Grade 1 Life Systems Curriculum Map

Life Systems: Needs and Characteristics of Living Things is a comprehensive Grade 1 science resource that explores living and non-living things, the needs of plants and animals, human body parts and senses, and the interdependence of living things in the environment. Through hands-on experiments, outdoor observations, STEM investigations, and structured worksheets, students learn how living things grow, adapt, and survive. The resource also emphasizes environmental responsibility, helping students understand how human actions affect ecosystems.

Across its eight major sections—environment, animals, plants, human body, senses, and interdependence—the resource integrates scientific inquiry skills such as predicting, observing, recording data, and drawing conclusions. Students engage in meaningful activities including plant growth experiments, animal classification, sensory exploration, and human body investigations. These lessons align with Canadian provincial standards, NGSS, and Common Core literacy expectations, making the resource academically robust and classroom-ready.

Standards Alignment Charts

Canadian Standards Chart

Province/Territory	Standards Met
Ontario	B1, B1.1, B1.2, B2.1–B2.6, A1.1, A1.2, A1.5
BC	Life Science Big Ideas; Curricular Competencies
Alberta	Topic A & B: Needs of Living Things; Senses
Saskatchewan	LS1, LS2
Manitoba	Cluster 1 & 2
Quebec	Cycle 1 Science & Technology
Nova Scotia	Needs & Characteristics of Living Things
New Brunswick	Living vs. Non-Living; Human Body
PEI	Needs of Living Things; Senses
Newfoundland & Labrador	Living Things; Interdependence
Yukon	BC Standards
Northwest Territories	Alberta/BC Standards
Nunavut	Alberta/BC Standards

U.S. Standards Chart

Standard Type	Codes Met
NGSS	1-LS1-1, 1-LS1-2, 1-LS3-1, K-2 ETS1
Common Core ELA	RI.1.1–1.4, W.1.2, W.1.8, SL.1.1–1.3

Teacher Notes Include:

- At A Glance – List of Skills
- Introduction
- Student Assessment Form
- Teacher Assessment Form

Lesson Topics:

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.

Lesson One: In Your Environment: Students will learn about living and non-living things that are in their environment and the importance of showing care for their environment.

Lesson Two: In the Animal Kingdom: Students will learn about the physical characteristics of a variety of animals.

Lesson Three: The Plant World: Students will learn about the physical characteristics of plants and how they meet their needs.

Lesson Four: The Human Factor: Students will learn about the physical characteristics and the basic needs of humans and compare basic needs to other living things.

Lesson Five: Needs Intertwined!: Students will learn about what living things provide for each other, and the problems that could result from the loss of some kinds of living things.

Lesson Six: Explore Your Senses: Students will learn about the five senses and how they are used to identify objects in our world.

Lesson Seven: Applying Your Senses: Students will learn how the senses are applied to describe and sort things in our environment.

Lesson Eight: The Human Body: Students will learn about the location and function of major parts in the human body and how they are used to meet our needs and explore our world.

THE PLANT WORLD

Learning Intention:

Students will learn about the physical characteristics of plants and how they meet their needs.

Success Criteria:

- recognize a variety of plants in your neighbourhood
- identify the main physical characteristics of a plant
- compare a variety of plants according to their physical characteristics
- investigate the basic needs of a plant
- explain the function of the main physical characteristics of a plant
- describe how a plant uses its physical characteristics to meet its needs

Materials Needed:

- a copy of "Plants in My Neighbourhood" worksheet 1 for each student
- a copy of "The Parts of a Plant" worksheet 2 for each student
- a copy of "The Needs of a Plant" worksheet 3, 4, and 5 for each student
- a copy of "The Sum of All Parts" worksheet 6 and 7 for each student
- a copy of "Drinking Up the Nutrients!" worksheet 8, 9, and 10 for each student
- 5 or 6 assorted plants
- 3 small potted plants for each group of students
- medium sized boxes (one for each group of students)
- access to water, a few measuring cups, a couple of watering cans
- a celery stalk with leaves, a tall glass of water, a magnifying glass, a spoon (a set for each pair of students)
- a few small bottles of red food colouring
- chart paper, markers, pencils, pencil crayons, clipboards, labels
- iPads (optional)

Procedure:

***This lesson can be done as one long lesson, or be done in four or five shorter lessons.**

1. Give students worksheet 1, a clipboard and a pencil. Take them out into the neighbourhood to look for different kinds of plants. Encourage them to notice the types of trees, shrubs, grasses, flowered plants, etc. that are growing locally. *An option is to give students iPads to take photos of the different vegetation that they see.*
2. Display 5 or 6 assorted plants (roots exposed). Engage students in a discussion about the physical characteristics of each plant type. How they different? What do they all have in common? Ask students to look back at the plants that they drew on worksheet 1 (or have taken photos of). How are they different? How are they the same? (Some common characteristics that should be noted are that all plants have a root system, stem, leaves. They differ in size, shape, colour, and some have flowers). Give students worksheet 2. They will label the basic parts of a plant.
3. Give students worksheets 3, 4, and 5. They will make a prediction about what may happen to a plant that is placed in a dark place, to one that is in sunlight but given no water, and to one that is in sunlight and given water. Over the next two weeks, students will make observations and conclusions about the growth of the plants and record them on worksheet 4 and 5. (Sunlight, water, and air are needed to make plants grow.)

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4. Divide students into pairs. Give them worksheet 6. They will engage in a "think-pair-share" activity to discuss and then record answers to the questions on the worksheet. A follow up option is to come back together as a large group to share responses. Student responses could be recorded on chart paper and displayed in the classroom for future reference.
5. Give students worksheet 7. Read through with the students about the main parts of a plant and their purposes. Along with the content, discussion of certain vocabulary words would be of benefit to ensure students' understanding of the concepts.

   Some interesting vocabulary words to focus on are:
   - chlorophyll
   - attract
   - nutrients
   - absorb
   - pollinate
   - supports
   - anchor
   - minerals
6. Divide students into pairs. Give them worksheets 8, 9, 10, and the materials to conduct the experiment. Read through the materials needed and what to do sections to ensure their understanding of the task. Students will make observations before and after the experiment, then make conclusions and a connection to what they have already learned about the needs of plants.

*As an activity to enhance the learning about the physical characteristics and needs of plants, show students The Magic School Bus episode called "Gets Planted". Episodes can be accessed at www.youtube.com

Differentiation:

Slower learners may benefit by working with a partner to make and record observations about the plants throughout the two weeks, or simply draw what they saw each week. An additional accommodation would be for these learners to work as one small group with teacher support to discuss the questions on worksheet 6. Answers could be recorded on chart paper and posted in the classroom as reference throughout the unit.

For enrichment, faster learners could plant and care for the 5 or 6 assorted plants (used in item #2). They could chart their growth by measuring the plants' heights, or amount of flower production each has. This could be done by creating a simple bar graph.

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Name:

Plants in My Neighbourhood

Have you ever noticed what kinds of plants are in your neighbourhood?

Take a walk around your neighbourhood. In the box below, draw and label the plants that you see.

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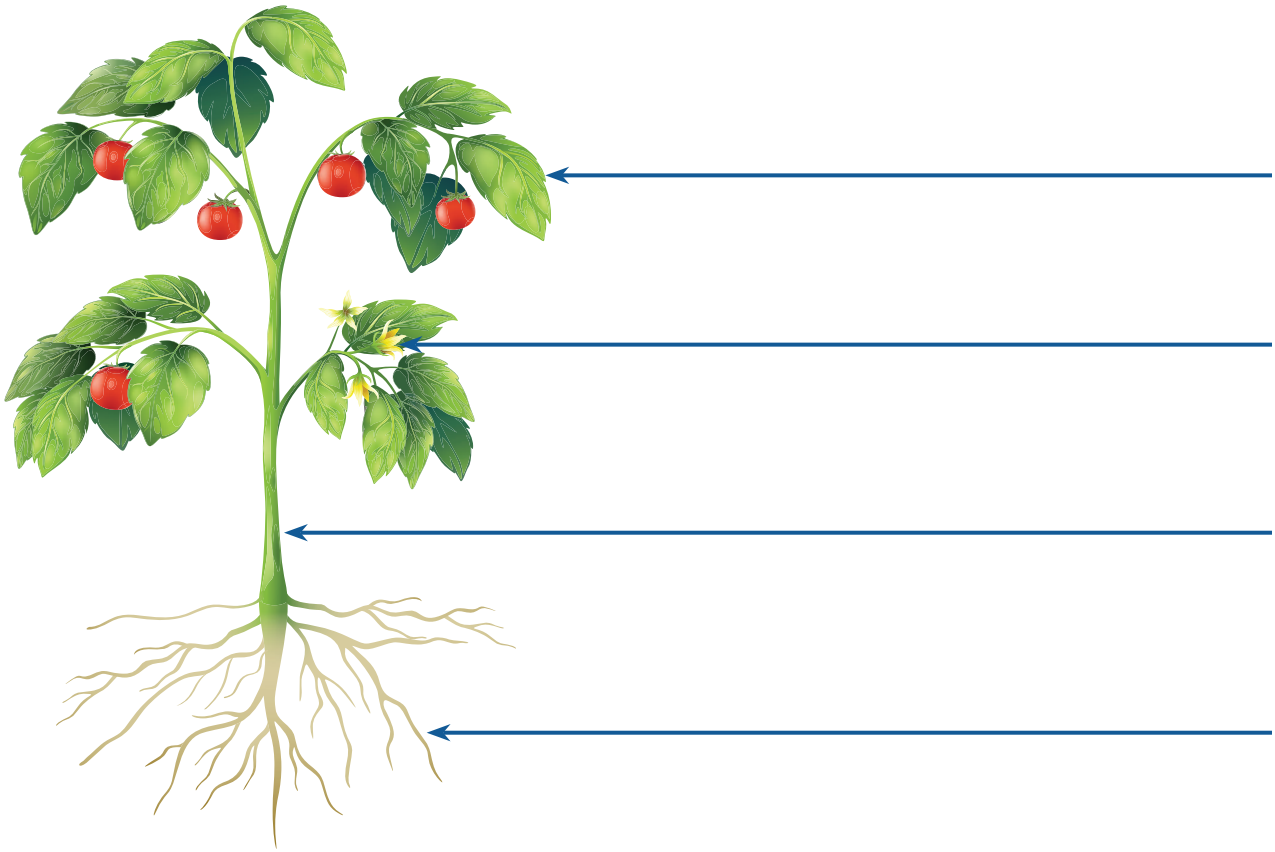
Name:

The Parts of a Plant

Label the main parts of the plant below. Use the words in the Word Box to help you.

leaves **roots** **stem** **flower**



Challenge question:

Why are the roots of a plant important?

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The Needs of a Plant

Question:

What does a plant need to live and grow?

Materials Needed:

3 small potted plants (one labeled "DARK", one labeled "LIGHT", and one labeled "LIGHT & WATER")

• water	
• watering can	
• measuring cup	
• a medium sized box	

What to do:

1. Make a prediction about the answer to the question. Record it on your worksheet.
2. Place the "**DARK**" plant under the box.
3. Place the "**LIGHT**" and the "**LIGHT & WATER**" plants in a sunny place.
4. Every 3 days, water the "**DARK**" plant, and water the "**LIGHT & WATER**" plant. Be sure to give them the same amount of water.
5. Record your observations of all plants at the end of each week, for 2 weeks.
6. Make conclusions about what you observed.

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Name:

Let's Predict

What does a plant need to live and grow?

Let's Investigate

This is what I saw each week.

WEEK 1

	DARK PLANT	LIGHT PLANT	LIGHT & WATER PLANT
What colour are the leaves?			
Does the plant look healthy or sick?			

WEEK 2

	DARK PLANT	LIGHT PLANT	LIGHT & WATER PLANT
What colour are the leaves?			
Does the plant look healthy or sick?			

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Name:

Drawing of the plant grown in the dark:

Drawing of the plant grown in sunlight, without water:

Drawing of the watered plant grown in sunlight:

Let's Conclude

What do plants need to live and grow?

How do you know this?

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Name:

The Sum of All Parts

Think Pair Share

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

"What does a plant use its roots for?"

"What does a plant use its stem for?"

"What does a plant use its leaves for?"

"What does a plant use its flowers for?"

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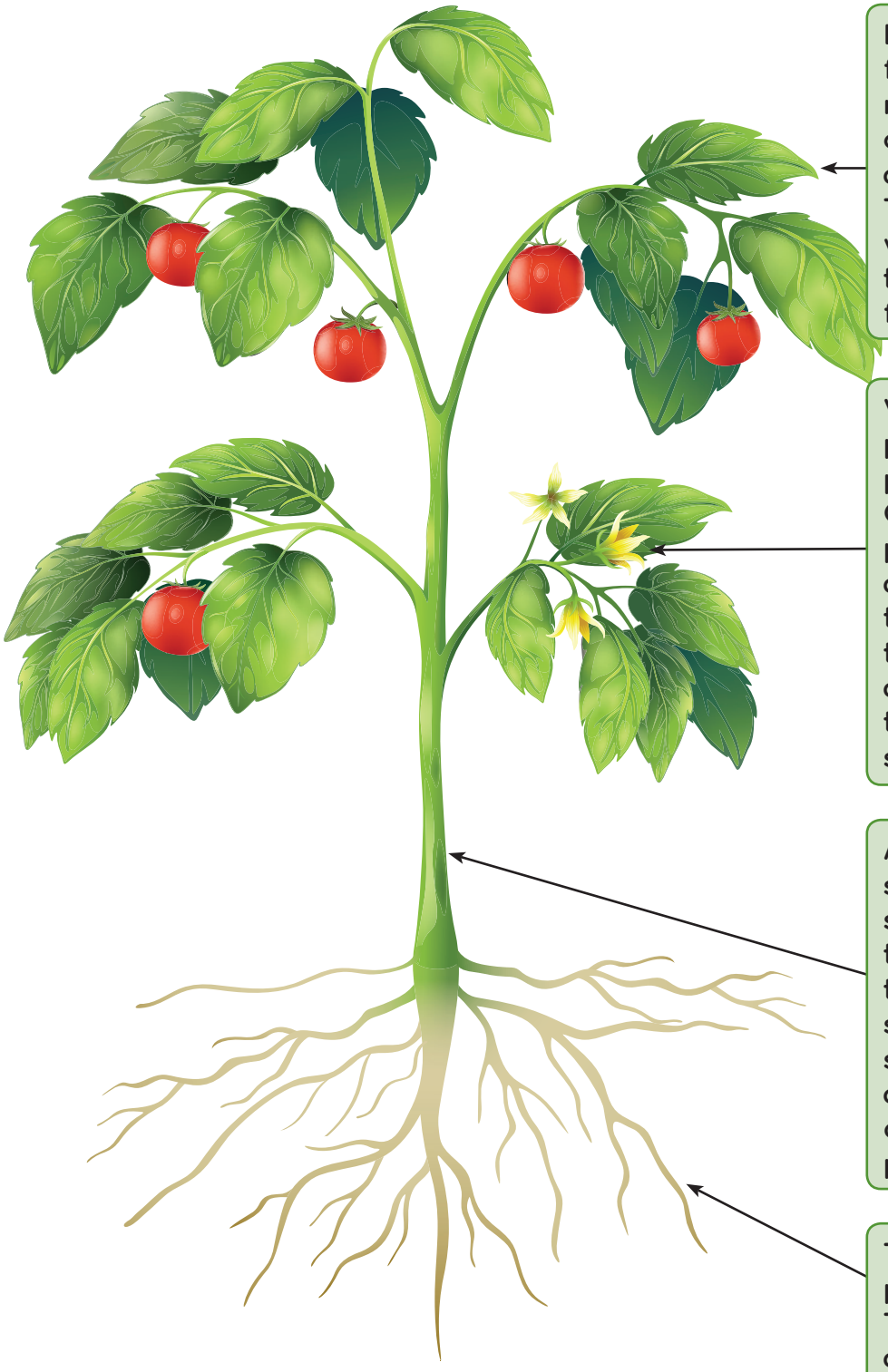
Name:

Fast Facts!



Leaves use energy from the sun to mix with their chlorophyll to make a sugar from the air. The sugar, air, and water that the plant takes in, makes food for it.

When flowers are pollinated, they produce fruit. Colourful flower petals attract animals and insects that help to pollinate the flowers. Flowers also make seeds that are needed to start new plants.

A stem of a plant supports it. The stem grows leaves that make food for the plant. The stem stores the food. The stem carries water and nutrients to other parts of the plant.

The roots anchor the plant to the ground. The roots of a plant absorb water and minerals that the plant needs to grow.

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Name:

Drinking Up the Nutrients!

Do you want to see a plant have a drink of water to get the nutrients it needs to be a healthy plant?

You'll need:

• a celery stalk with its leaves on	
• a tall glass of water	
• a spoon	
• a magnifying glass	
• red food colouring	

What to do:

1. Use the magnifying glass to take a look at the base of the celery stalk. On worksheet 9, describe and draw what you see.
2. Next, put 5 drops of the red food colouring into the glass of water.
3. Stir the water and food colouring with the spoon.
4. Put the celery stalk into the glass of water. Leave it sit over night.
5. The next day, observe the celery stalk. Record your observations on worksheet 9.
6. Make conclusions and a connection about what you have observed. Record them on worksheet 10.

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Let's Observe

Before beginning the experiment...

The base of the celery stalk looked

A drawing of the base of the celery stalk:

After doing the experiment...

The base of the celery stalk looked

A drawing of the celery stalk:

The stem and leaves looked

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Name:

Let's Conclude

Why did the celery stalk and its leaves turn red?

With a partner, talk about how the structure and design of the celery stalk helps to get its nutrient needs.

Let's Connect It!

If you planted a garden, explain what your plants would need to grow and be healthy.

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