Curriculum Alingment

Grade 3: Granola Bar Business

STEMterprise is a unique curriculum-based program that helps Ontario students develop STEM skills as they learn where our food comes from.

It supports learning through cross-curricular and real-life experiences in the following areas:

- **Science & Technology -** Strand A STEM Skills and Connections, Strand B Life Systems, Strand D Structures and Mechanisms, and Strand E Earth and Space Systems
- **Mathematics -** Strands B, C, D, and E
- **Language -** Strand A Literacy Connections and Applications including Digital Media Literacy, Strand B Foundations of Language, and a small portion of Strand C Comprehension: Understanding and Responding to Texts.
- **Visual Arts -** Strand D
- **Health and Physical Education -** Strand D Healthy Living
- **Social Studies -** Strand B People and Environments

Transferable skills applied and developed throughout STEMterprise include innovation, creativity, ingenuity, leadership and entrepreneurship. Students will have the opportunity to develop concepts, ideas, or products for the purpose of contributing innovative solutions to economic, social, and environmental problems.

The program is designed with flexibility in mind. All teaching resources are editable and lessons can be rearranged to suit learning needs.

LESSON	LEARNING EXPECTATIONS	ACTIVITIES AND LEARNING
STAGE 1: Entrepreneurship Challenge		
Lesson 1: The Challenge (Core Lesson)	**Science & Technology Curriculum** **Strand B Life Systems** **B1.1.** Begin to consider ways in which plants are important **Agriculture/Agri-Food Themes** Begin to understand where food comes from.	Students will learn about entrepreneurship to help them meet the challenge of creating a new granola bar business. This lesson encourages students to make connections between creativity, curiosity and being a successful entrepreneur.

LESSON	LEARNING EXPECTATIONS	ACTIVITIES AND LEARNING
STAGE 2: Starting a Business		
Lesson 1: Analyzing the Competition	**Mathematics Curriculum** **Strand D Data** **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 tables **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. **Strand E Spatial Sense** **E2.5** Use various units of different sizes to measure the same attribute of a given item **Health and Physical Education Curriculum Strand D Healthy Living** **D3.1** Explain how local foods and foods from various cultures can be used to expand the range of healthy eating choices **Agriculture/Agri-Food Themes** • Grains are an important part of a healthy diet. • Oats are a main ingredient in granola bars. • Grains help give healthy products their texture, flavour, and smell.	This lesson offers students a taste-testing experience and provides real-life practice organizing data. If food in the classroom is a barrier, teachers across the province are having success with alternate approaches. • Teachers can do the tasting for the students and describe the taste and texture. • Students can analyze the granola bars from packaging and advertisements.
Lesson 2: Customer, Business Name, and Logo (Core Lesson)	**Language** Strand A Literacy Applications and Connections **A2.6** use digital and media tools to support stages of the design process and to develop creative solutions to authentic, real-world problems **A2.5** demonstrate an understanding of the interrelationships between the form, message, and context of a text, the audience, and the creator	Students will learn about target customers and identify them for their granola bar business. As they explore entrepreneurship and logo design, students will apply their creativity and imagination as they design a name for their businesses and create a logo. Worksheets help students work out a marketing strategy and create a business name and logo.

LESSON	LEARNING EXPECTATIONS	ACTIVITIES AND LEARNING
	Strand D Expressing Ideas and Creating Texts **D1.1** identify the topic, purpose, and audience for various texts they plan to create, and describe how the chosen text form and genre will help communicate their intended meaning **Visual Arts** **D1.4** Use a variety of materials, tools, and techniques to respond to design challenges **D2.3** Demonstrate an awareness of the meaning of signs and symbols encountered in their daily lives and in works of art **Agriculture/Agri-Food Themes** • Grains are important ingredients in many healthy foods. They combine well with other flavours to create imaginative and tasty food.	
STAGE 3: Becoming a Plant Expert		
Lesson 1: Where Does our Food Come From?	**Science & Technology Curriculum Strand B Life Systems** **B1.1** Assess ways in which plants are important to humans and other living things, taking different perspectives into consideration **B2.3** Describe changes that different plants undergo in their life cycles **B2.8** Describe ways in which plants and animals, including humans, depend on each other **Health and Physical Education Curriculum Strand D Healthy Living** **D1.1** Demonstrate an understanding of how the origins of food (e.g., where the food is grown, harvested, trapped, fished, or hunted; whether and how it is processed or prepared) affect its nutritional value and how those factors and others (e.g., the way we consume and dispose of food) can affect the environment	Students will understand there is a connection between their granola bar businesses and the study of plants–that foods begin in the field and end on the plate. Identifying the types of grain grown in Ontario will lead to discussion about types of food and where it comes from. Students will enjoy explanatory videos and have the opportunity to describe the surprises they experienced in the lesson, including drawing their ideas of how food goes from field to fork.

LESSON	LEARNING EXPECTATIONS	ACTIVITIES AND LEARNING
	D3.1 Explain how local foods and foods from various cultures can be used to expand the range of healthy eating choices **Agriculture/Agri-Food Themes** • Understanding where food comes from	
Lesson 2: Parts of a Plant	**Science & Technology Curriculum** **Strand B Life Systems** **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 **Language Strand B Foundations of Language** **B1.1** Use effective listening skills, including asking questions to clarify information and ideas, in formal and informal contexts and for various purposes, including in small- and large-group conversations and various classroom activities **B1.3** Identify the purpose and audience for speaking in formal and informal contexts, and use appropriate speaking strategies, including establishing a rapport with the audience, to communicate clearly and coherently **B1.5** Use appropriate word choice, including new vocabulary, grammar, and cohesive sentences when speaking and communicating ideas in various contexts, to support audience comprehension **B2.4** Demonstrate an understanding of a variety of words, acquire and use explicitly taught vocabulary in various contexts, including other subject areas, and use morphological knowledge to analyze and understand new words in context **Agriculture/Agri-Food Themes** • Identify and describe the parts of plants and describe the changes during their life cycles	Students will get down to the basics of understanding plants and how they grow. They will display their growing knowledge through a vertical relay to name plant parts. Students will have the opportunity to research the functions of plant parts and present the results of their research to their classmates.

LESSON	LEARNING EXPECTATIONS	ACTIVITIES AND LEARNING
Lesson 3: What a Plant Needs to Grow	**Science & Technology Curriculum** **Strand B Life Systems** **B1.3** Assess the benefits and limitations of locally grown food **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 **Strand E Earth and Space Systems** **E1.1** Assess the importance of soils for society and the environment **E1.2** Assess the impact of human activity on soils, and describe ways in which humans can improve the quality of soils and/or lessen or prevent harmful effects on soils **E2.2** Identify different substances that are commonly added to, or absorbed by, the soil, and describe their effects on soil health **E2.5** Identify various strategies used to maintain and improve soil health in Ontario **Agriculture/Agri-Food Themes** • Understand the basic needs of plants, including grains. • Learn about environmental conditions that may threaten plants and animals.	Students will become aware that plants have distinct characteristics as they learn to identify similarities and differences among various types of plants. Educators may wish to focus on what they're growing in the classroom. Students will consolidate their learning in a Grown in Ontario activity where they consider why some foods are grown in Ontario and others need to be imported. Students will turn a fun game into a learning activity to recap their learning.

LESSON	LEARNING EXPECTATIONS	ACTIVITIES AND LEARNING
Lesson 4: Planting Your Seeds (Core Lesson)	**Science & Technology Curriculum** **Strand A STEM Skills** **A1.2** Use a scientific experimentation process and associated skills to conduct investigations **A1.5** Communicate their findings, using science and technology vocabulary and formats that are appropriate for specific audiences and purposes **Science & Technology Curriculum** **Strand 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 **Mathematics Curriculum** **Strand C Algebra** **C4** Apply the process of mathematical modelling to represent, analyze, make predictions, and provide insight into real-life situations **Strand D Data** **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 **Agriculture/Agri-Food Themes** • Plant seeds as an introduction to learning about soiling about soil	This lesson gives students the practical experience of growing ingredients they will use to make their granola bars from seed. Students will begin with a time lapse video of an entire growing season to recap what they have learned and introduce them to growing their own plants. Students will design a fair test and design their own plant investigation. Worksheets will help them conduct their investigation.

LESSON	LEARNING EXPECTATIONS	ACTIVITIES AND LEARNING
STAGE 4: Soil in the Environment		
Lesson 1: What is Soil?	**Science & Technology Curriculum** **Strand E Soils in the Environment** **E1.1** Assess the importance of soils for society and the environment **E2.1** Identify the living and non-living components of soil, and describe the characteristics of healthy soil **E2.2** Identify different substances that are commonly added to, or absorbed by, the soil, and describe their effects on soil health **E2.3** Examine different types of soils found in Ontario, and describe how different soils are suited to growing different types of food, including crops **E2.5** Identify various strategies used to maintain and improve soil health in Ontario **E2.6** Describe the process of composting, and explain some benefits of composting **Agriculture/Agri-Food Themes** • Soil literally impacts every bite we take. • Soil health is a crucial component of agriculture.	In this lesson, students will take a comprehensive look at soil and learn about its connection to our food. They will become aware that soil is not dirt and that soil has a state of health that must be protected. Students will learn about soil composition and its diversity, exploring it through engaging activities and one very unusual activity that mimics an old farming trick for checking soil health! This lesson also helps students become familiar with the geographic regions of Ontario to introduce the next lesson.
Lesson 2: Soil Types in Ontario and Regions	**Science & Technology Curriculum** **Strand A STEM Skills** **A1.1** Use a scientific research process and associated skills to conduct investigations **A1.5** Communicate their findings, using science and technology vocabulary and formats that are appropriate for specific audiences and purposes **Science & Technology Curriculum** **Strand E Soils in the Environment** **E1.1** Assess the importance of soils for society and the environment **E2.1** Identify the living and non-living components of soil, and describe the characteristics of healthy soil **E2.3** Examine different types of soils found in Ontario, and describe how different soils are suited to growing different types of food, including crops **E2.6** Describe the process of composting, and explain some benefits of composting	In this lesson, students will have the chance to get their hands dirty as they explore the composition of Ontario soil. They will understand that soil is not the same everywhere—one of the reasons crops cannot be grown everywhere. Students will learn about the characteristics of different soil types found across Ontario and practise being an agronomist, a scientist who helps farmers understand and care for their soil and crops.

LESSON	LEARNING EXPECTATIONS	ACTIVITIES AND LEARNING
	Social Studies Curriculum **Strand B People and Environments: Living and Working in Ontario** **B1.1** Describe major connections between features of the natural environment of a region and the type of land use **B1.3** Identify and describe … land use … using mapping and globe skills **B3.** Describe major landform regions and types of land use in Ontario **B3.3** Identify the major landform regions in Ontario (Canadian Shield, St. Lawrence Lowlands, Hudson Bay Lowlands) and describe the major characteristics that make each distinct **Grade 4: Political and Physical Regions of Canada** **B3.7** Demonstrate an understanding of cardinal and intermediate directions (e.g., N, S, NW, SW), and use them to locate physical characteristics **Agriculture/Agri-Food Themes** • Soil literally impacts every bite we take. Soil health is a crucial component of agriculture.	
Lesson 3: Compaction and Erosion	**Science & Technology Curriculum** **Strand E Soils in the Environment** **E1.1** Assess the importance of soils for society and the environment **E1.2** Assess the impact of human activity on soils, and describe ways in which humans can improve the quality of soils and/or lessen or prevent harmful effects on soils **E2.4** Explain the process of erosion, including its causes and its impact on soils **E2.5** Identify various strategies used to maintain and improve soil health in Ontario **E2.6** Describe the process of composting, and explain some benefits of composting **Agriculture/Agri-Food Themes** • By using sustainable farming practices, such as driving on fields less and planting cover crops, farmers support soil health. More and more, agriculture is applying technology to create a sustainable farming future.	Soil compaction affects soil health. Students will learn it is caused by something pressing on soil. Compaction can be caused by natural actions, such as erosion by wind or water, or by human action, such as driving heavy vehicles on farm fields. In both cases, soil will be less- or non-productive. Students will consider the effects of erosion by conducting tests and begin to learn what farmers are doing to prevent or mitigate soil compaction.

LESSON	LEARNING EXPECTATIONS	ACTIVITIES AND LEARNING
Lesson 4: Soil Nutrients	**Science & Technology Curriculum** **Strand A STEM Skills** **A1.2** Use a scientific experimentation process and associated skills to conduct investigations **A1.5** Communicate their findings, using science and technology vocabulary and formats that are appropriate for specific audiences and purposes **Science & Technology Curriculum** **Strand E Soils in the Environment** **E1.1** Assess the importance of soils for society and the environment **E1.2** Assess the impact of human activity on soils, and describe ways in which humans can improve the quality of soils and/or lessen or prevent harmful effects on soils **E2.1** Identify the living and non-living components of soil, and describe the characteristics of healthy soil **E2.2** Identify different substances that are commonly added to, or absorbed by, the soil, and describe their effects on soil health **E2.5** identify various strategies used to maintain and improve soil health in Ontario **Mathematics Curriculum** **Strand D Data** **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 tables **Agriculture/Agri-Food Themes** • Farmers use a range of practices to protect soil health, such as fertilizing with one of several methods that have been proven to work or rotating crops so plants return nutrients to the soil	Students may be surprised to learn that human health depends significantly on soil health. Students will learn the reason for this truism is that plants need soil nutrients to grow into nutritious parts of our diet. By growing plants and conducting a fair test to track their growth, students will understand the importance of soil nutrients and how plants get their nutrition. They will also understand how farmers support soil, and therefore plant and human, health.

LESSON	LEARNING EXPECTATIONS	ACTIVITIES AND LEARNING
Lesson 5: STEM and Technology on Farms	**Science & Technology Curriculum** **Strand A STEM Skills** **A1.5** Communicate their findings, using science and technology vocabulary and formats that are appropriate for specific audiences and purposes **Language Curriculum** **Strand A Literacy Connections and Applications** **A1.1** Identify how transferable skills can be used to support communication. **A1.2** Demonstrate an understanding of how transferable skills help them to express their voice and be engaged in their learning **Language Curriculum** **Strand B Foundations of Language** **B2.4** Demonstrate an understanding of a variety of words, acquire and use explicitly taught vocabulary in various contexts, including other subject areas, and use morphological knowledge to analyze and understand new words in context **B3.1** Identify and construct various sentence types and forms, including simple sentences, compound sentences, and complex sentences containing adverbial clauses **B3.2** Demonstrate an understanding of the functions of parts of speech in sentences, including possessive nouns, linking verbs and the progressive tense, interrogative adjectives and adverbs, and prepositions and interjections, and use this knowledge to support comprehension and communicate meaning clearly **B3.3** Use capitalization and punctuation **Strand D Developing Ideas and Organizing Content** **D1.2** Generate and develop ideas about given and chosen topics, using various strategies, and drawing on various resources, including their own lived experiences, and learning from other subject areas **Agriculture/Agri-Foods Themes** • Modern farm machinery is more efficient and less harmful to soil and the environment. More efficient vehicles mean farmers spend less time driving on fields, which means less soil compaction and therefore healthier soil.	This lesson recaps what students have learned before delving into the innovative technology coming to farms. Students will become aware that farming is being changed by technological innovation. Farmers and equipment manufacturers are finding ways to farm that will protect the soil and the environment and be more efficient. Students will view a series of engaging videos to learn about modern agricultural technology and projections for the future before telling the story of their food from field to fork.

LESSON	LEARNING EXPECTATIONS	ACTIVITIES AND LEARNING
Lesson 6: Designing an Innovative Farm Machine	**Science & Technology Curriculum** **Strand A STEM Skills** **A1.3** Use an engineering design process and associated skills to design, build, and test devices, models, structures, and/or systems **A1.5** Communicate their findings, using science and technology vocabulary and formats that are appropriate for specific audiences and purposes **A3.1** Describe practical applications of science and technology concepts in their home and community, and how these applications address real-world problems **A3.2** Investigate how science and technology can be used with other subject areas to address real-world problems **Agriculture/Agri-Foods Themes** • Modern farm machinery is more efficient and less harmful to soil and the environment. More efficient vehicles mean farmers spend less time driving on fields, which means less soil compaction and therefore healthier soil.	This lesson has been a favourite with students and teachers. It is adaptable to your preferences. Students will discover their inner farmer as they learn how crops are planted, grown, harvested, and processed using machinery. After viewing some inspirational videos, they will practise the engineering design process as they work toward imagining, designing, and building a prototype of an innovative farming machine.
STAGE 5: Recipe Design and Market Research		
Lesson 1: Grains in our Diet	**Health and Physical Education Curriculum** **Strand D Healthy Living** **D1.1** Understand food origins, nutritional value, and environmental impact **D3.1** Make connections for healthy living through 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 and corn.	In this lesson, 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 lead them to make good choices when they determine what to put in their granola bars. Students will become aware of the differences between whole and refined grains and understand that there are reasons to choose both. As well, they will understand that some people have to be careful of the food they choose.

LESSON	LEARNING EXPECTATIONS	ACTIVITIES AND LEARNING
Lesson 2: Market Research (Core Lesson)	**Science & Technology Curriculum** **Strand B Life Systems** **B1.3** Assess the benefits and limitations of locally grown food **Mathematics Curriculum** **Strand D Data** **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 and Physical Education Curriculum** **Strand D Healthy Living** **D1.1** Understand food origins, nutritional value, and environmental impact **D3.1** Make connections for healthy living through local and cultural foods, eating choices **Agriculture/Agri-Foods Themes** • The nutritional benefits of grain are significant. Various grains help give healthy products their texture, flavour, and smell.	As students prepare to develop their granola bar recipe, they will learn to understand their target customers and what will appeal most to them. They will conduct an inquiry into preferences among school mates and chart the resulting data to inform their decisions. As they design two granola bar flavours, students will consider why using local ingredients is important and learn the role of Ontario grains in food.
Lesson 3: Designing a Healthy Recipe (Core Lesson)	**Health and Physical Education Curriculum** **Strand D Healthy Living** **D1.1** Understand food origins, nutritional value, and environmental impact **D3.1** Make connections for healthy living through local and cultural foods, eating choices **Mathematics Curriculum** **Strand E Spatial Sense** **E2.3** Use non-standard units appropriately to estimate, measure, and compare capacity, and explain the effect that overfilling or underfilling, and gaps between units, have on accuracy	This is it! The granola bars start to become real! Students will learn about recipes by examining existing recipes, learning the parts of a recipe, and using the provided template to create their own recipes, incorporating their flavour profiles.

LESSON	LEARNING EXPECTATIONS	ACTIVITIES AND LEARNING
	E2.4 Compare, estimate, and measure the mass of various objects, using a pan balance and non-standard units **E2.5** Use various units of different sizes to measure the same attribute of a given item, and demonstrate that even though using different-sized units produces a different count, the size of the attribute remains the same **E2.6** Use analog and digital clocks and timers to tell time in hours, minutes, and seconds **Language** **Strand D Expressing Ideas and Creating Texts** **D1.1** Identify the topic, purpose, and audience for various texts they plan to create, and describe how the chosen text form and genre will help communicate their intended meaning **D1.2** Generate and develop ideas about given and chosen topics, using various strategies, and drawing on various resources, including their own lived experiences, and learning from other subject areas **D1.3** Gather information and content relevant to a topic, using three or more sources **D1.4** Sort and sequence ideas and information, using appropriate strategies and tools, taking into account the text form and genre to be used **Agriculture/Agri-Foods Themes** • Grains are important ingredients in many healthy foods. They combine well with other flavours to create imaginative and tasty food.	A fun and engaging video will show students the importance of creating clear instructions. The mysteries of measuring cups and spoons will become clear as students learn about measuring to follow instructions.
STAGE 6: Market Your Product		
Lesson 1: Decide on a Selling Price (Core Lesson)	**Mathematics Curriculum** **Strand B Number** **B1.3** round whole numbers to the nearest ten or hundred, in various contexts **B2.1** use the properties of operations, and the relationships between multiplication and division, to solve problems and check calculations **B2.5** represent and solve problems involving the addition and subtraction of whole numbers that add up to no more than 1000, using various tools and algorithms	We wouldn't be successful entrepreneurs if we didn't settle on a selling price. Students will use their math skills to determine how much each bar cost to make and how much to charge per bar to realize a profit. The provided Cost of Ingredients and Profit Templates will help them determine their selling price.

LESSON	LEARNING EXPECTATIONS	ACTIVITIES AND LEARNING
	Strand F Financial Literacy **F1.1** Estimate and calculate the change required for various simple cash transactions involving whole-dollar amounts and amounts of less than one dollar. • Key concept: Real-life contexts build understanding of cash transactions while developing proficiency with addition, subtraction, mental math strategies, and math facts. **Agriculture/Agri-Foods Themes** • Grain-based products are not only tasty and part of a balanced diet, they are economically good choices.	
Lesson 2: Media and Audience	**Language** **Strand A Literacy Connections and Applications** **A2.4** Demonstrate an understanding of the forms, conventions, and techniques of digital and media texts, and apply this understanding when analyzing texts **A2.5** Demonstrate an understanding of the interrelationships between the form, message, and context of a text, the audience, and the creator **Agriculture/Agri-Foods Themes** • Grain-based products are not only tasty and part of a balanced diet, they are economically good choices.	Before showcasing their products, students need to define their audience—potential customers—so they can determine how best to reach them. This lesson helps students understand, explore, and communicate their ideas about preferences within their multi-cultural, multi-media environment. A worksheet will help students identify whom they wish to reach.
Lesson 3: Promote Your Product (Core Lesson)	**Visual Arts Curriculum** **Strand D** **D1.4** Use a variety of materials, tools, and techniques to respond to design challenges **D2.1** Express personal feelings and ideas about art experiences and images **D2.2** Explain how elements and principles of design are used to communicate meaning or understanding in their own and others' art work **D2.3** Demonstrate an awareness of the meaning of signs and symbols encountered in their daily lives and in works of art **D3.1** Identify and describe a variety of visual art forms they see in their home, at school, in the community, and in visual arts experiences	In this lesson, students learn about creating hype about a product. Students will explore marketing, its methods, and how it influences consumer behaviour. Students will use multiple media to promote their food product, including radio and TV spots and print ads within such media as magazines and flyers. As they learn, they may become savvy consumers, as well.

LESSON	LEARNING EXPECTATIONS	ACTIVITIES AND LEARNING
	Language Curriculum **Strand A Literacy Connections and Applications** **A2.6** Use digital and media tools to support stages of the design process and to develop creative solutions to authentic, real-world problems **Strand B Foundations of Language** **B1.9** Identify some of the presentation strategies used in oral texts and explain how they influence the audience **B2.2** Demonstrate an understanding of appropriate speaking behaviour in a variety of situations, including small and large-group discussions **B2.3** Communicate orally in a clear, coherent manner, presenting ideas, opinions, and information in a logical sequence **Agriculture/Agri-Foods Themes** • Students describe the benefits of grain as they design and write promotional material and packaging for their granola bars. They will consider how to appeal to people and persuade them to buy their grain-based products.	
Lesson 4: Packaging	**Health and Physical Education Curriculum** **Strand D Healthy Living** **D1.1** Understand food origins, nutritional value, and environmental impact and how those factors and others (e.g., the way we consume and dispose of food) can affect the environment **Visual Arts Curriculum** **D1.4** use a variety of materials, tools, and techniques to respond to design challenges **Critical Thinking** • Students solve meaningful and complex real-life problems by taking concrete steps – identifying and analysing the problem, creating a plan, prioritizing actions to be taken, and acting on the plan – as they address issues and design and manage projects. **Agriculture/Agri-Foods Themes** • Students describe the benefits of grain as they design and write promotional material and packaging for their granola bars. They will consider how to appeal to people and persuade them to buy their grain-based products.	Packaging, like products, comes in many shapes and sizes. In this lesson, students will consider the sustainability of their packaging as they design a suitable way to present their granola bars. They will also learn that there is a career in package engineering. This lesson will challenge students to create a sustainable package for their granola bars. Teachers have the option of using digital applications to allow students greater customization of packaging.

STAGE 7: Business Showcase

This stage wraps up the project with three approaches suggested to support what is permitted in schools. These approaches are from Ontario educators who participated in the STEMterprise pilot.

Approach 1: Bake Sale (with play money)

A bake sale is a fun way to show what students have accomplished and provides an opportunity to enhance students' financial literacy.

1. Students set up a "farm store." Arrange the classroom like a market or bake sale so each table represents a farm store with students' advertising and photos of the products clearly displayed.
2. Have examples of the students' projects for visitors to read. Their work could be presented in notebooks, as a poster, or as a portfolio.
3. In advance, teachers model the method they would like students to use for calculating change. Distribute play money and split the class in half so they can practise being the customer and seller.
4. Students have the opportunity to calculate change. This should be practised in advance

*Note: Consider making change before pricing granola bars to help students be successful.

Approach 2: Dragons' Den/STEM Den

A team of dragons helps students present their products and practise their performance skills and ability to present a compelling argument.

1. It's best to decide how you will wrap up the project and share this with students at the onset of the project.
2. Consider watching an episode of Dragons' Den with your students. (Link in lesson plan.) Discuss what makes the successful pitches different from the unsuccessful pitches. Highlight how the applicants share their ideas rather than what they think of the quality of the ideas.
3. Discuss persuasive strategies, using facts and logic, emotion, and testimonials from respected and trustworthy people.
4. Have students complete the STEMterprise project.
5. If you are baking the granola bars, bake and package them in advance of the Dragons Den event. Consider putting together sample bags.
6. Invite a group of "Dragons" to the event – consider school staff, people in the community, older students.
7. Provide students with a script and time to practise their pitches.
8. On the day of the event, business groups will get their opportunity to "pitch" to the Dragons. Students can watch the presentations.
9. The Dragons will make their decisions and provide awards

LESSON	LEARNING EXPECTATIONS	ACTIVITIES AND LEARNING

Approach 3: Business Showcase (with voting system)

This approach was developed by a teacher whose school could not allow a sale. It works with a voting system with parents/caregivers or school staff voting on different aspects of the granola bars.

1. Students complete the STEMterpise project (baking is optional)
2. Parents and caregivers (or other adults) are invited to come view, taste test, and vote on the students' granola bar companies.
3. Visitors are provided a voting card and asked to rate each group individually from 1-10 on the following categories: looks, taste, marketing.
4. Votes are tallied followed by a celebration of the best in each category and overall

Contact Information:

Brianne Curtis (bcurtis@gfo.ca),
We always welcome your feedback, ideas, and questions.

https://goodineverygrain.ca/ontario-farming-stemterprise/