

Life Science

____ Grade 8 ____

Written by Tracy Bellaire

The experiments in this book fall under seven topics that relate to one aspect of life science: **Cells, Tissues, Organs & Systems**. 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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DEFINING LIVING THINGS

LEARNING INTENTION:

Students will learn about the common characteristics of living organisms and how they exhibit them.

SUCCESS CRITERIA:

- classify things as living or non-living, describing the difference
- identify and describe the characteristics of a living organism
- research and explain how certain organisms exhibit the characteristics of living things

MATERIALS NEEDED:

- a copy of “Living vs. Non-Living” worksheet 1 for each student
- a copy of “The Defining Characteristics” worksheet 2, 3, and 4 for each student
- a copy of “Exhibiting Characteristics” worksheet 5 and 6 for each student
- access to the internet or local library
- pencils, pencil crayons, markers, chart paper, clipboards

PROCEDURE:

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

1. Divide students into pairs and give each worksheet 1. They will 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.)

2. Using worksheet 2, 3, and 4, do a shared reading with the students. Along with the content, discussion of some vocabulary would be beneficial for students to understand the passage.

Some interesting vocabulary words to focus on are:

- | | |
|-----------------|-------------------|
| • organism | • microscopic |
| • reproduce | • lifespan |
| • respond | • characteristics |
| • features | • clones |
| • detect | • stimuli |
| • stool | • urine |
| • excretion | • photosynthesis |
| • transpiration | |

3. Give students worksheets 5 and 6, and a clipboard and pencil. They will explain how a plant, a paramecium, and a human exhibit/possess each characteristic listed in the chart. Some students may need to access the internet to research the answers.

DIFFERENTIATION:

Slower learners may benefit by working in a small group of three, with teacher direction to complete worksheets 5 and 6. Each student could research how one living thing listed in the chart exhibits each characteristic listed. Then, they could share their findings with the other members of their group to complete the worksheet. Answers could be recorded on one piece of chart paper.

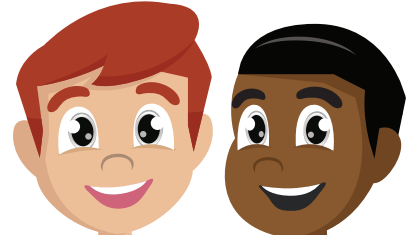
For enrichment, faster learners could create the same chart as is on worksheets 5 and 6, but use animals from different animal kingdoms. They can list how the animals exhibit the different characteristics.



Living vs. Non-Living

Think **Pair** **Share**

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



“What is a living thing?”

“What is a non-living thing?”

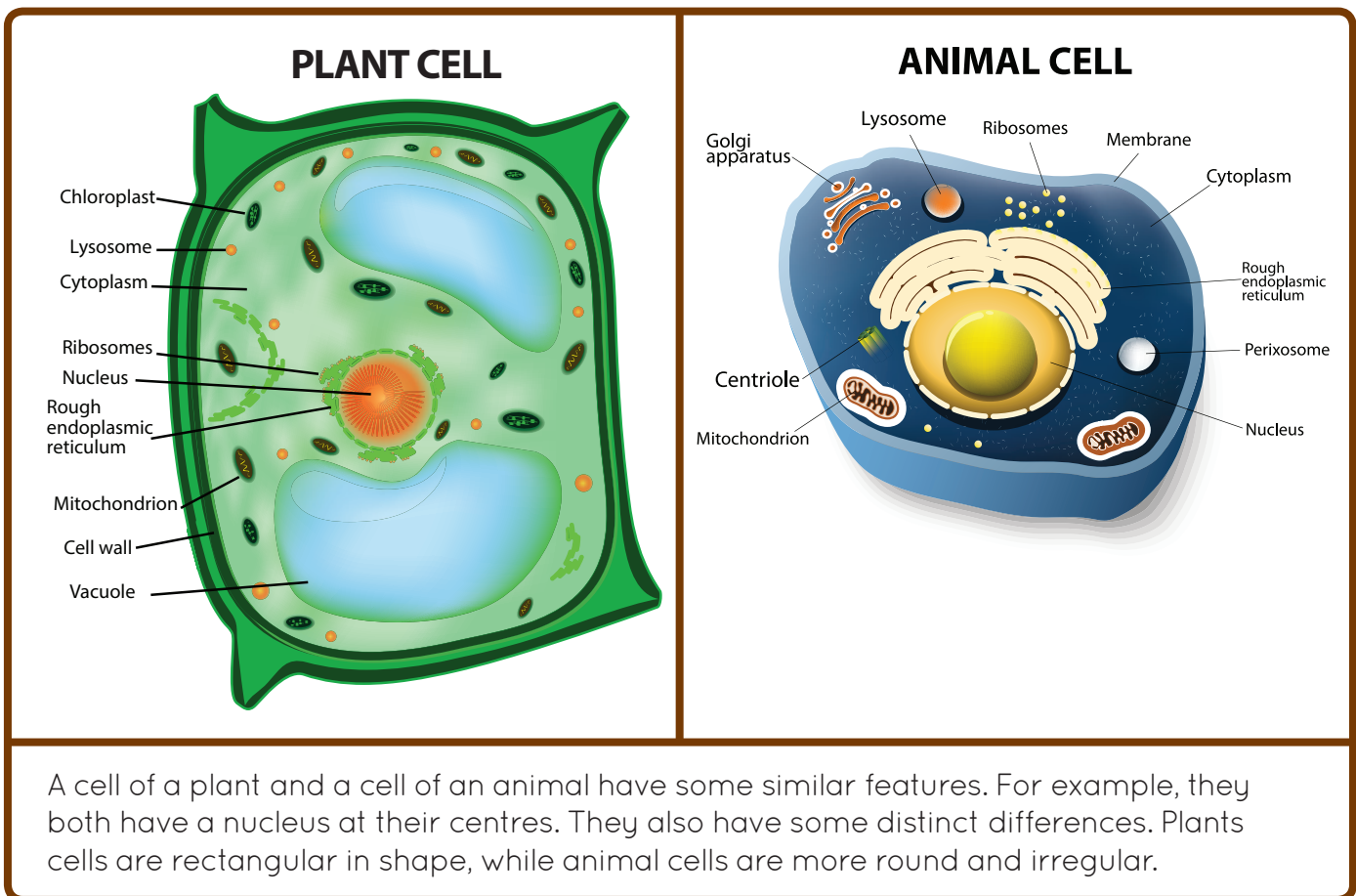
“What makes living things different from non-living things?”

Record Your Thinking!

The Defining Characteristics

We can identify living things, or **organisms**, by considering some common characteristics.

Living things are made up of one or more cells. Cells are tiny microscopic units that keep an organism alive. In larger organisms, such as a human being, cells connect together to form larger structures. They form into tissue and even into whole systems in the human body, such as the digestive system. The cells in an organism have different purposes that work to keep the living organism functioning.



Living things grow and develop. Living things, such as a human being, grow over time. Using the human being as an example, we know that its' features change from a small size to a large size as it ages. Development is change that a living thing experiences. For example, a human being starts as a single cell in the womb of its mother, and develops into a baby over time.

