



STAGE 05: Designing a Healthy Recipe

Students will learn about grains as part of a healthy diet; they provide carbohydrates, protein, fat, and several minerals important for good health. Grains are versatile and used in many ways. They combine well with other flavours to create imaginative and tasty food.

Students will also learn which grains are grown in Ontario: barley, corn, oats, soybeans, and wheat.

Lesson 1: Grains in our Diet

Lesson 2: Market Research

Lesson 3: Designing a Healthy Recipe

LESSON 1 – Grains in our Diet

Overview:

Students will learn how nutritious grains are and why they are a good option to use as a main ingredient in the snack food they develop. Their learning will prepare them to make choices about they put in their granola bars.

Learning Goals

- Grains are important and necessary to a healthy balanced diet.
- Whole grains contain important nutrients. Eating refined grain is also a healthy choice.
- The grains grown in Ontario are part of a healthy diet.



Materials Needed

- Lesson Slides

Time Frame: 40min

Curriculum Expectations

Health

D1 Understanding Health Concepts

- D1.1 Understand food origins, nutritional value, and environmental impact
- D3.1 Local and cultural foods, eating choices

Agriculture/Agri-Foods Themes

Ontario produces several types of grains, which provide us with carbohydrates, protein, fat, and several minerals important for good health. The grain products we love contain refined or whole grains; both are healthy choices and which one a person eats is a matter of preference. People who can't eat gluten can find gluten-free grain products such as Ontario-grown oats, corn and soybeans.

Media Links

Embedded in the slides

- Eat together using Canada's food guide plate <https://www.youtube.com/watch?v=9FG4d-2tECo>

In teaching notes

- Whole Grains <https://www.youtube.com/watch?v=whwkeG9msLM>



Teaching Notes

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| <p>Slide 6: Minds ON!</p> | <p>Explain to students that grains are one of the foods you'll see in the food groups. Ask them to watch closely—can they name the food groups?</p> <p>(Fruits and vegetables, protein, grains, and dairy and alternatives.)</p> <p>Eat together using Canada's food guide plate</p> <p>https://www.youtube.com/watch?v=9FG4d-2tEC0</p> |
| <p>Slide 7: Grains in our Diet</p> | <ul style="list-style-type: none"> • Explain: grains are an important part of a healthy diet. • Ontario produces several types of grains: barley, corn, oats, soybeans, and wheat. That means your diet can include healthy grains that are locally grown. |
| <p>Slide 8: Grains in our Diet</p> | <ul style="list-style-type: none"> • Grains provide your body with carbohydrates, protein, fat, and several minerals important for good health. • The grain products we love contain refined or whole grains. Refined means they have had more processing than whole grains. Both are healthy choices and which one you eat is a matter of preference. |
| <p>Slide 9: Gluten-free Grains</p> | <ul style="list-style-type: none"> • Talk to students about people who have special considerations when it comes to gluten, a type of protein in some grains. • People who cannot eat gluten can find gluten-free grain products such as Ontario-grown corn, soybeans, and oats. • Grains with gluten are not good for people with celiac disease or gluten sensitivity. • People with such conditions should be careful about reading labels and understanding their risk from particular ingredients or cross-contamination. |



**Slide 10:
What are
Whole Grains?**

- The grain products we love contain refined or whole grains. Refined means they have had more processing than whole grains. Both are healthy choices and which one you eat is a matter of preference.
- Whole grain food products include brown bread or pasta. Refined grain food products include white bread or pasta.

**Slide 11:
Grains Anatomy**

Describe whole and refined grains to students.

Whole grain contains all three parts of the grain seed: the bran, the germ and the endosperm.

- The bran is the outer layer of the grain, which contains fibre as well as vitamins and minerals.
- The germ supports the growth of a new plant. It is rich in healthy fats, vitamins, and minerals.
- The endosperm contains mainly starch (carbohydrate), as well as protein, vitamins, and minerals.
- Whole grain gets some refining to remove the inedible outer hull. It may also be cut into smaller pieces or rolled flat to make it cook more quickly (steel-cut oats, rolled oats).

Refined grain has had the germ and bran removed.

- Refined grains have a finer texture and longer food storage life.
- Refining removes nearly all the fibre and many nutrients; the nutrients (but not the fibre) can be added back into the refined grain. When nutrients have been added, the refined grains are called enriched.

Nutrients in whole grains:

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|-----------------------------|--------------|
| • Vitamin A | • Vitamin E |
| • Vitamin B-1 (thiamin) | • Iron |
| • Vitamin B-2 (riboflavin) | • Magnesium |
| • Vitamin B-3 (niacin) | • Phosphorus |
| • Vitamin B-6 (pyridoxine). | • Selenium |
| • Vitamin B-9 (folate) | |

<http://goodineverygrain.ca/2023/09/06/whole-grains-month/>



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| <p>Slide 12: Why are whole grains good for our health?</p> | <p>Answer: Whole grains are important because they contain all three parts, which means all the grain's nutrients, vitamins, and minerals are present.</p> <p>Reassure students that eating refined grain is not bad or unhealthy. There are many reasons to choose refined grains; they may be cultural, preference for a taste or texture, or health reasons (such as having Crohn's or colitis).</p> <p>Optional - Show students this video about whole grains https://www.youtube.com/watch?v=whwkeG9msLM</p> |
| <p>Slide 13: Wrap Up: Guess That Grain!</p> | <p>Display images of products made with different grains and have students identify which grain is an ingredient.</p> <ul style="list-style-type: none"> • Malt Vinegar • Taco • Granola Bars • Mayonnaise • Crackers |
| <p>Slide 14: Wrap Up: Guess That Grain!</p> | <p>Display the same images with the grains named.</p> <p>Answer key:</p> <ul style="list-style-type: none"> • Malt Vinegar: barley (fermented barley makes malt). • Taco: corn (corn flour shell) • Granola bars: oats (rolled oats) • Mayonnaise: soybeans (soybean oil) • Crackers: wheat (flour) |

Assessment Resources. Coming soon!

Please check the STEMterprise webpage at <https://goodineverygrain.ca/ontario-farming-stemterprise/>