depend on wood. We need it to build our homes and make paper. Our need for wood is very high but this wood needs to come from somewhere. Animals also depend on trees as their homes or places they find their food.

We need to think about how cutting down the trees we need affects the animals that also depend on these trees. Clear-cutting is a practice that some logging companies use. They clear the land by cutting down trees. To prevent this, logging companies can agree to sustainable logging, making sure that they are responsible and keep the habitats in good health while still getting the wood they need. In Algonquin Park, in Ontario, Canada, trees are removed one at a time in many different areas of the park.

Endangered Animals

Keeping Them Here



Humans also have things they like to do for fun. Humans hunt and fish for animals. In North America most people don't need to hunt to eat, because now we have grocery stores. When someone hunts they take an animal out of the food chain. If too many of the same animal are taken out, it can have a bad impact on the animal species. Some animals are hunted as

that hunters can hang them on the wall. Many endangered animals are hunted because their fur or horns are valuable to sell. Illegal hunting is called poaching. Poaching is a serious concern around the world and hurts many endangered animals. Hunters have rules to follow about hunting, like how many can be hunted. Poachers ignore the rules and hunt what ever they want. This form of irresponsible hunting is a big danger to all animals and habitats. It can hurt the overall health of the habitat. Many animals like the northern white rhino are extremely endangered due to poaching. However not all hunting is bad. Hunting can also help keep the food chain balanced. Sometimes animals become overpopulated and this is bad for the habitat and the food chain. Hunting is encouraged and allowed to help maintain this balanced habitat. Many governments help to control hunting. First they find the current number of the animal. They learn how many of that animal is needed within the habitat. They only allow this to happen at certain times and place many other rules on hunters to be responsible when hunting. This is called sustainable hunting. Most hunters are very responsible and follow the rules to hunt sustainably and legally.

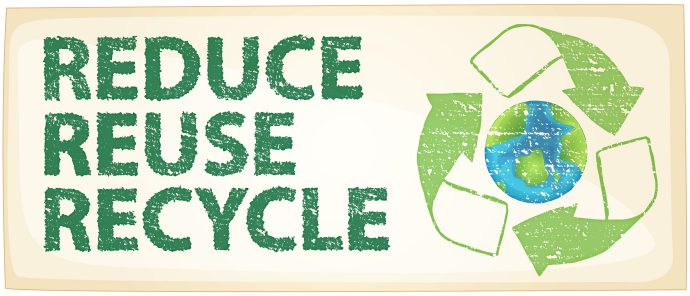
Endangered Animals

Keeping Them Here

There are some things that we can do to help protect different animals from becoming extinct. One way is to work with environmental groups such as the World Wildlife Federation to help protect the habitats for these different animals. You can donate to this group to support their efforts to protect these animals through their actions and their research.

Many zoos provide safe areas for some endangered animals to live in protected environments. Many zoos help to increase the population of these endangered animals by using science and medicine. However not all places that call themselves zoos are great to animals. Before you visit a zoo make sure that they are well-respected and committed to animal protection and conservation.

Another thing that we can do is to decrease our use of natural resources like, trees, animals, and minerals. When we overuse these resources we are taking too much away from the Earth's habitats. When this happens habitats are demolished for more farmland, housing for people, land for factories, and animals are over-hunted for food or profit. If we reduce what we need, reuse what we can, and recycle old things into new products, we can help to decrease the amount that we take, therefore preserving the Earth's natural habitat. Remember that a lot of the things we use and waste in North America are rooted in the environment, so reducing what we use is important.

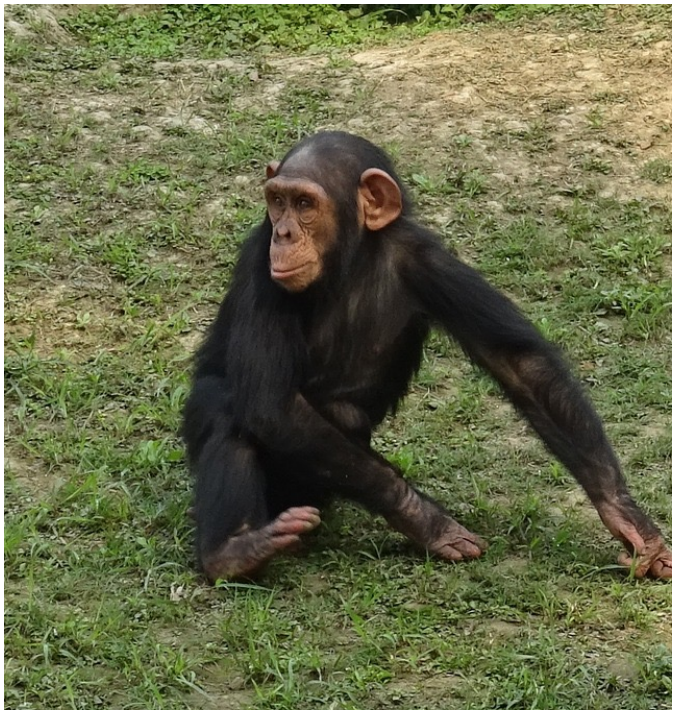


Want to learn about more animals that are endangered and what can be done to help to protect these animals? Follow the link or QR code.

bit.ly/ML-endangeredanimals

Chimpanzee

Status: Endangered
Habitat: Forests
Where: Congo, Africa



Blue Fin Tuna

Status: Endangered
Habitat: Ocean Habitat
Where: Coral Triangle, Western Pacific Ocean

Amur Leopard

Status: Critically Endangered
Habitat: Temperate Forests/ Mountains
Where: Amur-Heilong, Asia

Black Rhino

Status: Critically Endangered
Habitat: Deserts and Grasslands
Where: Namibia, East Africa

African Wild Dog

Status: Endangered
Habitat: Forests, Grasslands, Deserts
Where: Coastal East Africa

Hawksbill Turtle

Status: Critically Endangered
Habitat: Ocean
Where: Coastal East Africa and Coral Triangle in Western Pacific Ocean

Black Spider Monkey

Status: Endangered
Habitat: Tropical Forest
Where: Amazon, South America

Mountain Gorilla

Status: Critically Endangered
Habitat: Forests and Mountains
Where: Congo Basin, Africa

Bengal Tiger

Status: Endangered
Habitat: Forests, Grasslands
Where: India

Sumatran Elephant

Status: Critically Endangered
Habitat: Tropical Forests
Where: Borneo and Sumatra

Blue Whale

Status: Endangered
Habitat: Ocean
Where: Southern Chile, Gulf of California, Coral Triangle in the Pacific Ocean

Giant Panda

Status: Endangered
Habitat: Mountains and Forests
Where: Yangtze, China

PSA Guide

Habitats

Think about how you could inform someone about the risk of your animal becoming endangered and what they can do to help.

What I know about this animal	Animal's habitat facts

My Research

Facts about the **STATUS** of my animal

Why is my animal at risk of becoming endangered?

PSA Guide

Habitats

Think about how you could inform someone about the risk of your animal becoming endangered and what they can do to help

What things can be done to help my animal?

Focus on your PSA

Who is your audience?

What behaviour do you want people to change?

What is the goal of your PSA?

What will happen in your PSA? How will it be organized?

Body in Review

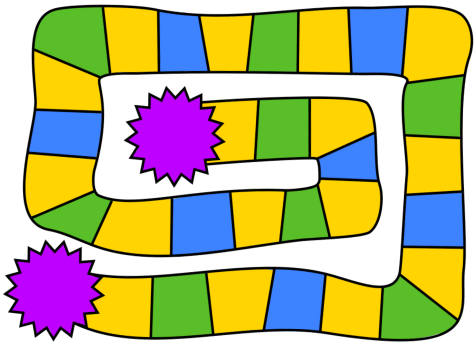
Make a Board Game

In this activity you will make a board game to review all that you have learned about the human body.

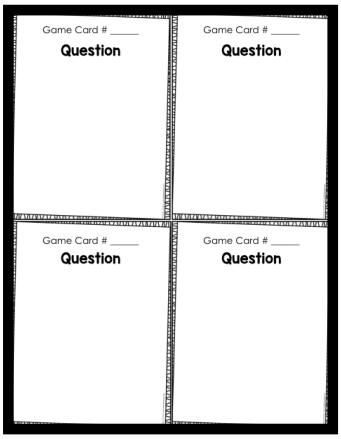
Look back at all that we have learned and make questions that could test your classmates' knowledge on what we have learned.

You Will Need

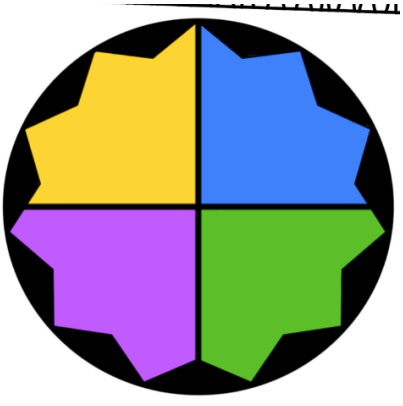
1. One board game template
   - Use the one provided or make up your own.



2. 16 game cards
   - Five questions about *The Circulatory System*
   - Five questions about *The Digestive System*
   - Five questions about *The Respiratory System*
   - One extra bonus question

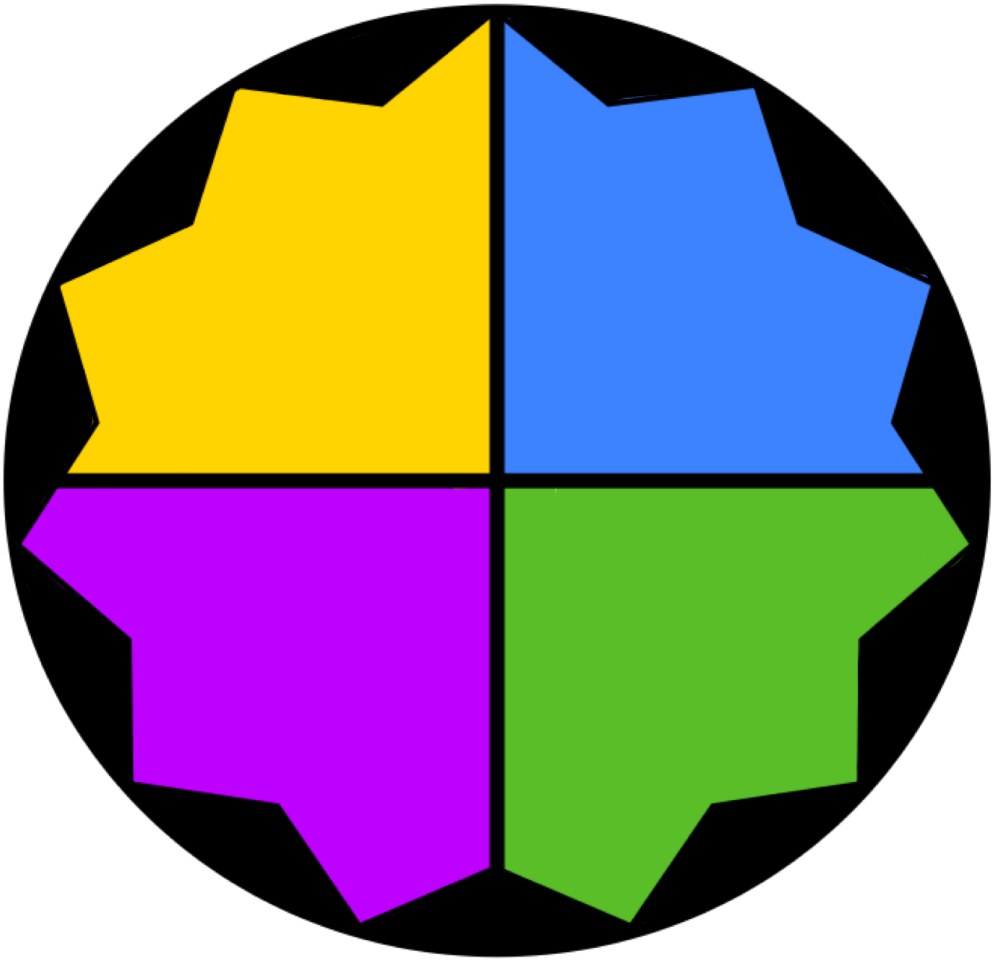


3. Dice or a spinner
4. The rules of the game
   - Read the rules before you begin to play the game.



RULES OF THE GAME

Decide who goes first. Before you move, the player to the left will ask you a question. If you get the question correct, then you can spin to move forward. If you get it incorrect, spin the spinner to see how many spaces you move backwards. The person to reach the finish first will be the winner.



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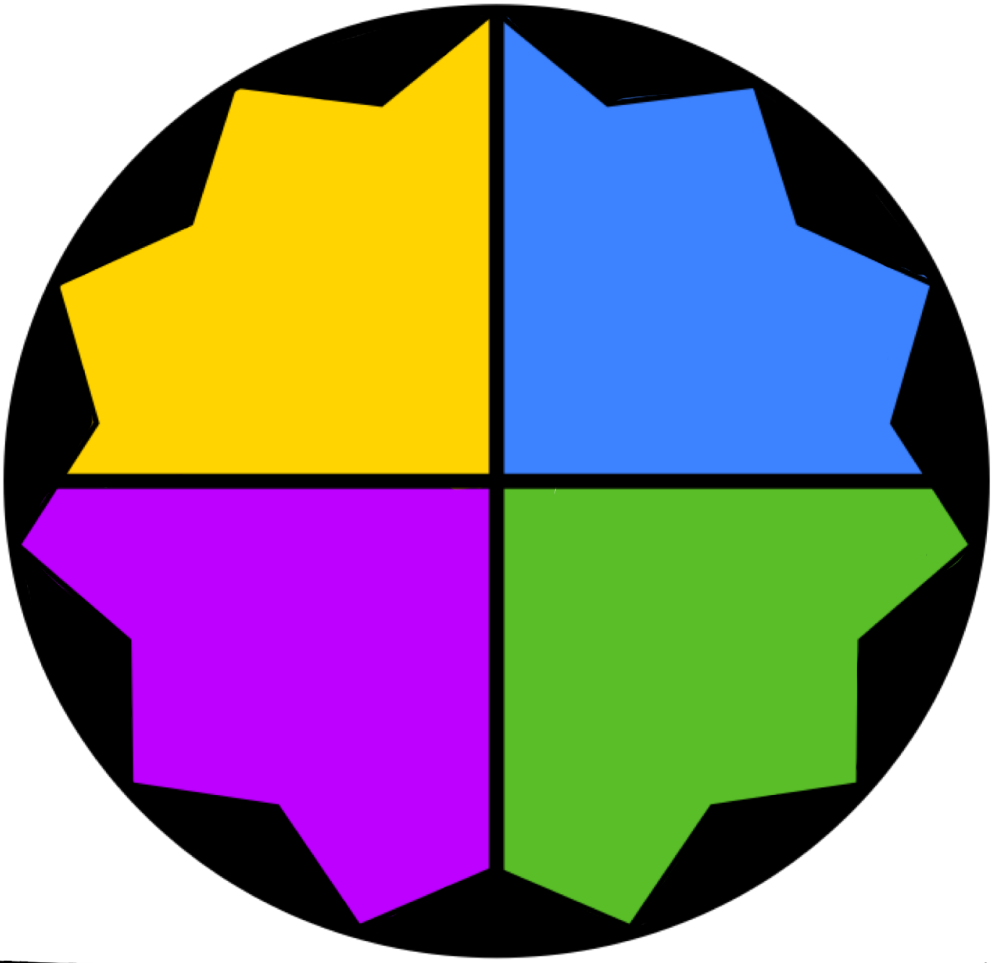

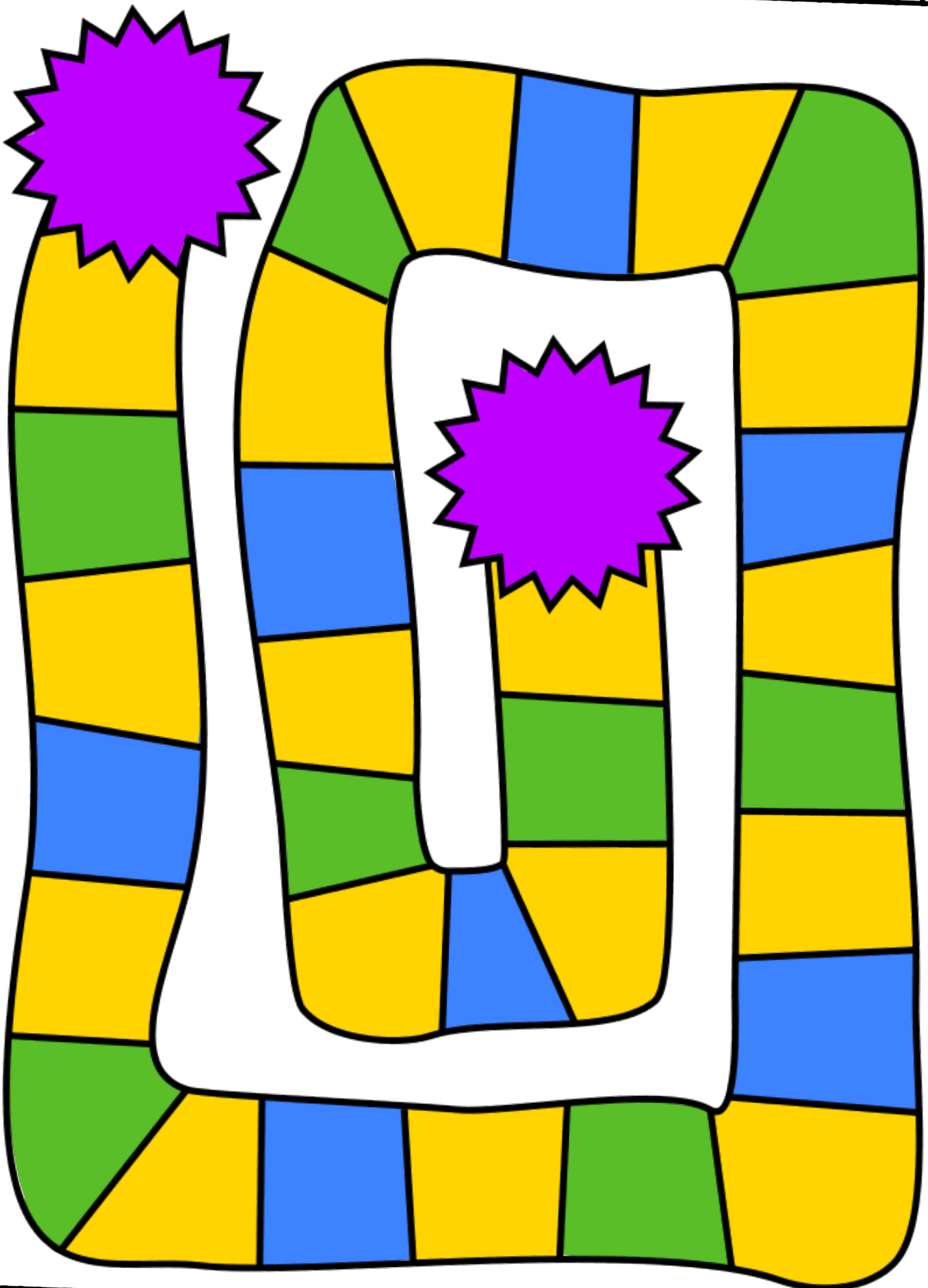

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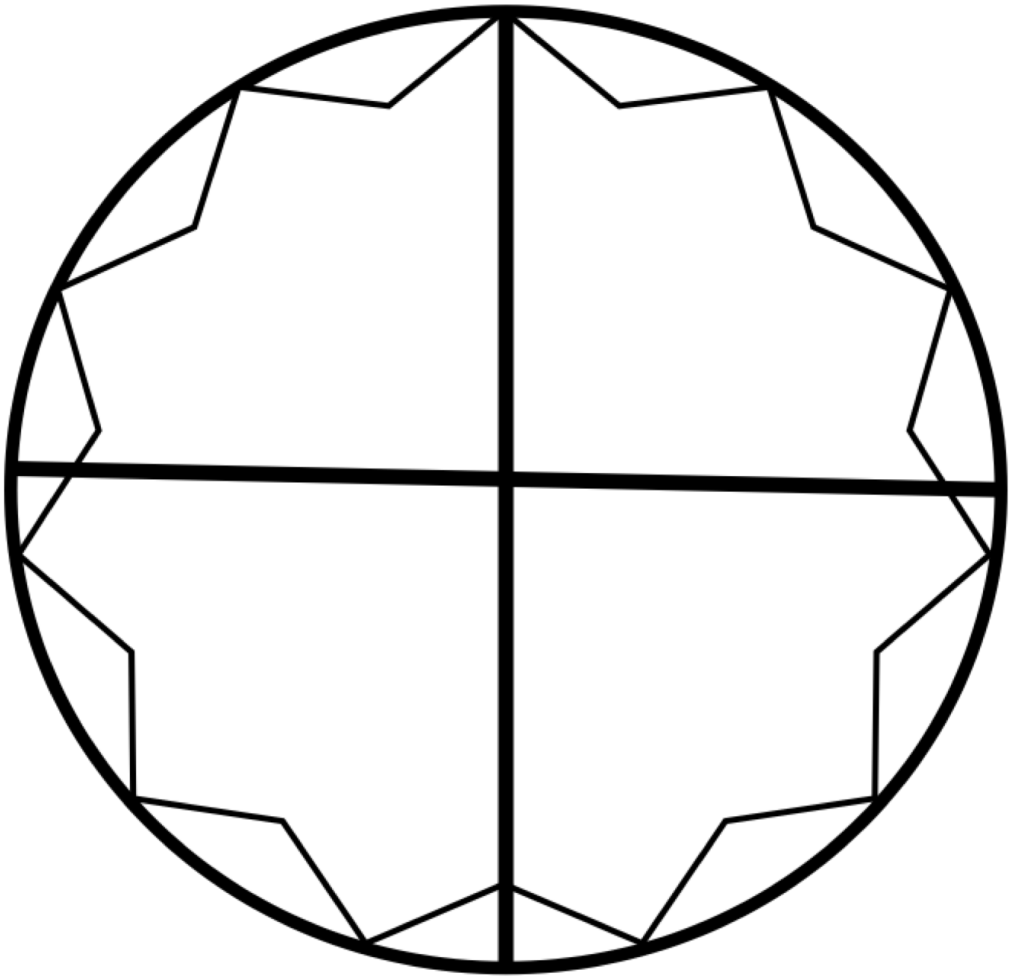

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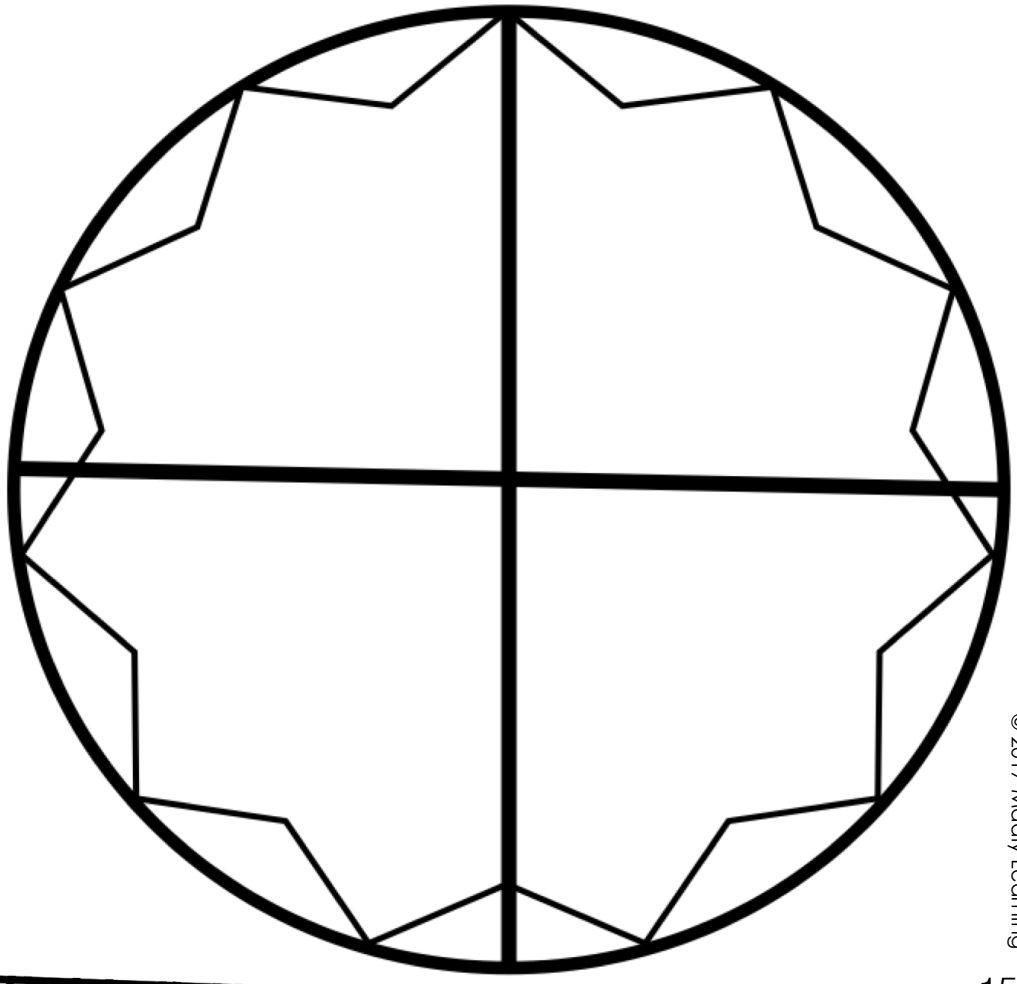

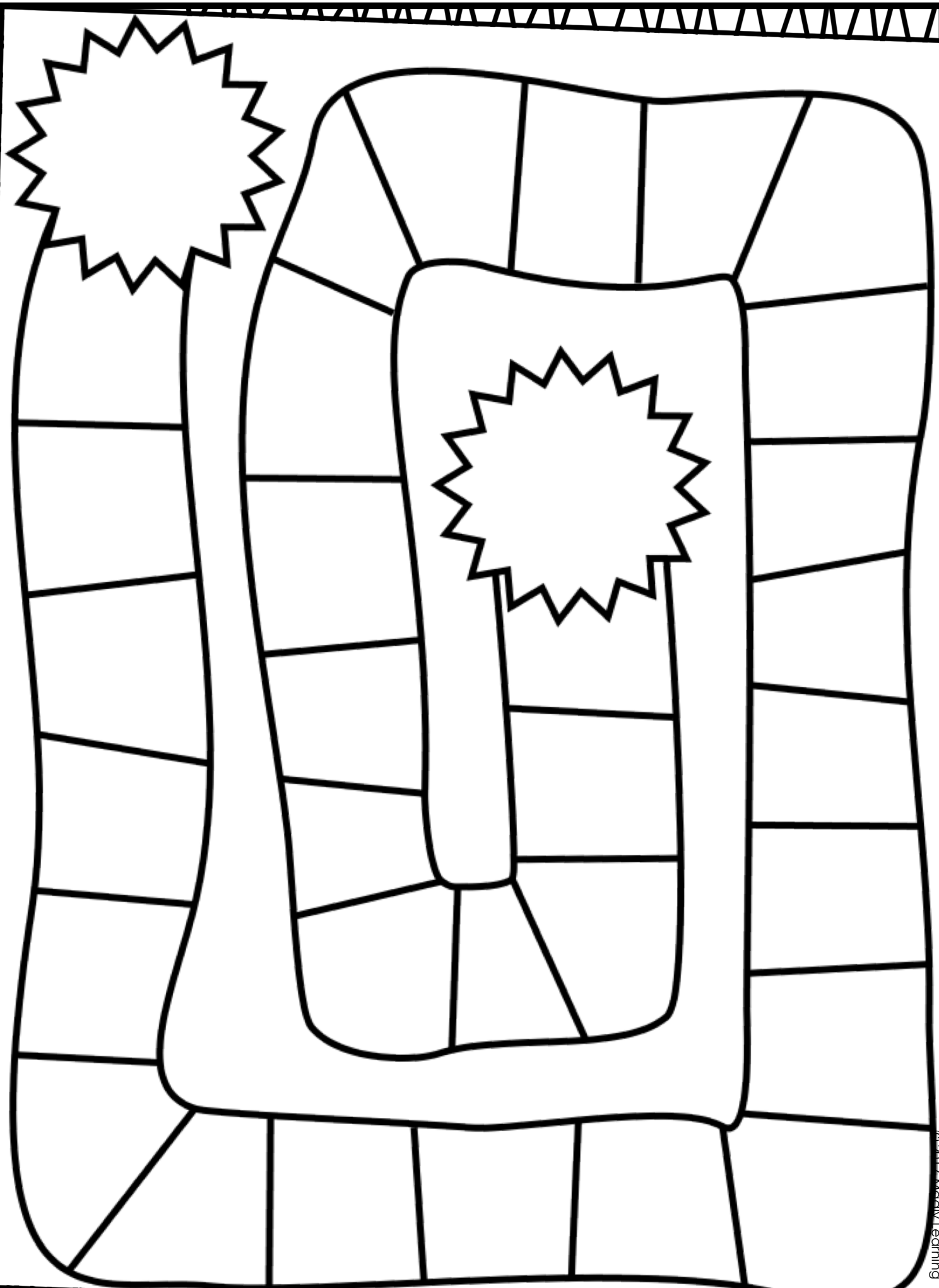

Game Card # _____

Question

Game Card # _____

Question

© 2017 Mindy Learning

Game Card # _____

Question

© 2017 Mindy Learning

Game Card # _____

Question

© 2017 Mindy Learning

Organ System: _____

Question

Answer:

Organ System: _____

Question

Answer:

Organ System: _____

Question

Answer:

Organ System: _____

Question

Answer:

SCOOT Card # _____

Habitat: _____

Question

_____

_____

_____

_____

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A)_____

B) _____

C)_____

SCOOT Card # _____

Habitat: _____

Question

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© 2017 Mindy Learning

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A)_____

B) _____

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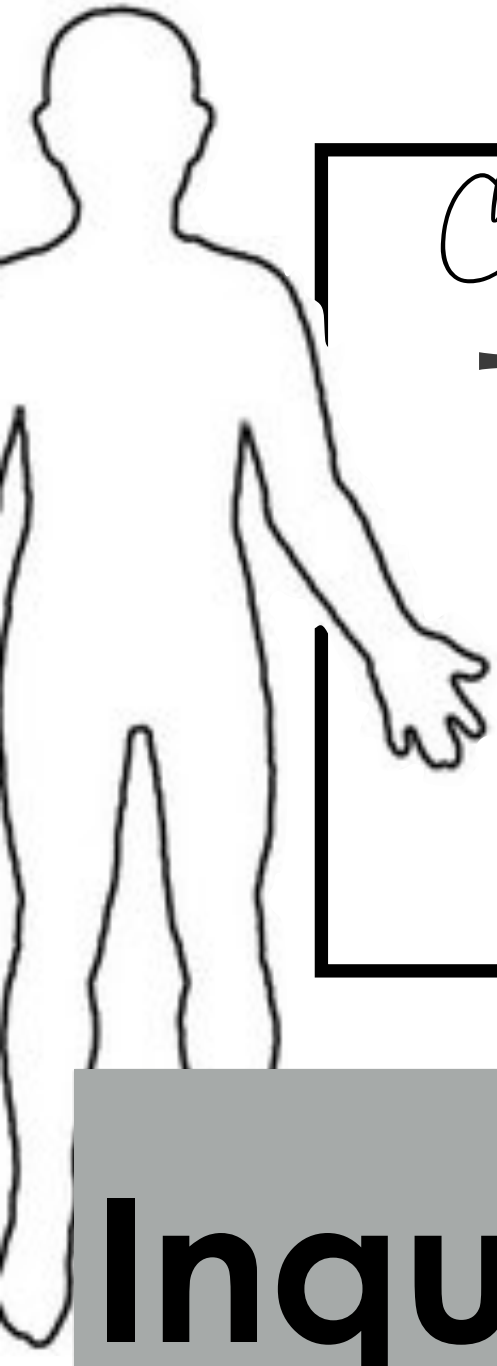
The Human Body Review

SCOOT Answers !

Choose four question cards from each of the topics below and record the correct answers on this page. Use a blank page to give to friends so that they can record their own answers to your questions. They should check their answers against your answer page.

	___ 1	____ 2	___ 3	___ 4
The Digestive System				
Digestive Diseases				
Respiratory System				
Respiratory Diseases				
Circulatory System - The Heart				
Circulatory System - Blood				
Heart Disease				

SCIENCE



Combined Grade

Teaching Plan

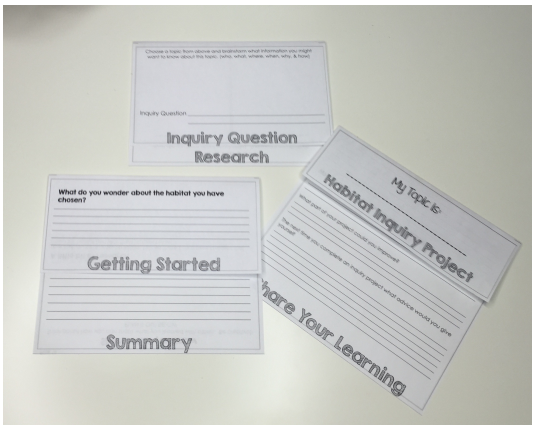
Habitats
&
Human Body

Inquiry Projects

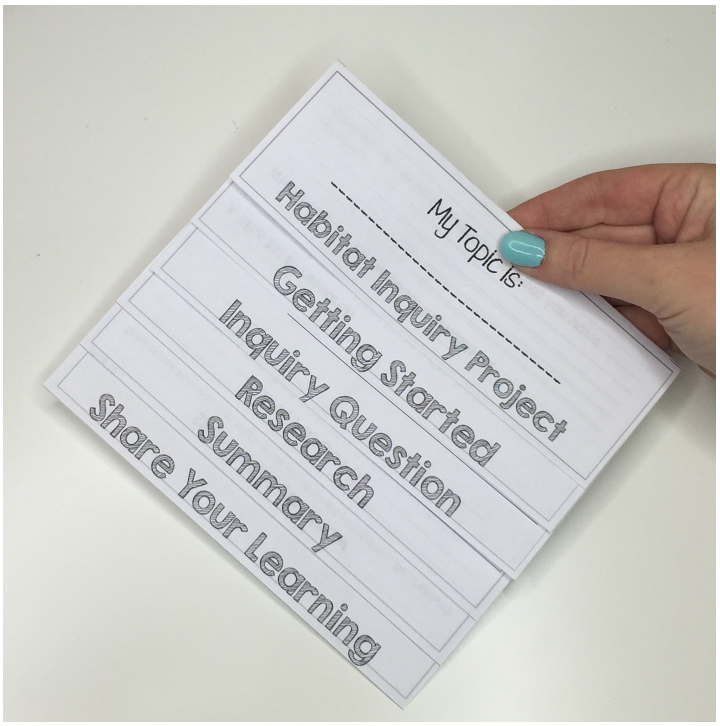
Final Inquiry Projects Booklet

Notes: For the final inquiry booklets please print the alternate file that is included. Print double-sided, making sure that the headings are on opposite ends, front and back (flip the second page upside down and photocopy as normal). Cut out around the outside and fold on the hash marks on the side of the page. Assemble the foldable so that you create a booklet like the one shown below. Staple at the crease and Voila.

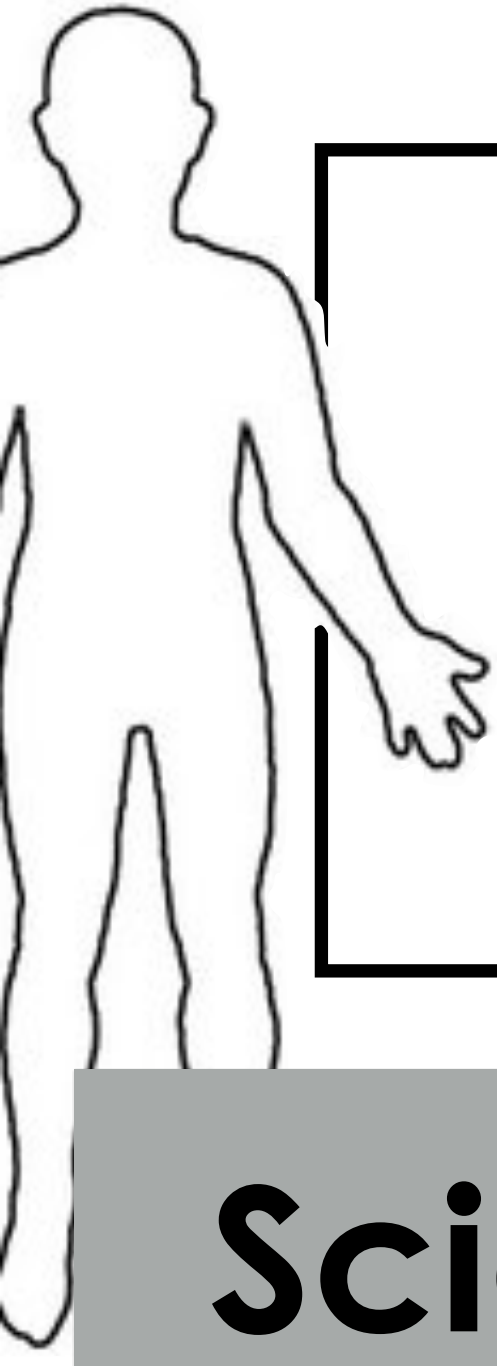
Fold Each page



Assembled Inquiry Booklet



SCIENCE



5th Grade

Inquiry Project

Human Body

Science Fair

Science Fair

Grade 5 - Human Body

TEACHER NOTES

Students will choose a body part and explore what happens when something goes wrong.

Science Fair - Getting Started

For students to get started on their science fair they will have to choose one of the organs that they have previously studied. They will review their notes on this system and begin to do some background research on their organ and different common diseases that may affect that organ.

Some ideas include but are not limited to…

- Pancreas - diabetes.
- Stomach - ulcers, acid reflux.
- Lungs - asthma, COPD, smoking, Cystic Fibrosis
- Intestines - constipation, Crohn's disease, celiac disease
- Heart - heart attack and stroke, heart murmur, coronary heart disease, hypertension

Students will use the flip book to record as they begin their inquiry project. To help guide them through the inquiry process.

- **Step1** - My Inquiry Topic - students will choose and organ system
- **Step 2** - Getting Started - students will identify background knowledge of this topic from previous lessons.
- **Step 3** - Students will conduct some preliminary research looking for at least three problems/diseases/negative impacts that affect their selected organ.
- **Step 4** - Students will brainstorm guiding questions that will help them conduct research. Students should think about possible sub topics. A classroom discussion about types of subtopics would be helpful at this point especially if your students do not have experience with inquiry. Many of the subtopics will be similar. "Healthy Organ" "Types," "Symptoms and Causes" "Treatment".
- **Step 5** - Once research is completed then students can write out the summary of their information.

Science Fair

Grade 5 - Human Body

TEACHER NOTES

Students will choose a body part and explore what happens when something goes wrong.

- **Step 6** - Students will then plan out their sharing of their information. I call this a "Show what you know" in my classroom. Students get to take this opportunity to share what they have learned in a creative way. Students can create a game, make a video, have a conversation with the teacher. The possibilities are endless. Allowing student choice is inherently differentiated. Try to avoid a one size fits all way to show their thinking. Some of the most interesting "Show what you know" projects were student created models of the digestive system using Minecraft.
- **Step 7** - Reflecting - provide students with time to reflect on what they learned and what their can improve on. Allow them time to identify if they missed something or made a mistake. Sometimes valuable learning can come from them telling you what they forgot to include. If they know that they forgot it then they need to know that they are missing it in the first place and that it is important. Allow for these conversations and reflection.

These inquiry booklets can be assembled by printing out, then photocopying double-sided. If you want to provide your students more space consider printing out on 11x17 paper by blowing up the original using the features of your school photocopier. My school copier is about 135%.

More Information

My Topic is:

_____

Human Body Inquiry Project

What do I already know about this human organ?

Reflection

We were learning about what happens when human organs experience a problem. In what way did your project meet this goal?

What part of your project are you most proud of?

What part of your project could you improve?

The next time you complete an inquiry project what advice would you give yourself?

Share Your Learning

Share what you know

Think about how you can share what you learned with others. Be creative!!
PLAN IT OUT BELOW

What do you wonder about the body organ you have chosen?

Getting Started

A little bit of research

Now that you have chosen a human organ that we studied, find three problems that affect this organ and write them in the boxes below.

Summary

Think About It

What did you learn about your human organ? Summarize your findings.

Choose a topic from above and brainstorm what information you might want to know about this topic. (who, what, where, when, why, & how)

Inquiry Question _____

_____

Inquiry Question

Research

The Human Body

Presenter's Name: _____

What are they presenting? _____

_____

	Level 1	Level 2	Level 3	Level 4
Knowledge of his/her chosen human organ and its role in the body.	Very poor understanding of his/her chosen human organ and its role in the body.	Student has some knowledge and understanding of their human organ	Students has a good knowledge and understanding of their human organ	Student has a thorough understanding of his/her chosen human organ and its role in the body.
Structure of his/her chosen human organ and its role in the body. (parts)	Missing important information about the parts of his/her chosen human organ and its role in the body. Labels/ identifies very few parts of the organ. Many things mislabelled.	Student knows some of the parts of his/her chosen human organ and its role in the body. Labels/ identifies some of the parts of the human organ. Some may be mislabelled.	Student knows most of the parts of his/her chosen human organ and its role in the body. Labels/ identifies most of the parts of the organ.	Student knows all of the specific parts of his/her chosen human organ and its role in the body. Labels/ identifies most of the parts of the organ.
Function of his/her chosen human organ and its role in the body. (how it works)	Student can describe how his/her human chosen organ works. Not in order.	Students can describe how his/her chosen human organ works and its role in the body. Steps should be in order. Includes a few details.	Students can describe how his/her chosen human organ works and its role in the body. Steps should be in order and include some specific details.	Student can describe how his/her chosen human organ works and its role in the body. Steps should be in order and include a high level of specific details.
Quality of Presentation	Student shows poor speaking skills. Student struggles to explain their work in a clear way.	Student shows some speaking skills Students can explain some of their work clearly.	Student is easily heard by audience. Student can explain their work clearly.	Student shows excellent speaking skills. Student can explain their work in a clear and organized way.

2 stars and a wish _____

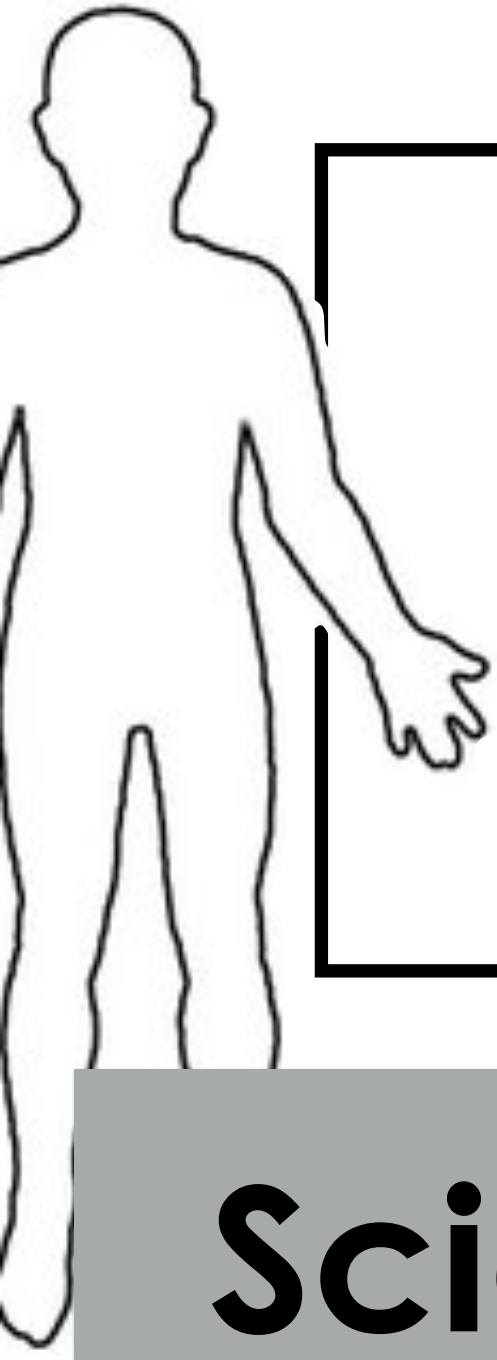
_____

_____

_____

This presentation was assessed by: _____

SCIENCE



4th Grade

Inquiry Project

Animal Habitats

Science Fair

Science Fair

Grade 4 - Habitats

TEACHER NOTES

Students will choose a habitat and explore problems faced by this habitat and possible solutions.

Science Fair - Getting Started

For students to get started on their science fair they will have to choose one of the habitats that they have previously studied. They will be creating a visual representation of their habitat that helps them to explain the various factors of a habitat. They will then look closely at problems faced by that habitat including destruction and endangered animals.
Have students brainstorm the different questions that they should be able to answer about their habitat model. Some ideas they might generate are:

- What does my habitat look like?
- What plants are in my habitat?
- Describe some food chains/food webs in my habitat.
- Describe the physical features of my habitat.
- How do humans impact this habitat (both positive and negative consequences)?
- Which animals in this habitat are endangered and how can they can be protected?

Students will use the flip book to record as they begin their inquiry project. To help guide them through the inquiry process.

- **Step1** - My Inquiry Topic - students will choose a habitat to learn more about it and the various factors that are impacting animals. This should be a more in-depth look at this habitat and the risks that are impacting the habitat, plants, animals and people.
- **Step 2** - Getting Started - students will identify background knowledge of this topic from previous lessons.
- **Step 3** - Students will conduct some preliminary research looking for the answers to identified learning goals co-created with students.
- **Step 4** - Students will brainstorm guiding questions that will help them conduct research. Students should think about possible subtopics. A classroom discussion about types of subtopics would be helpful at this point especially if your students do not have experience with inquiry. Many of the subtopics will be similar. “animals," “plants," “location," “human impacts," “endangered animals," , etc.
- **Step 5** - Once research is completed then students can write out their summary of their information.

Science Fair

Grade 4 - Habitats

TEACHER NOTES

Students will choose a habitat and explore problems faced by this habitat and possible solutions.

- **Step 6** - Students will then plan out their sharing of their information. I call this a "Show what you know" in my classroom. Students get to take this opportunity to share what they have learned in a creative way. Students can create a game, make a video, or have a conversation with the teacher. The possibilities are endless. Allowing student choice is inherently differentiated. Try to avoid a one size fits all way to show their thinking. Some of the most interesting "Show what you know" projects were student created models of habitats using multiple mediums.
- **Step 7** - Reflecting (this will happen after they have shared their project with others) - provide students with time to reflect on what they learned and what their can improve on. Allow them time to identify if they missed something or made a mistake. Sometimes valuable learning can come from them telling you what they forgot to include. If they know that they forgot it then they need to know that they are missing it in the first place and that it is important. Allow for these conversations and reflection.

These inquiry booklets can be assembled by printing out, then photocopying double-sided. If you want to provide your students more space consider printing out on 11x17 paper by blowing up the original using the features of your school photocopier. My school copier is about 135%.

My Topic is:

_____

Habitat Inquiry Project

What do I already know about this habitat?

Reflection

We were learning about different habitats and how the life within the habitat is impacted by changes to the environment. In what way did your project meet this goal?

What part of your project are you most proud of?

What part of your project could you improve?

The next time you complete an inquiry project what advice would you give yourself?

Share Your Learning

Share what you know

Think about how you can share what you learned with others. Be creative!!
PLAN IT OUT BELOW

What do you wonder about the habitat you have chosen?

A little bit of research

Now that you have chosen a habitat that we studied, find three problems that affect this habitat and write them in the boxes below.

Summary

Think About It

What did you learn about your habitat? Summarize your findings.

Choose a topic from above and brainstorm what information you might want to know about this topic. (who, what, where, when, why, & how)

Inquiry Question _____

_____

Inquiry Question

Research

Habitats

Presenter's Name: _____

What are they presenting? _____

_____

	Level 1	Level 2	Level 3	Level 4
Knowledge and understanding of **key features** of his/her chosen habitat	Very poor understanding of his/her chosen habitat.	Student has some knowledge and understanding of their chosen habitat.	Students has a good knowledge and understanding of their chosen habitat.	Student has a thorough understanding of his/her chosen habitat.
Thinking: Student is able to describe how different parts of the habitat are related to each other.	Students can describe with limited effectiveness how parts of the habitat (animals, plants, weather, location) are interrelated.	Students can describe with some effectiveness how parts of the habitat (animals, plants, weather, location) are interrelated.	Student can describe with considerable effectiveness how parts of the habitat (animals, plants, weather, location) are interrelated.	Student can describe with thorough effectiveness how parts of the habitat (animals, plants, weather, location) are interrelated.
Application: Student can apply their knowledge of their chosen habitat to identify the positive and negative consequences of human interaction.	Student struggles to apply their knowledge of the basic features of their chosen habitat and identifies with limited knowledge how humans impact the habitat in both positive and negative ways.	Student applies their knowledge of the basic features of the habitat and identifies some ways in which humans impact their habitat in both positive and negative ways. May include misinterpretation.	Student applies their knowledge of the basic features of their habitat and identifies a few ways of how humans impact their habitat in both positive and negative ways.	Student applies their knowledge of many features of their habitat and identifies multiple ways humans impact the habitat in both positive and negative ways.
Quality of Presentation	Student shows poor speaking skills. Student struggles to explain their work in a clear way.	Student shows some speaking skills. Student can explain some of their work clearly.	Student is easily heard by audience. Student can explain their work clearly.	Student shows excellent speaking skills. Student can explain their work in a clear and organized way.

2 stars and a wish _____

_____

_____

_____

This presentation was assessed by: _____

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I would love to hear from you

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MY ANIMAL RESEARCH

What is my animal	
What does my animal look like	
What are some of the animal adaptations	
Describe the food chain and food web of the animal	
Describe the habitat of your animal	
Describe why your animal cannot live in two other habitats.	
Describe how humans impact your animal	