

Life Science

____ Grade 1 ____

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!

Copyright © On The Mark Press 2017

This publication may be reproduced under licence from Access Copyright, or with the express written permission of On The Mark Press, or as permitted by law. All rights are otherwise reserved, and no part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, scanning, recording or otherwise, except as specifically authorized. “We acknowledge the financial support of the Government of Canada through the Canada Book Fund for this project.”

All Rights Reserved
Printed in Canada

Published in Canada by:
On The Mark Press
Belleville, ON
www.onthemarkpress.com

Funded by the
Government
of Canada

Canada



Learning Intentions

	In Your Environment	In the Animal Kingdom	The Plant World	The Human Factor	Needs Intertwined!	Explore Your Senses	Applying Your Senses	Animal Senses	Protecting the Senses	The Human Body
Knowledge and Understanding Content										
Identify things existing that are in their environment, classify them as living or non-living	•									
Discuss, compare, and sort physical characteristics of a variety of animals, research an animal of choice		•								
Identify the main physical characteristics of plants and explain how plants use them to meet their needs			•							
Recognize physical characteristics of a human; identify and compare the basic needs of a human to other living things				•						
Recognize what living things provide for each other; describe the problems that could result from the loss of some kinds of living things					•					
Identify the five senses and recognize how they are used to identify objects in our world						•				
Demonstrate how the senses are applied to describe and sort things in our environment							•			
Research and describe how animals use their senses to survive in the natural world								•		
Identify the protective parts of the eye and ear; and recognize the importance of protecting our senses that contribute to safety in daily living activities									•	
Determine the location and function of major parts in the human body and explain how they are used to meet our needs and explore our world										•
Thinking Skills and Investigation Process										
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	•	•	•	•	•	•	•	•	•	•
Communication										
Communicate the procedure and conclusions of investigations using demonstrations, drawings, and oral or written descriptions, with use of science and technology vocabulary	•	•	•	•	•	•	•	•	•	•
Application of Knowledge and Skills to Society and the Environment										
Create an action plan to help maintain a healthy environment for living and non-living things	•								•	
Describe problems that could result from the loss of some kinds of living things, and who would be affected in certain ways					•					

TABLE OF CONTENTS

AT A GLANCE	2
TABLE OF CONTENTS	3
TEACHER ASSESSMENT RUBRIC	4
STUDENT SELF-ASSESSMENT RUBRIC	5
INTRODUCTION	6
IN YOUR ENVIRONMENT	
Teacher Notes	7
Student Activities	8
IN THE ANIMAL KINGDOM	
Teacher Notes	15
Student Activities	16
THE PLANT WORLD	
Teacher Notes	22
Student Activities	24
THE HUMAN FACTOR	
Teacher Notes	34
Student Activities	36
NEEDS INTERTWINED!	
Teacher Notes	45
Student Activities	46
EXPLORE YOUR SENSES	
Teacher Notes	52
Student Activities	53
APPLYING YOUR SENSES	
Teacher Notes	61
Student Activities	63
ANIMAL SENSES	
Teacher Notes	71
Student Activities	72
PROTECTING THE SENSES	
Teacher Notes	77
Student Activities	79
THE HUMAN BODY	
Teacher Notes	89
Student Activities	90



Teacher Assessment Rubric

Student's Name: _____

Date: _____

Success Criteria	Level 1	Level 2	Level 3	Level 4
Knowledge and Understanding Content				
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
Thinking Skills and Investigation Process				
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
Communication				
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
Application of Knowledge and Skills to Society and Environment				
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 am a good listener.				
I followed the directions.				
I stayed on task and finished on time.				
I remembered safety.				
My writing is neat.				
My pictures are neat and colored.				
I reported the results of my experiment.				
I discussed the results of my experiment.				
I know what I am good at.				
I know what I need to work on.				

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, “What makes living things different from non-living things?”

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 living things need air, water, food, and shelter to live. Non-living things exist without needs”. 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 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.

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.

IN YOUR ENVIRONMENT

LEARNING INTENTION:

Students will learn about living and non-living things that are in their environment and the importance of showing care for their environment.

SUCCESS CRITERIA:

- identify things existing in your environment
- classify things as living or non-living, describing the difference
- recognize actions that show care for your school, your home, and your community
- create a personal action plan to keep your environment healthy

MATERIALS NEEDED:

- a copy of “What’s In Your Environment?” worksheet 1, 2, 3, and 4 for each student
- a copy of “Helping the Environment” worksheet 5 for each student
- a copy of “How Will You Help Mother Earth?” worksheet 6 for each student
- a copy of “Spread the Word!” worksheet 7 for each student
- chart paper, markers, pencil crayons, clipboards, pencils

PROCEDURE:

***This lesson can be done as one long lesson, or done in two or three shorter lessons.**

1. Engage students in a “knee to knee, eye to eye” activity where they turn and talk with a partner to brainstorm a definition of ‘environment’. Come back as a large group, record students’ ideas on chart paper. Discuss the concept of ‘what is environment?’ to ensure all students’ understanding and to reach a consensus of its meaning.
2. Give students worksheet 1, a clipboard and a pencil. Take them outside to the school yard to look for things that are in their environment.

3. Give students worksheet 2, a clipboard and a pencil. Take them outside to a local park or forested/ wild area to look for things that are in their environment.
4. Upon returning to the classroom, divide students into pairs and give each pair worksheet 3. They will share with their partner three things that they found to be in their environment. They will also engage in a ‘Think-Pair-Share’ activity to discuss the definition of a living thing, of a non-living thing, and explain the differences. Come back together as a large group to discuss and record their ideas on chart paper. (**Living things show characteristics such as growth, movement, respiration, reproduction, environmental adaptation and response.**)
5. Give students worksheet 4. Students will sort the things that they drew on worksheets 1 and 2 into the boxes on worksheet 4, categorizing them as either living or non-living.
6. Engage students in a discussion about the importance of a healthy environment.
 - **What happens to living things when their environment is not healthy?**
 - **What are some ways that people harm other living things?**
 - **What are some ways that people help other living things?**
7. Give students worksheets 5, 6, and 7 to complete.

DIFFERENTIATION:

Slower learners may benefit by omitting the top portion of worksheet 3, and completing the ‘think-pair-share’ activity as a small group with teacher support to ensure the discussion stays on track and that there is a clear understanding of the differences between the two categories.

For enrichment, faster learners could create a poster that promotes the maintenance of a healthy environment (ideas can be taken from their T-shirt design on worksheet 7). These posters could be displayed around the school.



What's in *Your* Environment?

Have you ever noticed what is in your environment? Take a walk around your school yard. Look for things that are sharing your environment.

In the box below, draw and label what you see or find.

Let's go a little further. Take a walk to your local park or in a forest. Look for things that are sharing your environment.

In the box below, draw and label what you see or find.



Share and Compare

You and a partner will share 3 things that you each found in the school yard or in your local park.

Draw and label the 3 things that your partner shares in the box below.

Think Pair Share

With your partner, do some thinking and sharing of ideas about the questions below.

“What is a living thing?”

“What is a non-living thing?”

“What makes living things different from non-living things?”

Sort It Out!

Use what you have learned about living and non-living things. Look back at worksheet 1 and 2. Sort the things that you drew into the “**living things**” box or into the “**non-living things**” box.

Living things**Non-living things**

Helping the Environment

Show how people in **your school** help to keep the environment healthy.

Show how people in **your community** help keep the environment healthy.

Show how people in **your home** help to keep the environment healthy.

How Will You Help Mother Earth?

You have the power to help! Tell what **you** can do to help keep the environment healthy.

To help keep the environment healthy, I can...



To help keep the environment healthy, I can...

Spread the Word!

You have learned a lot about what is in your environment, and why it is important to all things in it, to keep it a healthy place to be.

Design a T-shirt that promotes keeping our environment healthy.

