

Ontario Standards Alignment



Grade 3, Science and Technology



Lesson 1



Why Grow Grains

Consider uses of grains beyond food

Learning Expectations

Ontario Curriculum B. Life Systems

B2.6 describe ways in which people, including Indigenous peoples, from various cultures around the world use plants for food, shelter, medicine, and clothing.

B2.7 describe various plants used for food, including those grown by First Nations, Métis, and Inuit, and identify local settings where these plants are grown or found.

B2.8 describe ways in which plants and animals, including humans, depend on each other.

Agriculture/Agri-Food Themes

Grains are used for much more than food; our lives would be very different without them. In fact, grains make it possible to live our current lives because of their myriad uses.

Activities and Learnings

Students learn about the many uses of grains in addition to food and are challenged to examine their immediate environment to identify items that were made with grains. **Supporting document:** Grain Gallery for recording their observations.

Students are introduced to the healthy benefits of grains and how ubiquitous they are in our lives, even though we are often unaware of them. They begin to examine Ontario as a grain-growing province.

Students begin to learn about the requirements of growing plants. Students are encouraged to think more broadly about the connections between human lives and plants.

Students learn that disparate items often have grains in common. They are introduced to the many uses of Ontario-grown grains beyond food.

Lesson 2



Let's Get Planting!

Understanding plant growth and conditions

Learning Expectations

Ontario Curriculum B. Life Systems

B2.1 describe the basic needs of plants, including the need for air, water, light, heat, nutrients, and space, and identify environmental conditions that may threaten plant survival.

B2.2 identify different parts of plants, including the root, stem, flower, stamen, pistil, leaf, seed, cone, and fruit, and describe how each part contributes to plants' survival within their environment.

B2.3 describe changes that different plants undergo in their life cycles.

B2.4 describe ways in which a variety of plants adapt and/or react to their environment and to changes in their environment.

B2.5 demonstrate an understanding that most plants get energy directly from the sun through the process of photosynthesis, which involves the absorption of carbon dioxide and the release of oxygen.

Agriculture/Agri-Food Themes

It is important to follow the correct procedure when planting seeds. Environmental factors, such as weather, are important for successful growing.

Activities and Learnings

Students learn about plants' needs for nutrients in healthy soil, water, light, air, and space to grow and conduct their biological processes – exchanging oxygen and carbon dioxide and photosynthesis.

Students identify the seeds in their What's Growing ON? seed kits and plant them. As the seeds grow, students will chart their progress, recording details about plant requirements they provide, and make observations about the parts of the plant and its life cycle.

Students explore the things that impact plants, including environmental conditions, particularly weather, and farming processes.

Students learn about seasonal temperatures and determine the best grain planting dates in parts of Ontario, including their own locations, based on high and low temperatures. **Supporting document:** Let's Get Planting worksheet showing their exploration of temperatures in Ontario locations.

Students learn there is a process to planting seeds. They will explore environmental factors, such as weather, that affect successful growing.



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What's
Growing
ON?

Lesson 3



Climate and Plant Growth

Exploring weather and climate

Learning Expectations

Ontario Curriculum B. Life Systems

B2.1 B2.1 describe the basic needs of plants, including the need for air, water, light, heat, nutrients, and space, and identify environmental conditions that may threaten plant survival.

B2.3 describe changes that different plants undergo in their life cycles.

B2.4 describe ways in which a variety of plants adapt and/or react to their environment and to changes in their environment.

B2.5 demonstrate an understanding that most plants get energy directly from the Sun through the process of photosynthesis, which involves the absorption of carbon dioxide and the release of oxygen.

Agriculture/Agri-Food Themes

Weather and climate change are huge considerations in agriculture. Farmers have many tools to support their work, including getting weather reports. Farmers are working to protect soil, water, and air to continue to provide food for all of us.

Activities and Learnings

Students continue their learning about what plants need to grow, focussing on weather its role in plants' biological functions such as photosynthesis.

Students learn the difference between weather and climate and how climate change affects weather and therefore agriculture. They explore Canada's hardiness zones and how they have been altered by our changing climate and examine average first frost dates around three Ontario cities. **Supporting document:** Climate and Plant Growth Chart.

Students learn how farmers promote plant growth in ways that help mitigate climate change and how important agriculture is for the world's increasing population.

Students will explore Farmzone, a weather website that assists the farming community in making decisions about planting, maintaining, and harvesting crops. Students will also explore how climate change impacts growing seasons.

Lesson 4



Connecting to Farming

Consider our daily use of products made from plants

Learning Expectations

Ontario Curriculum B. Life Systems

B2.6 describe ways in which people, including Indigenous peoples, from various cultures around the world use plants for food, shelter, medicine, and clothing.

B2.7 describe various plants used for food, including those grown by First Nations, Métis, and Inuit, and identify local settings where these plants are grown or found.

B2.8 describe ways in which plants and animals, including humans, depend on each other.

Agriculture/Agri-Food Themes

Students will connect with grain farming and may have the chance to talk with a grain farmer.

Activities and Learnings

Students become aware of what Ontario grain farmers do and how much we need them. They examine the nutritional value of grains as illustrated by the Canada Food Guide, noting the connection between grain farming and the guide.

Students learn more about the other uses of plants, such as clothing, medicine and shelter, and the significance of agricultural employment.

Students also learn about traditional agricultural practices of Indigenous peoples in Ontario, such as the Three Sisters planting method, and how they have used plants for medicinal and other purposes. **Supporting document:** Connecting to Farming study of medicinal plants used by Indigenous peoples.

Students will increase their knowledge of the role of grain farmers in our lives and the types of daily interactions they have with grain products.



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What's
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Lesson 5



Discuss that sustainable starts from the ground up!

Learning Expectations

Ontario Curriculum A. STEM Skills and Connections and B. Life Systems

A2.1 write and execute code in investigations and when modelling concepts, with a focus on testing, debugging, and refining programs.

B1.2 assess ways in which human activities have an impact on plants and plant habitats, and identify personal actions that they could take to minimize harmful effects and enhance positive ones.

B1.3 assess the benefits and limitations of locally grown food.

Agriculture/Agri-Food Themes

Sustainable farming practices impact plants, our world, and our relationships. Farmers apply technology to create a sustainable farming future. There are benefits and limitations of locally sourced food.

Activities and Learnings

Students will learn what sustainability means and about sustainable farming from the ground up, where it starts in the soil. They will learn how weather and agriculture affect soil and how farmers are mitigating their impact, often using technology.

Students will learn that modern farming is high tech and will have the opportunity to design a world where sustainability is practised.

Students will be introduced to some initiatives to promote locally sourced foods and will explore the benefits and limitations of locally grown food.

Students will learn about the technology used on modern farms as well as sustainable farming. Students will learn that locally sourced food has environmental and other benefits, but also has some limitations.



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