



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 2 – Market Research

Overview:

Students will consider their target audience as they learn what a flavour profile is and plan one for their granola bars. They will conduct an inquiry into preferences among school mates and chart the resulting data to inform their decisions.

Learning Goals

- Develop a recipe for a healthy snack bar.
- Design two granola bar flavours.
- Consider why using local ingredients is important.
- Design a survey.
- Use a pictograph or bar graph to show market research results.
- Use the data to make decisions.



Materials Needed

- Lesson Slides
- Flavour Profile Market Data worksheet

Time Frame: 40min

Curriculum Expectations

Science & Technology Strand B

- B1.3 Assess the benefits and limitations of locally grown food

Mathematics Strand D

- D1.2 Collect data through observations, experiments, and interviews to answer questions of interest that focus on qualitative and quantitative data, and organize the data using frequency tables
- D1.3 Display sets of data, using many-to-one correspondence, in pictographs and bar graphs with proper sources, titles, and labels, and appropriate scale
- D1.5 Analyze different sets of data presented in various ways, including in frequency tables and in graphs with different scales, by asking and answering questions about the data and drawing conclusions, then make convincing arguments and informed decision

Health Strand D

- D1.1 Understand food origins, nutritional value, and environmental impact
- D3.1 Explain how local foods and foods from various cultures can be used to expand the range of healthy eating choices

Agricultural /Agri-Foods Themes

- The nutritional benefits of grain are significant. Various grains help give healthy products their texture, flavour, and smell.



Media Links

Embedded in the slides

- The Five Basic Tastes Science Lesson for Kids https://www.youtube.com/watch?v=eqsuV_EMkAQ

In teaching notes only

- Flavour profiles

<https://www.cordonbleu.edu/news/how-to-balance-the-five-flavours/en>

<https://www.npr.org/2007/11/05/15819485/sweet-sour-salty-bitter-and-umami>

Teaching Notes

<p>Slide 6: Minds ON!</p>	<p>The Five Basic Tastes Science Lesson for Kids</p> <p>Describes the five basic tastes and their correlation to the tongue's flavour receptors.</p> <p>Video is 5 minutes, 11 seconds and ends with a quiz.</p> <p>https://www.youtube.com/watch?v=eqsuV_EMkAQ</p>
<p>Slide 7: Flavour Profile</p>	<p>You may wish to share with students the story of how science determined a new flavour.</p> <p>In the past, we thought humans could taste 4 flavours. Umami was added to the original 4 flavours in 2002, after scientific investigation discovered that humans can taste 5 types of flavours.</p> <p>The science followed speculation almost 100 years after Parisian Chef Auguste Escoffier found a new flavour around the same time Japanese chemist Kikunae Ikeda set out to find the intriguing taste that was not sweet, salty, bitter, or sour. He called it umami, which means yummy in Japanese.</p> <p>Additional sources about flavour profiles:</p> <p>https://www.cordonbleu.edu/news/how-to-balance-the-five-flavours/en</p> <p>https://www.npr.org/2007/11/05/15819485/sweet-sour-salty-bitter-and-umami</p>



**Slide 8:
Designing
Your Granola Bar**

In business groups or as a whole class, ask students to brainstorm flavour profile ideas for their granola bars. This has been done successfully as a whole class brainstorm (recording ideas on the whiteboard) and in business groups (recording ideas on paper).

- Provide ideas to help students get started (e.g., lemon zest or honey with raisins or cranberries with orange zest).
- Students may wish to use recipe books or the Internet to research which flavours work together, take inspiration from their taste-testing in stage 2, or they could invent a new flavour combination.
- Ask students to be mindful of allergies, especially to nuts, in the school as they explore ingredients. Remind them that soybeans can be made into soy butter if they need a creamy ingredient.

Extension! Ask groups to research the nutritional benefits of their ingredients and to find out where they are grown. The first question to ask themselves could be, "Is this ingredient grown in Ontario?"

**Slide 9:
Market Research:
Instructions**

- Using the PowerPoint presentation, raise questions to introduce market research and how students can use it to help them decide which flavour granola bar they should make.
- Explain: students are going to conduct a survey and record their results using a tally table. We do this by asking many people which of our flavour ideas they prefer. We can focus on people we think will buy our product.
- By asking customers what they would prefer, students can make a product customers are more likely to buy and be happy with.
- To display their results, they will learn about pictographs on slide 11.



**Slide 10:
Market Research:
Instructions**

- Explain: for this survey, we need to ask a closed multiple-choice question. We will offer a small range of granola bar flavour options and ask participants to choose the option they would like most. This will tell us whether people will want to buy our product.
- Once they have decided on their flavours, ask the business groups to write down their research question(s) (e.g., what is the most popular granola bar flavour in Grade 3 in our school?).
- Students may like to extend their survey by asking a second question about the factors that would affect buying behaviour (e.g., price, fair trade, local produce, allergy).
- Before they collect their data, ask students to draw a tally table to record their findings (or use the tally table template found at the end of the lesson plan).
- Use the example in the slide to model how to record results in a tally table.
- Give students the opportunity to collect answers from as many children as possible (consider using students from a range of grades).
- Allow time for group members to give feedback on their findings and draw conclusions about the most popular flavour among their target customers.

**Slide 11:
Flavour Profile
Market Data**

Discuss the tally table with students to ensure they understand what to do.



<p>Slide 12: Bonus! Drawing a Pictograph</p>	<p>This is an extension idea:</p> <ul style="list-style-type: none"> • Use the example in the slide to take students through each stage of drawing a pictograph and share tips for drawing one. • Model each step of constructing a pictograph. • Ask students to construct a pictograph to display their market research results. You could extend them by also covering how to draw an additional bar graph.
<p>Slide 13: Your Final Decision</p>	<ul style="list-style-type: none"> • Ask groups to reach a final decision about the flavour of their granola bar and write two sentences to explain what their market research showed and their group's final decision. • At the end of the lesson, students should write a shopping list for the ingredients they wish to add to their granola bars and give it to their teacher.
<p>Slide 14: Wrap Up</p>	<p>Encourage students to share their responses.</p>

Assessment Resources. Coming soon!

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

Flavour Profile Market Data Worksheet



Write your survey question here:

Fill in the chart below as you collect your data:

Granola Bar Flavour	Data	Total

What did you learn?
