

# Life Science

\_\_\_\_ Grade 5 \_\_\_\_

Written by Tracy Bellaire

The experiments in this book fall under ten topics that relate to two aspects of life science: **Needs and Characteristics of Living Things; and Exploring the Senses**. In each section you will find teacher notes designed to provide you guidance with the learning intention, the success criteria, materials needed, a lesson outline, as well as provide some insight on what results to expect when the experiments are conducted. Suggestions for differentiation are also included so that all students can be successful in the learning environment.



**Tracy Bellaire** is an experienced teacher who continues to be involved in various levels of education in her role as Differentiated Learning Resource Teacher in an elementary school in Ontario. She enjoys creating educational materials for all types of learners, and providing tools for teachers to further develop their skill set in the classroom. She hopes that these lessons help all to discover their love of science!

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## Learning Intentions

	Organs in the Body	Systems in the Body – Pt. 1	Systems in the Body – Pt. 2	Systems in the Body – Pt. 3	Systems at Work	Healthy Eating	What's in Your Food?	Wetlands	Survival in the Wetlands	Protecting Our Wetlands
<b>Knowledge and Understanding Content</b>										
Determine the location of the main organs of the human body, and define their function	•									
Identify the major parts of the human skeletal system and the muscular system; determining their function and location		•								
Identify the main parts of the circulatory system and the respiratory system; determining their function and location			•							
Identify the main parts of the nervous system and the digestive system; determining their function and location				•						
Describe how the human body's main systems work altogether; design and create a model of the human body					•					
Identify types of nutrients in foods, determine how they maintain our health; create and evaluate a daily menu, aligning it with food guide recommendations						•				
Evaluate the nutritional value of food products by reading and interpreting food labels							•			
Describe the characteristics of wetlands and recognize the living and non-living things that inhabit a wetland								•		
Identify and create wetland food chains and food webs; determine the role of producers, consumers, and decomposers in a wetland									•	
Recognize the benefits of wetland areas, identify the threats facing them, and describe what can be done to protect and conserve them										•
<b>Thinking Skills and Investigation Process</b>										
Make predictions, formulate questions, and plan an investigation	•		•	•	•					•
Gather and record observations and findings using drawings, tables, written descriptions	•	•	•	•	•	•	•	•	•	•
Recognize and apply safety procedures in the classroom	•	•	•	•	•	•	•	•	•	•
<b>Communication</b>										
Communicate the procedure and conclusions of investigations using demonstrations, drawings, and oral or written descriptions, with use of science and technology vocabulary	•	•	•	•	•	•	•	•	•	•
<b>Application of Knowledge and Skills to Society and the Environment</b>										
Assess the positive and negative effects of social and environmental factors on human health, suggesting ways to lessen the harmful effects					•					
Evaluate the positive and negative effects of technology and technological advances on human health					•					
Assess the positive and negative effects of media sources on human health							•			

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# Teacher Assessment Rubric

Student's Name: \_\_\_\_\_

Date: \_\_\_\_\_

Success Criteria	Level 1	Level 2	Level 3	Level 4
<b>Knowledge and Understanding Content</b>				
Demonstrate an understanding of the concepts, ideas, terminology definitions, procedures and the safe use of equipment and materials	Demonstrates limited knowledge and understanding of the content	Demonstrates some knowledge and understanding of the content	Demonstrates considerable knowledge and understanding of the content	Demonstrates thorough knowledge and understanding of the content
<b>Thinking Skills and Investigation Process</b>				
Develop hypothesis, formulate questions, select strategies, plan an investigation	Uses planning and critical thinking skills with limited effectiveness	Uses planning and critical thinking skills with some effectiveness	Uses planning and critical thinking skills with considerable effectiveness	Uses planning and critical thinking skills with a high degree of effectiveness
Gather and record data, and make observations, using safety equipment	Uses investigative processing skills with limited effectiveness	Uses investigative processing skills with some effectiveness	Uses investigative processing skills with considerable effectiveness	Uses investigative processing skills with a high degree of effectiveness
<b>Communication</b>				
Organize and communicate ideas and information in oral, visual, and/or written forms	Organizes and communicates ideas and information with limited effectiveness	Organizes and communicates ideas and information with some effectiveness	Organizes and communicates ideas and information with considerable effectiveness	Organizes and communicates ideas and information with a high degree of effectiveness
Use science and technology vocabulary in the communication of ideas and information	Uses vocabulary and terminology with limited effectiveness	Uses vocabulary and terminology with some effectiveness	Uses vocabulary and terminology with considerable effectiveness	Uses vocabulary and terminology with a high degree of effectiveness
<b>Application of Knowledge and Skills to Society and Environment</b>				
Apply knowledge and skills to make connections between science and technology to society and the environment	Makes connections with limited effectiveness	Makes connections with some effectiveness	Makes connections with considerable effectiveness	Makes connections with a high degree of effectiveness
Propose action plans to address problems relating to science and technology, society, and environment	Proposes action plans with limited effectiveness	Proposes action plans with some effectiveness	Proposes action plans with considerable effectiveness	Proposes action plans with a high degree of effectiveness





## Student Self Assessment Rubric

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Put a check mark ✓ in the box that best describes you:

	Always	Almost Always	Sometimes	Needs Improvement
I listened to instructions.				
I was focused and stayed on task.				
I worked safely.				
My answers show thought, planning, and good effort.				
I reported the results of my experiment.				
I discussed the results of my experiment.				
I used science and technology vocabulary in my communication.				
I connected the material to my own life and the real world.				
I know what I need to improve.				

1. I liked \_\_\_\_\_

\_\_\_\_\_

2. I learned \_\_\_\_\_

\_\_\_\_\_

3. I want to learn more about \_\_\_\_\_

\_\_\_\_\_



# INTRODUCTION

The activities in this book have two intentions: to teach concepts related to life science and to provide students the opportunity to apply necessary skills needed for mastery of science and technology curriculum objectives.

Throughout the experiments, the scientific method is used. The scientific method is an investigative process which follows five steps to guide students to discover if evidence supports a hypothesis.

**1. Consider a question to investigate.**

For each experiment, a question is provided for students to consider. For example, “How does your diaphragm work to help you breathe in air?”

**2. Predict what you think will happen.**

A hypothesis is an educated guess about the answer to the question being investigated. For example, “I believe that the diaphragm muscle expands and contracts to cause the lungs to expand and contract, which is done by breathing in and out”. A group discussion is ideal at this point.

**3. Create a plan or procedure to investigate the hypothesis.**

The plan will include a list of materials and a list of steps to follow. It forms the “experiment”.

**4. Record all the observations of the investigation.**

Results may be recorded in written, table, or picture form.

**5. Draw a conclusion.**

Do the results support the hypothesis? Encourage students to share their conclusions with their classmates, or in a large group discussion format.

The experiments in this book fall under ten topics that relate to three aspects of life science: **Human Organ and Body Systems, Maintaining a Healthy Body, and Wetland Ecosystems.** In each section, you will find teacher notes designed to provide you guidance with the learning intention, the success criteria, materials needed, a lesson outline, as well as provide some insight on what results to expect when the experiments are conducted. Suggestions for differentiation are also included so that all students can be successful in the learning environment.

## ASSESSMENT AND EVALUATION:

Students can complete the Student Self-Assessment Rubric in order to determine their own strengths and areas for improvement. Assessment can be determined by observation of student participation in the investigation process. The classroom teacher can refer to the Teacher Assessment Rubric and complete it for each student to determine if the success criteria outlined in the lesson plan has been achieved. Determining an overall level of success for evaluation purposes can be done by viewing each student’s rubric to see what level of achievement predominantly appears throughout the rubric.

# ORGANS IN THE BODY

## LEARNING INTENTION:

Students will learn about the main organs of the human body, in terms of their location in the body and their function.

## SUCCESS CRITERIA:

- research the location of five of the major organs inside the human body
- research the location of other organs of the human body
- define the function of some of the human body's organs

## MATERIALS NEEDED:

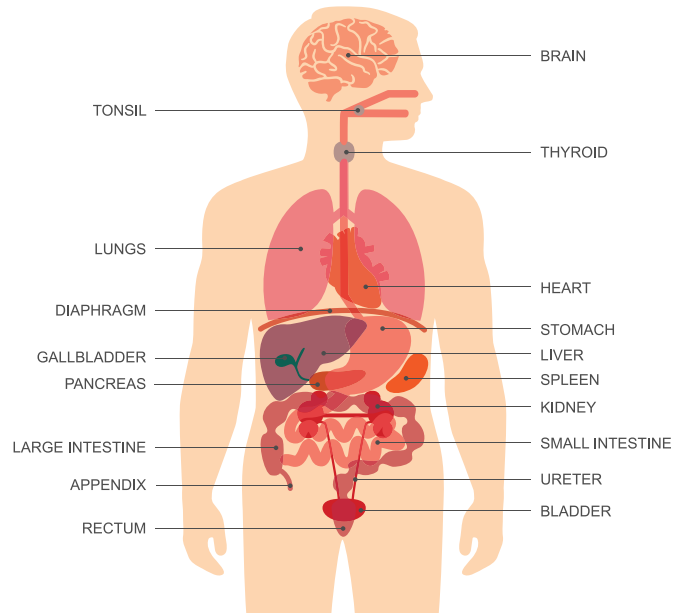
- a copy of "A Look Inside" worksheet 1, 2, 3, 4, and 5 for each student
- access to the internet or local library
- board game called 'Operation' (*optional*)
- pencils, pencil crayons, markers, chart paper, poster paper

## PROCEDURE:

**\*This lesson can be done as one long lesson, or be divided into three shorter lessons.**

1. Give students worksheets 1, 2, 3, 4, and 5. They can visit the local library or access the internet to gather information on the body's major internal organs.

For the location of some of the body's organs, reference this diagram:



## DIFFERENTIATION:

Slower learners may benefit by working as a small group with teacher support and direction to complete worksheets 4 and 5. To lessen the work load, each student in the group could be assigned an organ to research, and then share the findings with the small group in order to complete the worksheet. *Responses for the group could be recorded on chart paper and posted in the classroom for all students to reference in future lessons.*

For enrichment, faster learners could:

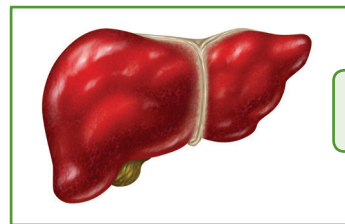
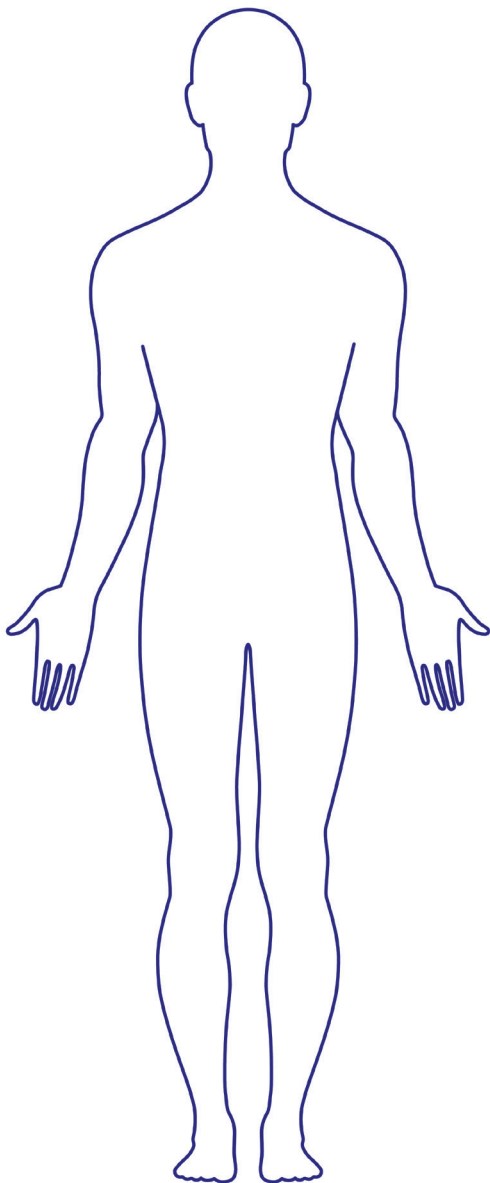
- play the game of Operation (by Hasbro Games)
- choose a body part or organ from the game that they would like to learn more about and research two or three facts about it
- (working with a partner), on large poster paper, outline their body then draw and label the main organs in their body



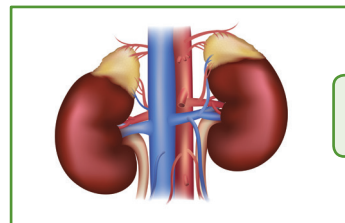
## A Look Inside

The **brain**, the **heart**, the **lungs**, the **kidneys**, and the **liver** are organs inside the human body. Visit a library or access the internet to find out more about them and where they are in your body.

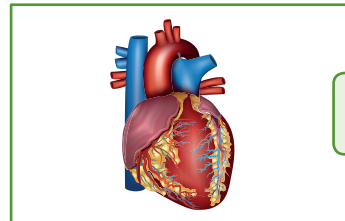
Draw a line from each organ to show where it is inside the body.



liver



kidneys



heart



brain



lungs

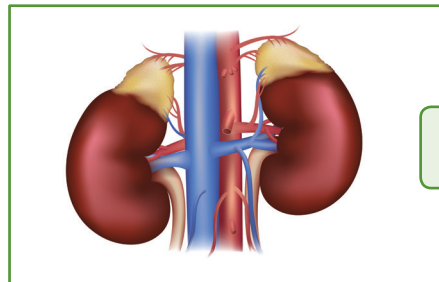
Draw a line from each organ to match what it does inside your body.

This organ is the nerve center in your body. It tells you what to think and how to act.



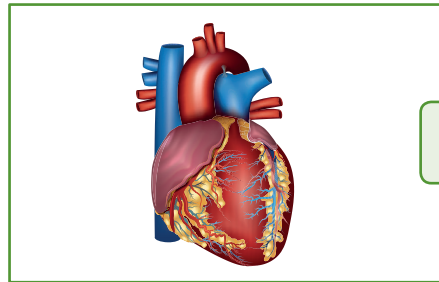
liver

This organ is like a pump inside your body. It works hard when you are moving fast.



kidneys

This pair of organs filters waste from the blood and water from the body. They get rid of it as urine.



heart

This organ is like a pair of air filled bags. You need them to breathe.



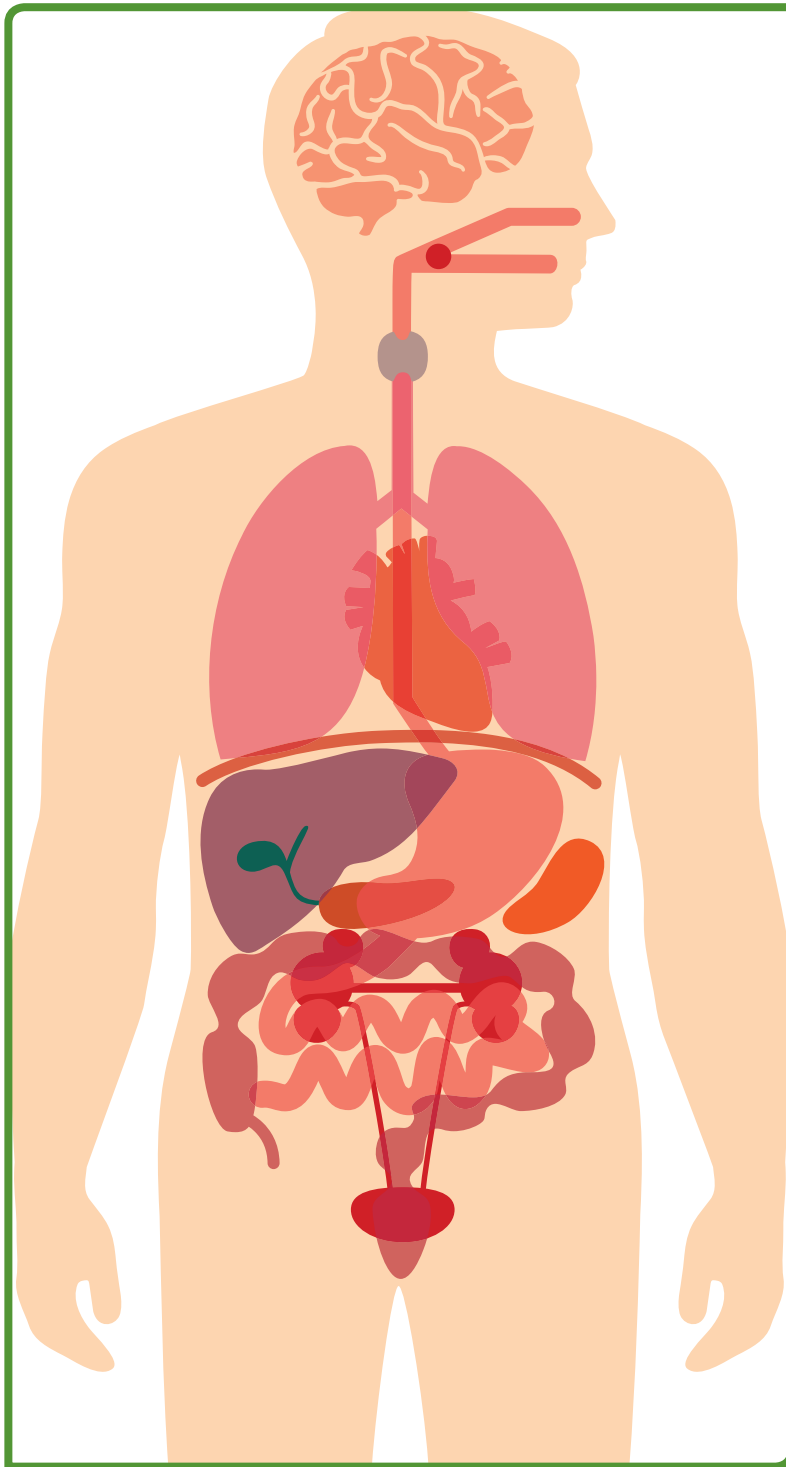
brain

This organ takes poisons out of the blood. It is the largest organ inside the human body.



lungs

Take an even closer look inside at more of the human body's organs. Do some research to find out the location of the organs listed below. Draw a line from each organ name to show where it is inside the body.

**stomach****large intestine****small intestine****gallbladder****bladder****skin**

Continue your research to define what these organs do inside the human body.

**The stomach** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**The large intestine** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**The small intestine** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



Continue your research to define what these organs do inside the human body.

**The gallbladder** \_\_\_\_\_

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**The bladder** \_\_\_\_\_

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**The skin** \_\_\_\_\_

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