



BAKER

Activity Plans

SKILLED**TRADES**^{BC}

Baker

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About This Resource

In May 2017, a planning session took place in Victoria, BC. It brought together educators involved in the baking field, professionals from the baking industry, and course developers. The purpose of the planning session was to create a Baker module for the Youth Explore Trades Skills 10–12 course. This project was tasked with the development of learning resources to support the BC Ministry of Education’s Youth Explore Trades Skills Program Guide and aligns in structure with other Youth Explore Trades resources. The activities in the Baker module exposes students to fundamental baking skills as well as knowledge and attitudes needed for careers in the baking profession.

During the planning session, the team identified that the resources and activities should be engaging and hands-on, to offer meaningful opportunities to explore the baking profession. This module introduces students to the field of professional baking and provides activities in baking theory and practice as well as kitchen and food safety and equipment identification. Each activity includes clear and easy-to-follow steps that will equip both new and experienced teachers with easily navigable, engaging and ready-to-use lessons. Each activity can be used as a standalone resource or many/most of the activities can be taught to complete the module. Teachers have the flexibility to order activities in a way that is meaningful and useful to their students.

At the end of this exploratory module, students should be able to answer the following question: “How does the professional baking career suit me as a possible career choice?” To address this question, a reflective portfolio is included as part of the assessment tools. The portfolio also serves to demonstrate how a baker might present his/her work to prospective employers.

In this module you will find this resource overview and nineteen detailed activity plans. These include an activity description, images, video links, terminology, lesson procedure, quizzes and assessment guidelines. All activities will be available as both PDFs and Word documents.

List of Activities

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2. Basic Food and Kitchen Safety
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4. Visit a Bakery
5. Essential Baking Equipment
6. Scale a Recipe
7. Compare Measures and Bake Cookies
8. Describe the Function of Ingredients
9. Research an Ingredient



10. Make Cupcakes
11. Make Biscuits by Hand
12. Bake Holiday or Themed Cookies
13. Make Modelling Chocolate Roses
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17. Make and Bake a Hand Stretched Neapolitan Pizza
18. Decorate with Basic Garnishes
19. Create a Business Plan for a Bake Sale
20. Research a Day in the Life of a Baker

Baker Module Learning Goals

At the planning session that took place in Victoria in early May 2017, participants defined overarching learning goals that the Baker module would offer to students.

It is the intention that by the end of this 30-hour Youth Explore Trades Skills 10-12 module in professional baking, students will have explored the following knowledge, skills and attitudes. These should help students to answer the question “How does the professional baking career suit me as a possible career choice?”

Knowledge

- Describe jobs in the baking/pastry industry and their work environments
- Understand the function and behaviour of ingredients and how to measure them
- Prepare baked goods using safe food handling practices with appropriate equipment, according to recipe or formula
- Describe or calculate the cost of production and resale of baked goods
- Describe the classifications, origins and evolution of baked products
- Understand the effects of the physical environment in relation to production

Skills

- Accurately and safely identify and use bakery tools, equipment and ingredients
- Apply different mixing methods to produce a variety of baked goods
- Use standard baking criteria to evaluate their produces for doneness and quality
- Apply creative finishing techniques to their products

Attitudes

- Identify the attitudes, characteristics and skills necessary for a successful baker
- Understand and distinguish the difference in attitudes between home baking and being a professional baker
- Demonstrate the qualities of teamwork
- Create an artifact that demonstrates characteristics of a successful baker
- Evaluate individual fit with baking as a profession

Basic Food and Kitchen Safety

Description

In this activity, students will review and demonstrate the basic food and kitchen safety required for the completion of the activities in the baking module. Students will watch a short video, examine kitchen and food safety posters, and review food and kitchen safety terminology. After reviewing the information about food and kitchen safety, students will complete a quiz and reflect on their learning.

Lesson Objectives

Students will be able to review and demonstrate an understanding of basic food and kitchen safety requirements. This includes safe handling of food, safe storage of food, oven safety, kitchen communication, cleaning and sanitization, and personal hygiene.

Assumptions

Students are prepared to share, discuss, and brainstorm common sense awareness of safe and unsafe food handling, storage, and kitchen behaviour.

Terminology

Bacteria: A microorganism that can cause illness when present in food. Common bacteria associated with food include salmonella, E. coli, and listeria. Proper food handling procedures reduce the risk of foodborne illness related to bacteria.

Control measures: Systems that are in place and actions that are taken to maintain food safety and to prevent foodborne illness.

Cross-contamination: This occurs when bacteria, viruses, toxins, and/or pathogens are transferred between food or to food via un-sanitized utensils, hands, or surfaces. Contaminated food can cause foodborne illness.

FIFO: An acronym for a food rotation and storing system that applies to dry goods, frozen food, and refrigerated food. FIFO stands for “first in, first out.” This system, when used properly, helps prevent foodborne illness, ensures safe food for consumption, and reduces food waste.

Foodborne illness: This is also referred to as foodborne disease or food poisoning and is the result of food spoilage due to contamination, bacteria, pathogens, parasites, and/or toxins. Symptoms include vomiting, diarrhea, fever, aches, and sometimes death. This can be prevented by proper food handling and kitchen safety.

Perishable food: Food that is perishable is likely to decay or spoil quickly without proper food storage. Some foods will perish more quickly than others.

Potable water: Water that is safe to drink and free from contaminants that may cause illness.



Sanitization: To sanitize a kitchen is to remove dirt, germs, bacteria, disease, infection, and food from utensils, equipment, and surfaces. Detergent, disinfectant, and sanitizers are used to sanitize.

The World Health Organization’s Five Keys to Safer Food:

- keep clean
- separate raw and cooked food
- cook food thoroughly
- keep food at safe temperatures (hot at more than 60°C and cold at less than 5°C), and
- use safe (potable) water and safe raw materials. (See WHO video below for more details.)

Estimated Time

60–120 minutes

Recommended Number of Students

The brainstorm part of the activity can be done as a whole class or in small groups. Students will complete the quiz and written reflection independently.

Facilities

Internet-accessible computer, projector, and screen.

Resources

WHO Keys to Safer Food

<https://www.youtube.com/watch?v=ONkKy68HEIM>

Demonstrating Skills And Knowledge

Procedure

1. Begin the activity by brainstorming common sense food and kitchen safety. Ideas can be added to Padlet, Google doc, whiteboard, poster paper, etc.
2. Review video, terminology, and posters.
3. Students complete quiz.
4. Students reflect on the activity by writing one to two paragraphs. It is recommended to use word processing software or have students post in a portfolio or blog. See Create and Maintain a Journal or Portfolio for details. If students create a digital copy of their reflection, it can be added to the portfolio or blog later. Guiding questions include:
 - a. "What surprised you most?"
 - b. "What are the top 5 things to consider when it comes to kitchen and food safety?"
 - c. "Why is basic food and kitchen safety important for bakers?"

Evaluation Guidelines

Consider co-creating the assessment criteria with your students at the beginning of the activity/project. You may want to include the following:

	Emerging	Developing	Proficient	Extending
Able to identify ways to maintain basic food and kitchen safety.				
Understands food and kitchen safety terminology introduced in this activity.				
Wrote a reflection that demonstrates his/her understanding of the importance of basic food and kitchen safety.				

Quiz

Answer the following questions.

1. List five ways to maintain personal hygiene in a kitchen environment.

2. List three ways to be safe when using ovens.

3. Describe three characteristics of safe kitchen shoes.

4. List three ways in which you can avoid cross-contamination in your kitchen.

5. What is the danger zone and what happens to food in the danger zone?

6. What does FIFO stand for and what is its purpose?

7. At what temperature should the fridge be kept?

8. At what temperature should hot food be kept?

9. Why is food safety important in the baking industry?

10. What are the World Health Organization's Five Keys to Safer Food?

11. List three ways that this photograph demonstrates kitchen safety.



Figure 1

12. List three ways that this photograph demonstrates kitchen safety.



Figure 2

Match Terms With Definitions

- | | |
|---|---|
| <p>1. a microorganism that can cause illness when present ___ in food. Common bacteria associated with food include salmonella, E. coli, and listeria. Proper food handling procedures reduce the risk of foodborne illness related to bacteria.</p> <p>2. systems that are in place and actions that are taken to maintain food safety and to prevent foodborne illness.</p> <p>3. this occurs when bacteria, viruses, toxins, and/or pathogens are transferred between food or to food via un-sanitized utensils, hands, or surfaces. Contaminated food can cause foodborne illness.</p> <p>4. an acronym for a food rotation and storing system that applies to dry goods, frozen food, and refrigerated food. FIFO stands for "first in, first out." This system, when used properly, helps prevent foodborne illness, ensures safe food for consumption, and reduces food waste.</p> <p>5. this is also referred to as foodborne disease or food poisoning and is the result of food spoilage due to contamination, bacteria, pathogens, parasites, and/or toxins. Symptoms include vomiting, diarrhea, fever, aches, and sometimes death. This can be prevented by proper food handling and kitchen safety.</p> <p>6. food that is perishable is likely to decay or spoil quickly without proper food storage. Some foods will perish more quickly than others.</p> <p>7. water that is safe to drink and free from contaminants that may cause illness.</p> <p>8. to sanitize a kitchen is to remove dirt, germs, bacteria, disease, infection, and food from utensils, equipment, and surfaces. Detergent, disinfectant, and sanitizers are used to sanitize.</p> | <p>___ Potable water</p> <p>___ Perishable food</p> <p>___ Foodborne illness</p> <p>___ Sanitization</p> <p>___ Cross-contamination</p> <p>___ Control measures</p> <p>___ FIFO</p> <p>___ Bacteria</p> |
|---|---|

Answer Key

1. Hat/cap/net covering hair; No dangling jewelry; Wear clean clothing; Cover all wounds; Keep nails trimmed and clean; Wear shoes that cover the entire foot.
2. Always use oven mitts when handling hot trays; open the oven all the way when inserting or removing trays; turn off the oven when not in use; communicate by saying “hot” when moving hot trays.
3. Non-flammable; shoelaces are tied and tucked in (or no laces); full foot covered; non-slip.
4. Wash knives and other equipment regularly; keep raw and cooked foods separate; keep tools separated between raw/cooked, meat/non-meat, etc.; wash hands regularly; wipe surfaces as soon as highly perishable food such as eggs, cream and milk are present.
5. The danger zone is between 4°C (40°F) and 60°C (140°F). This is where bacteria can grow rapidly and cause foodborne illness.
6. FIFO is an acronym for a food rotation and storing system and applies to dry goods, frozen food and fresh food in the refrigerator. FIFO stands for “first in, first out.” This system, when used properly, helps to prevent foodborne illness, ensures safe food for consumption, and reduces food waste.
7. Refrigerate food at or below 4°C (40°F).
8. Hot food should be kept at 60°C (140°F) and cooked or reheated to 74°C (165°F).
9. To prevent illness; be aware of potential kitchen hazards; and to make sure food tastes delicious and fresh.
10. Keep clean; separate raw and cooked food; cook food thoroughly; keep food at safe temperatures; use safe water and safe raw materials.
11. Handwashing station with reminder; fingernail scrub; eye wash station; paper towel; hot and cold water; soap.
12. Hair covered; clean uniform; sleeves rolled up; oven mitts on; no dangling jewellery; proper footwear.

Match Terms With Definitions

- 7 Potable water
- 6 Perishable food
- 5 Foodborne illness
- 8 Sanitization
- 3 Cross-contamination
- 2 Control measures
- 4 FIFO
- 1 Bacteria

Create and Maintain a Journal or Portfolio

Description

In this activity, students will keep an ongoing journal or portfolio that demonstrates their learning. The journal or portfolio will include photos and reflections about the theoretical and practical learning process throughout the entire module. This will take on a chosen form such as a blog, website, portfolio (digital or hard copy), or journal (digital or hard copy).

This could be done as a hard copy assignment but it is easier for submission to post-secondary if it is done online. (Hard copy assignments can be scanned or photographed for conversion to a digital format.) Students applying for jobs may find it easier to bring a hard copy with them.

Lesson Objectives

Students will be able to:

- describe the characteristics of their product and then compare it to the characteristics of an ideal baked product of the same type
- examine challenges with their baking experience and propose changes to resolve the challenges
- observe and reflect on the process and results of their baking experience
- describe what new techniques or information they learned from their baking experience
- discuss their personal connection to recipes they have brought (e.g., “it’s an old family recipe”, “I made this with my grandmother”, “it’s part of my culture”, “it’s my favourite”, etc.)
- display images of their mise-en-place, baking process, and final products, and
- reflect on their skill development via ongoing documentation.

Assumptions

Students have access to a digital portfolio or collection of Word documents and can take photos and upload or print them.



Terminology

Blog: A website run by an individual to document a person's experiences, it can be updated daily, weekly, or as information arises. Blogs often include anecdotal reports or stories.

e-Portfolio: An electronic portfolio is a collection of writings and photos used to demonstrate your work. e-Portfolios can be submitted to post-secondary institutions along with applications for entrance to many programs. The information is stored online for easy access.

Journal: A reflective record of events or diary of activities.

Mise-en-place: A French culinary term meaning *everything in its place*. That is, having all ingredients, equipment, and tools assembled before beginning to cook or bake.

Estimated Time

30–60 minutes: Introduction to assignment

10–15 minutes a day outside of class time (photography will be done in class)

Recommended Number of Students

This activity is done individually.

Facilities

Internet-accessible computer

Resources

If students are completing this activity electronically, have the students use the school district's on-line portfolio system or Google docs to share information. Some students may prefer to start their own blog.

Demonstrating Skills And Knowledge

Procedure

1. Show students an example of other student portfolios preferably with baking or culinary content.
2. Explain the value of having a collection of their work for reference for post-secondary application or for employment purposes.
3. Explain that all photos must be of good quality (minimum of three and maximum of six for each activity). Check that lighting is good with no shadows or background mess: one for *mise-en-place*, one–two for process, and one–two of the final product.
4. In a computer lab, have students log on to their account and show them where they will be collecting their photos or results and how to submit their work digitally.
5. Ensure all students are comfortable uploading their images and adding written reflections.
6. Remind students daily to take photos and add to their portfolio, blog, or document collection, and to save and upload.

Evaluation Guidelines

- Student has included three quality photos for each product.
- Student has included a short reflection of the experience or knowledge gained from each activity/photo.
- Students are to upload after each activity. Teacher should monitor every week or so to ensure that students are on track and submitting photos and documents. Feedback about quality of photos and reflections early on will help ensure better quality in future posts.
- It is recommended to use a Pass/Fail marking scheme as the process is for the student's benefit.

Important note for students: When submitting your journal to post-secondary institutions, it is important to send a carefully curated version of your work. It is advised to submit your best work, to showcase your talents and learning process. You may not want to include everything you have written.

Extension/Culminating Activity: Successful Baker Traits

Description

In this activity, students will explore and identify the traits of a successful baker by reflecting on professional baking traits and creating a personal representation of what this means to the student him/herself. This personal representation can be in the form of a map, photograph, collage, painting, video, drawing, diagram, etc. Students can first brainstorm characteristics as a class or in small groups, and time may be given for additional research/reflection. The representation will be posted to the student's portfolio/blog as a final reflective piece. This is a culminating activity.

The description of this activity will be repeated in a later Activity Plan as a reminder to the teacher.

Lesson Outcomes

Students will be able to determine if baking suits them as a profession.

Assumptions

- Student has a portfolio, journal, or blog.
- The student has completed other Activity Plans in the Baker module including A Day in the Life of a Baker, Visit a Bakery, and other Activity Plans that provide an opportunity to experience baker tasks.

Estimated Time

45–90 minutes

Visit a Bakery

Description

Students will visit a local bakery, a restaurant's pastry department, and/or instructional institution where they can observe bakers and/or pastry chefs in action and learn about professional and commercial baking facilities and equipment.

Students will prepare questions in advance to ask the bakers about the job requirements. Questions may include topics such as hours of work, necessary skills, education, personal characteristics, daily tasks, etc.

After the field trip, students will describe the job of a baker as well as the equipment used.

Lesson Objectives

Students will be able to:

- identify the attitudes, characteristics, and skills necessary to be a successful baker
- understand what it is like to work in a bakery, and
- learn how baking equipment is used in the facility.

Safety Considerations

The teacher should consider travel risks depending on the location of the bakery for the field trip.

Assumptions

Students will prepare questions in advance to ask the baker during the field trip.

Terminology

Apprentice: An apprentice is a person who is learning a trade from a skilled employer; in this context, a baking apprentice is working and training on-the-job from a skilled baker and/or pastry chef.

Baker: A baker is a person who works professionally to make cakes, breads, and other baked goods.

Pastry chef: A pastry chef is a person who specializes in making desserts, cakes, and pastries.

Estimated Time

2–4 hours



Recommended Number of Students

1–24 students. It's suggested to divide the group in two for a class that has more than 16 students.

Facilities

A local commercial bakery or restaurant that is willing to host a group of students. It is the responsibility of the teacher to arrange this field trip. There is an option to arrange a virtual field trip through Skype or Google Hangouts. This is up to the teacher and depends on access to a local bakery.

Transportation: the teacher arranging the field trip will organize transportation. This could be by public transportation, school bus, walking, or private vehicle.

A camera and notebook will be helpful to document the trip.

Resources

25 Bakeries Around the World You Must See

https://www.buzzfeed.com/candacelowry/bakeries-around-the-world-you-should-visit-before-you-die?utm_term=.ao8m7OOdn#.cnwNaMMRI

A Visit to a Bake Shop

<http://www.thekitchn.com/template-makergrower-tour-maker-or-grower-tour-2-171874>

Visit Poilane Bakery in Paris

<http://www.marthastewart.com/997298/visit-poilane-bakery-paris>

Learn About Baking Bread in NYC

<http://www.marthastewart.com/916461/baking-bread-sullivan-street-bakery>

Visit a Parisian Bakery

<https://www.youtube.com/watch?v=n-uAls-iPeg>

Demonstrating Skills And Knowledge

Procedure

1. Review the videos and articles and examine the photograph in *25 Bakeries Around the World You Must See* and *A Visit to a Bake Shop*. Discuss the videos, photos, and articles and then brainstorm a list of possible questions students might have about the baking profession.
2. Have students write down questions to ask a baker. This can be done individually, in small groups, or as a whole class.
3. The teacher will arrange a field trip to a bakery. Perhaps it is a local bakery, a restaurant with a pastry department, or a school with a commercial baking kitchen. Another possibility is arranging a virtual tour via Skype, Google Hangouts, etc.
4. During the field trip/tour, students ask questions and take photos and notes.
5. After the field trip/tour, students will write/create/produce a summary of what the baking career involves. This could be a poster, slideshow, job description, short film, etc. Suggestions for the report are to include at least ten facts that describe the professional baking career and list and describe the use of five pieces of equipment the baker uses on a daily basis.
6. When complete, students will post this piece of work to their portfolios along with a reflection on the highlights and challenges of a baking career. **Option:** Students can present their reports to the class.

Evaluation Guidelines

Consider co-creating the assessment criteria with your students at the beginning of the activity/project. You may want to include the following:

	Emerging	Developing	Proficient	Extending
Participates in the field trip, came prepared with questions, and demonstrates a curious and engaged attitude.				
Describes the baking profession through a poster, job description, article, slideshow, etc.				
Writes a reflective blog post that demonstrates his/her understanding of the baking profession what he/she might find enjoyable and/or challenging about the job of a baker.				

Essential Baking Equipment

Description

In this activity, students will learn to identify essential baking equipment and understand the purpose of each tool. To do so, they will review an infographic and list of baking terminology explaining the purpose of essential baking tools and equipment. After the review, students will practise equipment identification through two games. Students will complete a matching and categorizing quiz at the end of the Activity Plan.

Lesson Objectives

Students will be able to identify and determine the purpose of essential baking equipment.

Safety Considerations

Basic food and kitchen safety

Terminology

See student worksheet with photos, names, and use of equipment at the end of the Activity Plan.

Estimated Time

60–120 minutes

Recommended Number of Students

This activity may be done alone, in pairs, in small groups, or as a class.

Facilities

- Home Economics lab or cafeteria kitchen
- Access to equipment (preferable) or photographs of equipment

Resources

- Baking Equipment and Tools poster
- Personal Hygiene poster



Equipment

The following is a list of equipment included on the student worksheet at the end of the activity plan:

- rectangular pan
- circular pan
- sheet pan
- pie pan
- muffin tin
- springform pan
- cooling rack
- non-stick silicone baking mat
- proofer
- gas stove
- electric convection oven
- volume measuring cups
- measuring cups
- measuring spoons
- candy thermometers
- digital thermometers
- balance scale
- kitchen scale
- whisk
- electric mixer
- wooden spoon
- silicone spatula
- upright mixer
- sieve/sifter
- zester
- peeler
- offset spatulas
- pastry cutter
- scoops
- shaker
- rolling pin
- bench/dough scraper
- multiwheel adjustable pastry divider
- piping bag
- piping tips
- blow torch
- grater
- tongs
- ladle
- metal mixing bowls
- revolving cake stand

Demonstrating Skills And Knowledge

Procedure

1. Brainstorm a list of essential baking equipment.
2. Review infographic and essential baking equipment photos, names, and terminology. Add anything missing to original list.
3. Ask students to categorize tools into categories of measuring, mixing, forming and proportioning, baking, and finishing and cooling.
4. Play memory game: put an assortment of tools on a table; invite students to study and memorize the names of the equipment; cover the equipment with a tablecloth; students try to write as many as possible within a certain time. Check to see how many were remembered.
5. Play matching game (match picture with name of equipment and use). This can be created by printing, cutting, and rearranging photos and names of baking equipment. (Students can help with this.)
6. Complete the quiz.
7. Students add reflection post to blog/portfolio which highlights three–five essential pieces of baking equipment.

Suggested reflection questions:

- What surprised you?
- What did you enjoy about this activity?
- What is something new you learned?
- What was challenging about this activity?

Evaluation Guidelines

Consider co-creating the assessment criteria with your students at the beginning of the activity/ project. You may want to include the following:

	Emerging	Developing	Proficient	Extending
Identifies basic baking equipment.				
Explains the use of basic baking equipment.				
Writes a reflective blog post that highlights three–five pieces of essential baking equipment.				

Baking Equipment Quiz

1. List three items used to measure while baking.

2. List five items used to mix while baking.

3. List five items used to bake, finish, or cool baked products.

4. What are these items used for when baking?



5. What are these items used for when baking?



6. What is this item used for when baking?



Essential Baking Equipment

Photo of Equipment	Name and Use of Equipment
	
	
	

Photo of Equipment	Name and Use of Equipment
	
	
	

Photo of Equipment	Name and Use of Equipment
	
	
	

Photo of Equipment	Name and Use of Equipment
	
	
	

Photo of Equipment	Name and Use of Equipment
	
	
	

Photo of Equipment	Name and Use of Equipment
	
	
	

Photo of Equipment	Name and Use of Equipment
	
	
	

Photo of Equipment	Name and Use of Equipment
	
	

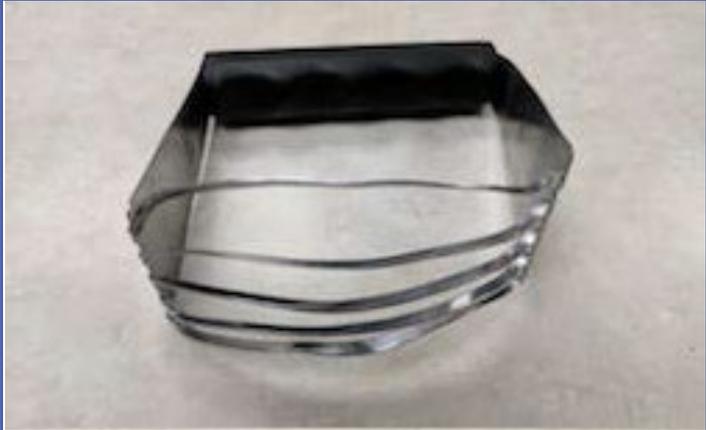
Photo of Equipment	Name and Use of Equipment
	
	
	

Photo of Equipment	Name and Use of Equipment
	
	
	

Photo of Equipment	Name and Use of Equipment
	
	
	

Photo of Equipment	Name and Use of Equipment
	
	
	

Photo of Equipment	Name and Use of Equipment
	
	
	

Photo of Equipment	Name and Use of Equipment
	

Baking Equipment Quiz Answer Key

1. Measuring cups, measuring spoons, scales, liquid measuring cups.
2. Sifter, strainer, spatula, whisk, pastry blender, electric or stand mixer, mixing bowls, wooden spoons.
3. Baking mats, sheets, pans, muffin tins; timers; baking/cooling racks; offset spatulas; piping bags and tips.
4. Offset spatula for spreading icing or batter uniformly and lifting baked goods from pans/trays.
5. Measuring cups for measuring wet or dry ingredients.
6. A proofer provides a warm and controlled environment for rising dough.

Essential Baking Equipment Answer Key

Photo of Equipment	Name and Use of Equipment
	Rectangular pan for baking cake
	Circular pan, typically used for cake baking
	Sheet pan/baking sheet (can be used for baking biscuits, scones, cookies, etc.)

Photo of Equipment	Name and Use of Equipment
	Pie pan, typically used for the baking of pie crusts and pies
	Muffin tin, typically used for the baking of muffins or cupcakes
	Springform pan for baking cakes with bottom layers which are delicate and susceptible to crumbling, such as cheesecake

Photo of Equipment	Name and Use of Equipment
	Cooling rack to provide air circulation during the cooling stage for baked goods
	Non-stick silicone baking mat; can be used in place of parchment paper
	A proofer provides a warm and controlled environment for rising dough

Photo of Equipment	Name and Use of Equipment
	Gas stove and oven for baking and cooking. Similar to electric stove and oven.
	Electric convection oven with multiple racks
	Volume measuring cups for measuring liquids

Photo of Equipment	Name and Use of Equipment
	<p>Measuring cups for measuring wet or dry ingredients. Sizes typically include $\frac{1}{8}$ cup, $\frac{1}{4}$ cup, $\frac{1}{2}$ cup and 1 cup</p>
	<p>Measuring spoons for measuring small amounts of wet or dry ingredients. Sizes typically include $\frac{1}{8}$ teaspoon, $\frac{1}{4}$ teaspoon, $\frac{1}{2}$ teaspoon, 1 teaspoon and 1 tablespoon</p>
	<p>Candy thermometers can be used to measure the temperature of sugar solutions to determine the stage of the candy. They can also measure the temperature of oils when deep frying</p>

Photo of Equipment	Name and Use of Equipment
	<p>Digital thermometers help to measure the internal temperature</p>
	<p>A balance scale is used to measure items in weight units such as grams</p>
	<p>A kitchen scale can be used to weigh a variety of dry or liquid baking ingredients</p>

Photo of Equipment	Name and Use of Equipment
	<p>A whisk adds air to a mixture (known as whipping or whisking) and also helps to make the mixture smooth</p>
	<p>An electric mixer with several attachments for whisking, kneading and stirring</p>
	<p>Wooden spoons do not conduct heat and are used to stir mixtures or batters</p>

Photo of Equipment	Name and Use of Equipment
	<p>Silicon spatulas are typically heat-treated and can be used in place of wooden spoons. They can also be used for scraping down bowls</p>
	<p>Upright mixer for mixing, kneading and stirring large volumes of baking ingredients</p>

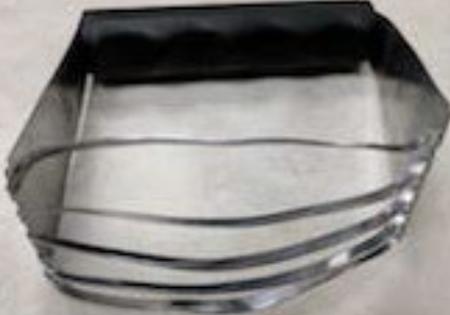
Photo of Equipment	Name and Use of Equipment
	<p>A sieve or a sifter is used to separate materials. Cake flour and icing sugar, for example, are sifted before use</p>
	<p>Pastry cutter (sometimes also called Pastry blender) are used to mixing butter or other solid fats into flour to make flaky pastry</p>
	<p>Scoops are typically used to portion batters for muffins and cookies as well as ice cream and sorbets</p>

Photo of Equipment	Name and Use of Equipment
	Shaker for dusting pastry or baked goods with light ingredients such as powdered sugar, chocolate or cinnamon
	Rolling pins are typically used to roll out doughs into flat pieces. Examples of doughs for rolling out include sugar cookie, cinnamon bun and pie doughs
	Bench or dough scrapers are used to cut, move and manipulate dough when baking. Plastic scrapers are used for scraping down bowls and metal scrapers are used for portioning, dividing and bench cleaning

Photo of Equipment	Name and Use of Equipment
	<p>Cookie cutters are used to portion cookies or biscuits into a particular shape</p>
	<p>Multi-wheel adjustable pastry dividers allow the user to divide and cut pastry and sheet cakes and cookies into uniform sizes</p>
	<p>Piping bags help to pipe decorative icing to baked goods and can be used for portioning batters. Piping tips are typically attached to piping bags</p>

Photo of Equipment	Name and Use of Equipment
	<p>Piping tips control the flow and shape of icing and batter. They are attached to piping bags before use.</p>
	<p>A blow torch for adding the final touches to baked goods such as baked Alaska, meringue, crème brûlée.</p>
	<p>Grater for grating hard ingredients such as chocolate, nutmeg or cheese</p>

Photo of Equipment	Name and Use of Equipment
	Tongs for picking up hot or delicate items
	Ladle for scooping liquids
	Metal mixing bowls for the collection or mixing of ingredients (dry, wet or both)

Photo of Equipment	Name and Use of Equipment
 A white, circular revolving cake stand with a green base, used for rotating cakes for serving and display.	A revolving cake stand allows the cake to be cut, served and displayed efficiently

Scale a Recipe

Description

In this activity, students will be presented with several basic baking recipes. They will be presented with the terminology used as well as learn to adjust the recipes for the required quantity of finished product.

Note: a recipe may also be referred to as a formula.

Lesson Objectives

Students will be able to:

- understand terminology of baking recipes
- calculate conversions from volume to metric and/or imperial measurements
- calculate adjustments needed to scale a recipe for increased or decreased yield, and
- interpret common baking recipes abbreviations.

Safety Considerations

Basic food and kitchen safety

Assumptions

Students know basic math functions (addition, subtraction, multiplication, division) and understand the concept and use of decimals.

Terminology

Conversion: Calculating the different values of the same quantity of an ingredient using different units of measurement.

Formula: A balanced recipe containing the list and weights of ingredients, procedure, and yield; also known as a recipe.

Imperial System: A system of measurements introduced as a standard during the era of the British Empire. The system is only retained, in part, by the UK, Canada, and the US.

Metric System: A system of measurement based on the decimal (power of 10) system.

Portion control: The understanding of serving sizes and the ability to consistently reproduce identical amounts of a product.

Scaling: The act of measuring ingredients by weight or volume; usually the first step in the baking of products.

Sifting: The act of separating lumps and aerating powdered material through a fine mesh screen.

Unit size: The weight or volume of a specific item as it pertains to a recipe.



Volume measurement: A system of measuring ingredients (typically) for use in cooking and baking.

Yield: The amount of product produced from a specific recipe.

Estimated Time

45 minutes

Recommended Number of Students

This activity should be done individually or in groups of 2–4.

Facilities

- Home Economics lab or cafeteria kitchen
- Internet-accessible computer, projector, and screen

Resources

Ingredient Weight Chart

<http://www.kingarthurflour.com/learn/ingredient-weight-chart.html>

Demonstrating Skills And Knowledge

Procedure

1. Refresh students' knowledge of:
 - a. Measuring and basic scaling. Have students weigh given volume quantities of ingredients and log the results to emphasize the variables in the volume method.
 - b. Conversion
 - c. Use of scales
2. Hand out the recipe of choice. (Three recipes in chart format are included at the end of the activity plan.)
3. Review the recipe to understand the terminology basic production process.
4. Have students modify the recipe.
 - a. Start with halving and doubling the quantities as given.
 - b. Convert given values from volume to imperial or metric measurements (See conversion guide or make your own).
5. Calculate the yield (if not given) and adjust yield by altering the size of the desired finished product. (e.g., Convert from small cookie to large cookie or from loaf-sized bread to dinner buns.)
6. Increase the difficulty of the scaling up or down. Have the students in groups re-calculate the recipe to make large quantities for a bake sale. Have each group work on a different recipe. (e.g., 100 cookies, 100 muffins.)
7. Verify answers by using the sum of the recalculated values and cross checking the result with desired yield.

Extension

Have the students research a recipe. They can search the web, use a favourite cookbook, or bring a family recipe.

- Write the recipe out on a blank recipe sheet.
- Calculate conversions from volume to weight.
- Scale up or down to make a pre-determined yield.

Evaluation Guidelines

- Turn in sheets for marking. Alternately, have students work in pairs to check each other's work by comparing answers and redoing calculations if necessary.
- Present home recipe for review and check of calculations (student may wish to make the product at school or at home if appropriate to do so).

Measurement Conversion Table for Common Baking Ingredients

Ingredient	Ounces per cup	Grams per cup (oz.)	Grams per teaspoon (t)	Grams per tablespoon (T)
Baking powder or soda			4.6	13.8
Butter	8	227	4.8	14.2
Flour (all purpose)	5	140	2.6	7.8
Milk	8	245	5.1	15.3
Milk powder	3	125	1.5	4.25
Salt, fine			6	18
Shortening	8	227	4.3	12.8
Sugar brown	7	200	4.6	13.4
Sugar white, granulated	7	200	4.2	12.5
Vegetable oil	7	220	4.5	13.7
Water	8	237	5.3	14.8
Yeast instant rapid			2.8	8

Professional Baking Conversion Chart of Common Values

Note: Imperial units are US, not UK (verify source of web searched material).

Measure	Abbreviation	Equivalent
1 pint	pt	16 (fl) oz.
1 pint (water)		1 lb.
1 pint		2 cups
1 cup	c	8 oz.
1 gallon	gal	8 pt
1 quart	qt	2 pt
4 quarts		1 gal
1 litre	L	1000 mL
1 litre (water)		1 kg
1 litre (water)		2.2 lb.
1 pint		472 mL
1 cup		236 mL
1 teaspoon	tsp or t	5 mL
3 teaspoons		1 T
4 tablespoons	Tbsp or T	¼ c
2 cups		1 pt
4 cups		1 qt

Measure	Abbreviation	Equivalent
1 pound	lb.	454 g
1 ounce	oz.	28 g
1 kilogram	kg	1000 g
1 kilogram		2.2 lb.
¼ pound		4 oz.
½ pound		8 oz.
¾ pound		12 oz.
1 pound		16 oz.

Important note for students: When reviewing imperial measurements, remember that there are 16 ounces (oz.) to 1 pound (lb.).

To convert ounces (oz.) to a decimal fraction of 1 pound (lb.), divide the number of ounces by 16.

Example

$$\begin{aligned} 1.5 \text{ lb.} &= 1 \text{ lb.} + (0.5 \times 16) \text{ oz.} \\ &= 1 \text{ lb. } 8 \text{ oz.} \end{aligned}$$

To convert decimals of a pound into ounces, multiply by 16.

Example

$$\begin{aligned} 3.625 \text{ lb.} &= 3 \text{ lb.} + (.625 \times 16) \text{ oz.} \\ &= 3 \text{ lb. } 10 \text{ oz.} \end{aligned}$$

Ounces	Decimal Fraction of a Pound
1	0.0625
2	0.125
3	0.1875
4	0.25
5	0.3125
6	0.375
7	0.4375
8	0.5
9	0.5625
10	0.625
11	0.6875
12	0.75
13	0.8125
14	0.875
15	0.9375
16	1.0

Empress Hotel Famous High Tea Scone Recipe

Yield

1800 g = 2 dozen (24) × 75 g scones

Use the chart below to double (×2) and halve (÷2) the recipe. Your teacher will give you the final multiple, or decide on your own.

Ingredients	Volume	Metric	Imperial	×2	÷2	
Butter*	1 c	225 g				
Sugar	1 c	210 g				
All purpose flour	4½ c	540 g				
Baking powder	2 Tbsp	28 g				
*Salt (omit if using salted butter)	1 tsp	5 g				
Raisins	¾ c	120 g				
Egg	4 eggs	200 g				
Whipping cream	2 c (450 ml)	476 g				
Beaten egg for egg wash)	1					

Method

Key Stage	Comments
Mixing (rubbing in or 'scone' method)	<ol style="list-style-type: none"> In a large bowl, rub the butter, sugar, baking powder, and salt until a sandy texture is formed but there are still pea-sized lumps of butter in the mix. Fold in the raisins. Blend the cream and eggs. Make a well in the dry mix and pour the liquid in, stirring until a smooth dough is formed. Let rest for 10 minutes.
Make-up and panning	<ol style="list-style-type: none"> Roll out to ½" (13 mm) thickness on a floured bench. Cut with round cutter to desired size. For variety roll out round but cut wedges before baking. Place on cookie sheet.
Baking	Bake at 177°C or 350°F for approximately 15 minutes. Do not over bake!

Peanut Butter Cookies

Yield

2957 g or 3072 g with chocolate chips = 5 dozen (24) × 50 g cookies

Use the chart below to double (×2) and halve (÷2) the recipe. Your teacher will give you the final multiple, or decide on your own.

Ingredients	Volume	Metric	Imperial	×2	÷2	
Butter		450 g				
Sugar		450 g				
Brown Sugar		340 g				
Peanut Butter		500 g				
Egg	4 eggs	200 g				
Vanilla		20 g				
All purpose flour		740 g				
Baking powder		32 g				
Chopped Peanuts		225 g				
Option:						
Chocolate Chips		115 g				

Method

Key Stage	Comments
Mixing (creaming method)	<ol style="list-style-type: none"> 1. Cream the butter and sugar until smooth. (Don't over beat as this will make the cookies spread too much.) 2. Add peanut butter. 3. Add eggs and vanilla slowly (room temperature). 4. Mix until smooth, scraping bottom of bowl if using a mixing machine. 5. Sift together flour and baking powder and fold into first mixture. 6. Add chopped peanuts and chocolate chips.
Panning	<ol style="list-style-type: none"> 1. Drop, scoop at 50 g leaving space between cookies (one dozen per 13 × 18 cookie sheet). 2. Press with fork for decoration.
Baking	Bake at 177°C or 350°F for approximately 15 minutes. Do not over bake!

White Pan Bread

Yield

2957 g or 3072 g with chocolate chips = 5 dozen (24) × 50 g cookies

Use the chart below to double (×2) and halve (÷2) the recipe. Your teacher will give you the final multiple, or decide on your own.

Ingredients	Volume	Metric	Imperial	×2	÷2	
Bread flour	4 c	600 g				
Yeast Instant (rapid)	2 t	6 g				
Salt	2½ t	12 g				
Water	1¾ c (400 ml)	400 g				
TOTAL		1018 g				

Method

Key Stage	Comments
Mixing by hand (kneading)	<ol style="list-style-type: none"> In two separate bowls weigh flour and salt. Then weigh the water (22°C) and yeast and evenly disperse into the water. Add the flour and salt to the water and yeast and mix by hand until coarse dough is formed. Cover and rest the dough for a few minutes. Knead the dough for 20 seconds or until it resists. Form into a ball, cover and allow resting for 5 minutes. Repeat this process five to 6 times. Examine gluten development.
Mixing by machine	<ol style="list-style-type: none"> Put all the ingredients into the mixing bowl using the hook attachment. Mix for one minute on slow speed. Adjust hydration if necessary. Scrape down bowl taking care to scrape right down at the bottom. Examine gluten development. Continue mixing for 2 minutes. Turn to second speed and mix for another 2 minutes.
Bulk fermentation	Cover dough and let rise until double in volume.
Stretch and Fold (AKA punch-down or degas)	Fold the dough once at 30 minute interval if required.
Dividing and shaping	Shape and mould the dough to fit into a greased loaf pan.
Final fermentation	Allow the loaves to rise until almost double size.
Baking	<ol style="list-style-type: none"> Bake on middle shelf at 220°C for 30 to 40 minutes or 200°C in convection oven. Check internal temperature should be 94–98°C. De-pan immediately and cool on wire rack. Wait 10 minutes before cutting, eating and evaluating.

Compare Measures and Bake Cookies

Description

In this activity, students will scale ingredients using both imperial and metric measurements. They will understand the relationship between imperial and metric units that are typically used in baking. The discrepancy of measuring ingredients by volume will also be examined.

Students will scale ingredients for an oatmeal chocolate chip cookie recipe using imperial measurements first, followed by metric. Students will also measure a cup of flour of various densities and compare it to the weight of a cup of water. They will proceed to make and bake the cookies in the metric format, and evaluate the final product for doneness and quality.

A quiz or worksheet on identifying units of measure and measurement conversions is included.

This activity can be done in conjunction with Baker's Math: Scaling a Recipe Activity Plan.

Lesson Objectives

Students will be able to:

- measure ingredients using a digital scale and/or a baker's scale
- tare (or zero out) a container
- choose correct equipment to measure by volume or weight
- identify and describe the units of the metric, imperial, and volumetric systems of measurement
- convert between metric and imperial measures of weight and volume, and
- evaluate chocolate chip cookies for doneness and quality.

Safety Considerations

Basic food and kitchen safety

Assumptions

- Students know basic math functions (addition, subtraction, multiplication, division) and understand the concept and use of decimals.
- Students have an understanding of ingredient measurement, food handling safety, and appropriate clothing and personal attire in kitchens.



Terminology

Baker's scale: A mechanical balance scale that is used to measure in imperial or metric weight units.

Digital scale: An electronic scale that measures items according to weight, in various units and increments.

Imperial: A system of weights and measures originally developed in England. Similar but not always the same as US standard units.

Metric: A decimal system of weights and measures based on the metre as a unit of length, the gram as a unit of mass, and the litre as a unit of volume.

Tare: Reset the scale to zero, regardless of the container and/or ingredients already on the scale.

Estimated Time

75 minutes

Recommended Number of Students

This activity may be done individually or in pairs.

Facilities

Home Economics lab or cafeteria kitchen

Demonstrating Skills And Knowledge

Procedure

1. Have all ingredients accessible.
2. Review the recipe.
3. Guide students in converting the recipe from volume measure to weight in both metric and imperial.
4. Guide students through mixing make-up procedure. Have the students use the metric measures.
5. Bake the cookies. Weigh a cookie before baking to compare to baked weight.
6. While cookies are baking, review the differences in measuring methods.
7. Have students weigh ingredients that have been volume measured to show the challenges.
 - a. dry measures: packed vs. sifted flour (or other examples)
 - b. liquid measures: honey vs. water (or other examples)
8. Weigh a cookie after baking to demonstrate weight loss.
9. Evaluate the cookies. Remind the students to take photos of their cookies for their portfolio.

Pre-work or Extension

Have students complete the worksheet/quiz on conversions.

Evaluation Guidelines

Consider co-creating the assessment criteria with your students at the beginning of the activity/project. You may want to include the following

	Emerging	Developing	Proficient	Extending
Maintains food handling safety, personal hygiene, and workspace and tool and equipment cleanliness.				
Demonstrates an understanding of the relationship between volume and weight and imperial and metric measures.				
Applies proper measurement and practical technique to the make up and baking of cookies.				
Evaluates and reflects on their work and adds to their portfolio with appropriate reflection to demonstrate their learning.				

	Emerging	Developing	Proficient	Extending
Evaluates own cookies on the following criteria: .cookies are round; golden brown on outside and paler in centre; and consistent in size.				
Completes the conversion quiz.				

Important note for students: When reviewing imperial measurements, remember that there are 16 ounces (oz.) to 1 pound (lb.).

To convert ounces (oz.) to a decimal fraction of 1 pound (lb.), divide the number of ounces by 16.

Example

$$1.5 \text{ lb.} = 1 \text{ lb.} + (0.5 \times 16) \text{ oz.}$$

$$= 1 \text{ lb. } 8 \text{ oz.}$$

To convert decimals of a pound into ounces, multiply by 16.

Example

$$3.625 \text{ lb.} = 3 \text{ lb.} + (.625 \times 16) \text{ oz.}$$

$$= 3 \text{ lb. } 10 \text{ oz.}$$

Ounces	Decimal Fraction of a Pound
1	0.0625
2	0.125
3	0.1875
4	0.25
5	0.3125
6	0.375
7	0.4375
8	0.5
9	0.5625
10	0.625
11	0.6875
12	0.75
13	0.8125
14	0.875
15	0.9375
16	1.0

Oatmeal Chocolate Chip Cookies

Yield

1425 g (24 × 60 g cookies, or 48 × 30 g cookies)

Ingredients

1 cup butter/margarine
1 cup white sugar
 $\frac{3}{4}$ cup brown sugar
 $\frac{1}{2}$ tbsp vanilla
2 eggs
 $1\frac{1}{3}$ cups all purpose flour
3 cups oatmeal
 $\frac{1}{2}$ tsp salt (omit if using salted butter or margarine)
1 tsp baking powder
2 cups chocolate chips

Preparation

1. Have all ingredients at room temperature.
2. Place the butter and sugar in a bowl with the paddle attachment (or beat vigorously with wooden spoon).
3. When fluffy and smooth, add eggs one at a time and vanilla.
4. Scrape bowl.
5. Stir in dry ingredients just until incorporated. Don't overmix.
6. Stir in chocolate chips.
7. Scoop or use table spoon and roll into balls of desired size.
8. Place on parchment lined or very lightly greased pan, leaving a half cookie width between units.
9. Flatten slightly.
10. Bake at 177°C (350°F) for approximately 15 minutes for 30 g cookies, 18 minutes for 60 g cookies. They should be golden and moist. There will be some "carry-over" baking.
11. Let cool before de-panning.

Measurement Conversion Table for Common Baking Ingredients

Ingredient	Ounces per cup	Grams per cup (oz.)	Grams per teaspoon (t)	Grams per tablespoon (T)
Baking powder or soda			4.6	13.8
Butter	8	227	4.8	14.2
Flour (all purpose)	5	140	2.6	7.8
Milk	8	245	5.1	15.3
Milk powder	3	125	1.5	4.25
Salt, fine			6	18
Shortening	8	227	4.3	12.8
Sugar brown	7	200	4.6	13.4
Sugar white, granulated	7	200	4.2	12.5
Vegetable oil	7	220	4.5	13.7
Water	8	237	5.3	14.8
Yeast instant rapid			2.8	8

Measurement Conversions and Calculations Quiz

1. Change 9 lb., 2 oz. to kg:
 - a. 1.293 kg
 - b. 2.212 kg
 - c. 4.139 kg
 - d. 4.528 kg
2. Change 18 litres of H₂O into grams:
 - a. 800
 - b. 1800
 - c. 18 000
 - d. 180 000
3. Change recipe into kg: 4 lb., 3 oz. equals:
 - a. 1.899 kg
 - b. 2.985 kg
 - c. 3.312 kg
 - d. 4.120 kg
4. Change recipe into kg: 6 lb., 14 oz. equals:
 - a. 2.129 kg
 - b. 3.029 kg
 - c. 3.119 kg
 - d. 4.231 kg
5. Multiply the following ingredients: 3.325 kg × 11 equals:
 - a. 30.921 kg
 - b. 32.375 kg
 - c. 35.575 kg
 - d. 36.575 kg
6. Change recipe into kg: 12 lb., 13 oz. equals:
 - a. 5.812 kg
 - b. 5.915 kg
 - c. 6.732 kg
 - d. 7.314 kg

7. Change recipe into kg: 9 oz. equals:
- a. 1.329 kg
 - b. 0.850 kg
 - c. 0.255 kg
 - d. 0.200 kg
8. Divide the following ingredients: $21.379 \text{ kg} \div 8$ equals:
- a. 1.492 kg
 - b. 2.222 kg
 - c. 2.672 kg
 - d. 2.937 kg
9. Multiply the following ingredients: $12.155 \text{ kg} \times 5$ equals:
- a. 56.329 kg
 - b. 60.775 kg
 - c. 62.392 kg
 - d. 62.421 kg
10. Multiply the following ingredients: $2.3 \text{ kg} \times 7$ equals:
- a. 12.317 kg
 - b. 15.900 kg
 - c. 16.100 kg
 - d. 16.315 kg
11. Multiply the following ingredients: $16.354 \text{ kg} \times 7$ equals:
- a. 114.478 kg
 - b. 120.739 kg
 - c. 210.316 kg
 - d. 212.491 kg
12. Change the recipe into kg: 1 lb., 4 oz. equals:
- a. 4.930 kg
 - b. 1.291 kg
 - c. 0.567 kg
 - d. 0.391 kg
13. Change recipe into kg: 2 lb., 8 oz. equals:
- a. 3.219 kg
 - b. 2.341 kg
 - c. 1.300 kg
 - d. 1.134 kg

14. Change recipe into kg: 5 lb., 7 oz. equals:
- a. 2.466 kg
 - b. 2.520 kg
 - c. 2.939 kg
 - d. 3.121 kg
15. Divide the following ingredients: $9.625 \text{ kg} \div 4$ equals:
- a. 1.129 kg
 - b. 1.736 kg
 - c. 2.139 kg
 - d. 2.406 kg

Answer Key

1. c. 4.139 kg
2. c. 18 000
3. a. 1.899 kg
4. c. 3.119 kg
5. d. 36.575 kg
6. a. 5.812 kg
7. c. 0.255 kg
8. c. 2.672 kg
9. b. 60.775 kg
10. c. 16.100 kg
11. a. 114.478 kg
12. c. 0.567 kg
13. d. 1.134 kg
14. a. 2.466 kg
15. d. 2.406 kg

Describe the Function of Ingredients

Description

This activity gives students a quick overview of what different ingredients do in a recipe, how an ingredient functions, and how to measure it. This allows students to evaluate the end products and see where they may have had difficulties. By understanding ingredient function, students can determine which ingredient was lacking or in excess, and what steps are needed to improve their future products.

Examples where an understanding of ingredient function can help include:

- cookies are too thin and crispy
- cookies spread too much
- cupcakes are dense, and
- scones are tough and did not rise.

Lesson Objectives

Students will be able to:

- understand the function of ingredients and their impact on baked goods
- learn how to measure specific ingredients
- evaluate baked products based on ingredient function, and
- adjust future recipes based on product observation and evaluation.

Safety Considerations

Basic food and kitchen safety

Terminology

Function of an ingredient: How a specific ingredient behaves in a baked product (i.e., What does it contribute to the overall product?).

Leaveners: Products such as baking soda, baking powder, and yeast that raise, lift, or lighten a baked product through the production of gas.

Estimated Time

45–60 minutes

Recommended Number of Students

This activity should be done individually and discussed as a class.



Facilities

Access to reference materials (Internet-accessible computer and/or textbooks)

Resources

Labensky, Sarah, Alan Hause, and Priscilla Martel. *On Baking*. 3rd Canadian ed. Pearson Canada, 2012

Culinary Institute of America (CIA). *Baking and Pastry: Mastering the Art and Craft*. Wiley, 2004

Crafty Baking

<https://www.craftybaking.com/>

Demonstrating Skills And Knowledge

Procedure

1. Discuss the importance of understanding ingredient function and how it allows students to evaluate and change or correct recipes.
2. Introduce the resources that are available to the students.
3. Hand out the table “Function of Ingredients in Baking”. **Note:** This is not an exhaustive list of ingredients.
4. Give them a deadline to complete the chart (the sooner the better as it affects all their lab work).
5. Check or mark the assignment.
6. Discuss through questioning of some common baking mistakes to reinforce understanding of the topic.
7. Ask students to write a reflection piece for their portfolio.

Evaluation Guidelines

This can be assigned as a pass/fail assignment as the reference is for the students' benefit.

Student responses need not be as in-depth, depending on their interest and the time allowed for the assignment.

Evidence of understanding comes in their reflections and evaluations of final products as well as working with the ingredients throughout the module.

Function of Ingredients in Baking

Name of Ingredient	Function(s) In Baking	Unique Properties or Types	Ways it is Measured (Method and Equipment)
All purpose flour			
Pastry flour			
Bread flour			
Sugar			
Eggs-whole			
Egg whites			

Name of Ingredient	Function(s) In Baking	Unique Properties or Types	Ways it is Measured (Method and Equipment)
Egg yolks			
Liquids-Water Milk Juice			
Chemical leaveners: Baking soda Baking powder			
Organic leaveners: Yeast			
Fats			
Salt			
Flavourings			

Function of Ingredients in Baking—Answer Key

Name of Ingredient	Function(s) In Baking	Unique Properties or Types	Ways it is Measured (Method and Equipment)
All purpose flour	Provides structure to baked product	Comes in many forms and textures; usually pre-sifted. Moderate amount of gluten. Used in a wide variety of baking.	Weighed; or stirred, scooped and leveled. Use dry measures.
Pastry flour	Provides structure to baked product	Lower amounts of gluten used to make cakes and pastries; is finer and compacts easily.	As above
Bread flour	Provides structure to baked products. Provides structure to baked products.	Higher amounts of gluten used for bread making or pizza crust. Makes a sturdier dough.	As above
Sugar	Increases tenderness and volume, aids in browning- caramelization by heat or maillard reaction when mixed with heat and protein. Changes the freezing and boiling point in mixtures. Aids in yeast fermentation. Allows cookies to spread.	Comes in various forms or textures. Granulated white most common. Brown has some molasses; is acidic. Confectioners white is finely ground or powdered. Berry sugar dissolves quickly and is between granulated and confectioners.	Granulated: weighed, scooped into dry measures and leveled. Brown: weighed, or scooped and packed. Confectioners: sifted, weighed or scooped and leveled.
Eggs-whole	Add moisture, color, fat, flavour; function as a leavener; eggs also contribute to the structure of baked products, and retard crystallization.	Generally large sized eggs are used.	Sold by size/weight by numbers by the dozen. 1 Large egg is 3½ tbsp + ½ tsp or 50 grams 4 Whole eggs = 1 cup
Egg whites	Expand and give volume to a baked product, by trapping air in the protein strands of a foam.	Can increase in volume by 6-8 times when beaten. Be sure there is not even a trace of fat on equipment or in the whites or they will not produce a foam.	Egg white = 2 tbsp or 30 g 7–8 Egg whites = 1 cup
Egg yolks	Work as an emulsifier (helps combine fats and liquids). They add fat and color as well as nutrients. They also enhance texture making things creamier and smoother.	All of an egg's vitamins (A,D,E) are in the yolk. It also has phosphorus, manganese, iron, iodine, copper, calcium and zinc.	Egg yolk = 3½ tsp or 18.6 g 12 Egg yolks = 1 cup

Name of Ingredient	Function(s) In Baking	Unique Properties or Types	Ways it is Measured (Method and Equipment)
Liquids: Water Milk Juice	Water hydrates starch particles and softens the proteins in flour. It activates leaveners. It affects the structure and texture of baked products. When heated (baked) water creates steam which increases volume. Milk adds nutrients and color (browning) to the final product. Juice hydrates and adds flavor and acid to initiate leaveners.	Use a good quality drinking water as chemicals and minerals can affect fermentation. Milk may need to be warmed according to recipes. Juice used to replace water but usually for baking soda mixes. Pineapple juice does not set a gelatin mixture.	Liquids are generally measured by volume but can also be measured by weight: 1 mL of water weighs 1 gram.
Chemical Leaveners: Baking soda Baking powder	Increases volume: leaven means to lighten, lift, or raise. Leaveners also affect taste, texture and color of a product.	Too much leavener can over stretch the gluten strands and cause a cake to have a depression in the center. Baking powder reacts when moistened with any liquid: use 1–1¼ tsp per cup of flour. Too much makes things taste bitter. Baking soda requires an acidified liquid to react. Too much soda can cause a soapy flavor. Generally, use ¼ tsp per cup of flour.	Weighed or use a small measure leveled; make sure all lumps are removed or sifted out.
Organic leaveners: Yeast	Through a process known as fermentation, yeast produces carbon dioxide which raises a dough. It also affects the crumb texture and gives a pleasant flavour.	Can be dried active or instant or fresh-cake yeast. Too much heat will kill yeast; too cold and it grows too slowly. Salt affects fermentation.	Measured by weight, or small measures; also comes pre-packaged.

Name of Ingredient	Function(s) In Baking	Unique Properties or Types	Ways it is Measured (Method and Equipment)
Fats	Solid fats (lard, shortening, butter or margarine) contribute tenderness, flavour and when blended with sugar, aid in leavening.	Liquid fats like oils and clarified butter moisten ingredients and make dough smoother and easier to mix.	3–4 different ways to measure: sold by weight, solid fats can be packed into dry measures; blocks can be cut using a guide or they can be melted and measured in liquid measures. Liquid fats sold by volume are measured in liquid measures.
Salt	Regulates yeast growth (volume and speed). It enhances the flavour of other ingredients.	Add it in with the dry ingredients so it doesn't shock or kill the yeast. There are many different types so more research is needed if substituting. Not recommended to reduce salt in recipes especially yeast bread doughs.	Usually measured with small measures or weighed.
Flavourings	They add many distinctive flavours to baked products.	There are many types (extracts, oils, spices and herbs) and forms (powders, purees, peels and liquids). More research will be needed for how they are used.	Usually used in small quantities, measured with small liquid or dry measures.

Research an Ingredient

Description

In this activity, students will use online tools and textbooks to research a basic ingredient used in baking. Possible ingredients to research include: flour, leaveners, eggs, fats, liquids, salt, or eggs. All of these are key ingredients used in baking. Students will learn about the nutritional value of the ingredient, its scientific make-up, uses and forms, and storage and handling. Students will learn about the function of the ingredient and how it contributes to the outcome of baked goods in terms of texture, flavor, colour, spread, etc.

After learning more about the ingredient, students will have the opportunity to bake something that uses the ingredient in the recipe.

Students will present their findings and include photos of the baked product in their journal/ portfolio to share with the teacher and peers.

Lesson Objectives

Students will be able to identify, use, and describe the function(s) of an ingredient used in baking.

Safety Considerations

Basic food and kitchen safety

Assumptions

Students have an understanding of ingredient measurement, food handling safety, and appropriate clothing and personal attire in kitchens.

Terminology

Eggs: This ingredient serves many purposes in baking. Eggs provide flavour, structure, colour, volume, and tenderness and affect the function of other ingredients.

Fats: Oil, butter, and shortening are types of fats used in baking. They contribute to the moistness of the baked goods and help to create a tender texture. Fats also add flavour or enhance the flavour of other ingredients.

Flours: The protein and gluten in wheat flour provide the structure of baked goods. There are many varieties of flours that help to produce different kinds of breads and pastries.

Leaveners: Baking soda, baking powder, and yeast are examples of leavening agents. These affect the volume and “lightness” of baked goods.



Liquids: Examples of liquids used in baking include milk, milk alternatives, water, and juice. These hydrate other ingredients and combine with some to make a chemical reaction. Liquids contribute to the moist texture of baked goods.

Salt: The flavour and sweetness of baked goods are enhanced by salt. It is also effective for controlling yeast fermentation so that breads do not rise too quickly.

Sweeteners: There are many kinds of sweeteners from sugar to honey to artificial sweeteners. These act to add sweetness to the taste of the baked goods as well as keep them moist. Yeast needs sugar to activate.

Estimated Time

120 minutes

Recommended Number of Students

This activity may be done individually or in groups of 2–3.

Facilities

- Home Economics lab or cafeteria kitchen
- Access to reference materials (Internet-accessible computer and/or textbooks)

Resources

Baking Ingredients and Function: A Breakdown

<https://ueat.utoronto.ca/baking-ingredients-function/>

The Function of Basic Ingredients in Baking and Pastry

<https://www.slideshare.net/abuhanifahmohdsaid/intro-36573771>

Functions of Baking Ingredients

<http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1412&context=extensionhist>

Demonstrating Skills And Knowledge

1. Brainstorm a list of common and essential baking ingredients.
2. Ask students to select one ingredient to research.
3. Review the resources above on baking ingredients and their functions.
4. Encourage students to review textbooks and other resources about their chosen ingredients. The research should include nutritional value, scientific make-up, uses and forms, and storage and handling of the ingredient.
5. Students present their findings in their journal/portfolio. Optionally, students can also present their ingredient to the class.
6. Students select a recipe for a baked good that includes their chosen ingredient.
7. Students make the baked good and post a photo of it to their journal/portfolios with a reflection on the function of their ingredient.

Evaluation Guidelines

Consider co-creating the assessment criteria with your students at the beginning of the activity/project. You may want to include the following:

	Emerging	Developing	Proficient	Extending
Researches an ingredient and presents his/her findings in a journal/portfolio post. The research includes nutritional value, scientific make-up, uses and forms, and storage and handling of the ingredient.				
Describes the function of the ingredient and how it impacts baked goods.				
Makes a baked good that includes the researched ingredient and posted a photo and reflection of what s/he learned to his/her portfolio.				

Make Cupcakes

Description

In this activity, students will make white or chocolate cupcakes from scratch. The students will identify the different stages of the process. They will read a cupcake and frosting recipe, scale the recipe to yield the required quantity, gather ingredients and tools, measure ingredients accurately, mix, make up, bake, and decorate the cupcakes.

Lesson Objectives

Students will be able to:

- understand ingredients and their functions in cake making
- calculate the amount of ingredients needed to produce the desired amount of product
- prepare cupcakes using safe food handling practices with the appropriate equipment according to recipe or formula
- apply knowledge of mixing methods to produce a well-risen product
- make frosting with appropriate consistency and apply decoratively to garnish a finished product, and
- evaluate the finished product.

Safety Considerations

Basic food and kitchen safety

Assumptions

The student understands ingredient measurement, food handling safety, and appropriate clothing and personal attire in kitchens.

Terminology

Bench/counter: A workspace of appropriate height and material for processing recipes.

Chemical leavener: A leavening agent (sodium bicarbonate, also known as baking soda) used alone or with a combination of acids (baking powder) incorporated into many baked goods in order to aerate them by the formation of carbon dioxide in the presence of heat and water.

Creaming method: The method of blending butter and sugar together before the remaining ingredients, incorporating air into an emulsified mixture which aids the crumb texture of the cake as well as assists in leavening.

Emulsion/emulsification: A mixture or mixing process by which two unmixable ingredients are held in a uniform suspension (e.g., oil and water, cake batter, mayonnaise).



Frosting/icing: A topping usually based on sugar and fat (often flavoured and coloured) applied to finished cakes.

Garnish: An adornment or embellishment that decorates a food item.

Leavening: The process whereby gas is created during baking, enabling the dough or batter to rise.

Muffin pan: A baking pan with individual cups used to hold cake batter.

Piping bag/pastry bag: A cone-shaped bag often of cloth or plastic, through which various ingredients are forced through a shaped tube.

Plastic scraper: A flexible bowl scraper that has a curved edge and a straight edge. Has multiple uses, and in this context, is used for scraping or cleaning up batter or dough in a bowl or from the table.

Piping tip: A small plastic or metal tip that sits in a pastry bag and delivers the contents of the bag in a decorative, consistent manner.

Scaling: The act of measuring ingredients by weight or volume; usually the first step in the baking of products.

Scoop: A hand-held, semi-spherical tool which measures and deposits an accurate quantity of batter. (verb: the action of depositing batter.)

Yield: The amount of product produced from a specific recipe or formula.

Estimated Time

45–60 minutes: Make and bake

45 minutes: Decorate and garnish

Recommended Number of Students

This activity may be done individually or in pairs.

Facilities

Home Economics lab or cafeteria kitchen

Resources

Super Moist Chocolate Cupcakes

<https://sallysbakingaddiction.com/2017/06/22/super-moist-chocolate-cupcakes/>

Cakes by Lynz: My Cupcake Piping Techniques

<https://www.youtube.com/watch?v=TPKqIScLKmk>

What Happens When You Overmix Cake Batter

<http://www.cupcakeproject.com/2014/05/what-happens-when-you-overmix-cake-batter.html>

Demonstrating Skills And Knowledge

Procedure

1. Make sure all ingredients are at room temperature.
2. Demonstrate making a batch of cupcakes (optional).
3. Review safety procedures.
4. Divide students into pairs if necessary.
5. If a scale is not available, have students perform the calculations to convert from grams to volume measurement (cups and spoons).
6. Have students write a list of tools that they will need and gather them.
7. If you wish to reduce the output, have the students scale the recipe for 12 cupcakes weighing 75 grams each.
8. Discuss sifting and emulsification.
9. Explain why the batter should not be over-mixed.
10. During baking, discuss the leavening process.
11. Wait for cupcakes to cool before frosting.
12. Decorate to taste.
13. Remind students to take photos of the cupcakes for their portfolio.
14. Evaluate cupcakes for quality, taste, and texture.
15. Clean up and review.

Evaluation Guidelines

Consider co-creating the assessment criteria with your students at the beginning of the activity/project. You may want to include the following:

	Emerging	Developing	Proficient	Extending
Follows health and safety guidelines.				
Applies mathematical principles to appropriately scale recipe to desired yield.				
Measures ingredients accurately to ensure uniform cakes and correct texture.				
Demonstrates ability to set oven temperature and assess when product is baked.				
Cools and stores product properly.				
Demonstrates ability to evaluate cakes for quality, taste, and texture in the form of self-reflection notes.				

Basic White Cupcakes

Yield

928 g (16 cupcakes)

Ingredients

110 g butter
225 g sugar
2 large eggs
50 g all purpose flour
150 g cake flour
 $\frac{3}{4}$ tsp baking powder
 $\frac{1}{2}$ tsp baking soda
 $\frac{1}{2}$ tsp salt
 $\frac{1}{2}$ tsp vanilla extract
225 g sour cream or yogurt
15 g lemon or orange zest
30 mL lemon or orange juice

Preparation

1. Cream butter and sugar with an electric mixer starting at a low speed, building up to a high speed to ensure mixture will have a light fluffy consistency. Incorporate eggs one at a time. Mix in vanilla, salt, and zest.
2. Sift dry ingredients. Combine sour cream and juice.
3. With mixer on low speed, add flour mixture in three batches, alternating with two additions of sour cream/juice mixture.
4. Line cupcake pan with liners. Fill cups half full.
5. Bake at 160–180°C for approximately 25–40 minutes.
6. Make frosting while cupcakes are baking.
7. Test with cake tester or toothpick for doneness.
8. Let cool on wire rack and de-pan.
9. Fill piping bag (fitted with an appropriate tip) with frosting half full.
10. Once cooled, pipe onto cupcakes.
11. Garnish if desired.

Basic Chocolate Cupcake Recipe

Yield

928 g (16 Cupcakes)

Ingredients

125 g pastry flour (can substitute $\frac{1}{2}$ all-purpose and $\frac{1}{2}$ cake flour)
75 g cocoa powder
1 tsp salt (If using salted butter, omit salt)
1½ tsp baking soda
1½ tsp baking powder
325 g sugar
3 large eggs
½ tsp vanilla
175 mL buttermilk
85 g butter (melted)
175 mL coffee (room temperature)

Preparation

1. Combine and sift all dry ingredients and set aside.
2. Beat eggs by hand for one minute with whisk.
3. Make a well in dry ingredients and stir until smooth.
4. Mix in the melted butter and coffee.
5. Line cupcake pan with liners. Fill cups half full.
6. Bake at 160–180°C for approximately 25–40 minutes.
7. Make frosting while cupcakes are baking.
8. Test with cake tester or toothpick for doneness.
9. Let cool on wire rack and de-pan.
10. Fill piping bag (fitted with an appropriate tip) with frosting half full.
11. Once the cupcakes have cooled, pipe the frosting onto cupcakes.
12. Garnish if desired.

Basic White Frosting

Ingredients

113 g unsalted butter
250 g icing sugar
1½ tsp vanilla
30 g milk
food colouring (optional)

Method

1. Soften butter and gradually add sugar until fluffy.
2. Add milk and vanilla. Adjust milk until correct consistency is achieved.
3. Add food colouring if desired.
4. Pipe on cupcakes.

Basic Chocolate Frosting

Ingredients

85 g unsalted butter
330 g icing sugar
35 g cocoa powder (increase cocoa powder for more intense flavour)
120 g milk
1 tsp vanilla

Method

1. Soften butter and gradually add sugar and cocoa powder until fluffy.
2. Add milk and vanilla. Adjust milk until correct consistency is achieved.
3. Pipe on cupcakes.

Make Biscuits By Hand

Description

In this activity, students will make and bake a batch of scones from scratch. The students will be able to identify the different stages of the process. They will read a basic scone recipe, formulate the recipe to yield 1 dozen units, gather ingredients and tools, measure ingredients accurately, mix, make-up, and bake the scones.

Note: The terms “scone” and “biscuit” (as used in North America) are interchangeable. Quick breads is a category of baked goods that use chemical leaveners to raise the product, as opposed to yeast.

For this item, the “rubbing-in” or “biscuit” method of hand mixing will be used, exposing the student to one of the basic fat incorporation methods.

Lesson Objectives

Students will be able to:

- understand ingredients and their functions in quick breads
- calculate the amount of ingredients needed to produce the desired amount of product
- prepare and bake scones using safe food handling practices with appropriate equipment, according to recipe or formula
- apply knowledge of mixing methods to produce quick breads
- evaluate the finished product, and
- explore the history and traditions around scones.

Safety Considerations

Basic food and kitchen safety

Assumptions

Students will have an understanding of ingredient measurement, food handling safety, and appropriate clothing and personal attire in kitchens.

Terminology

Bench/counter: A workspace of appropriate height and material for processing recipes.

Baking sheet: A tray/pan of specific size with shallow sides used for baked goods that do not need shape support. (Also known as sheet pan.)



Chemical leavener: A leavening agent (sodium bicarbonate also known as “baking soda”) used alone or with a combination of acids (baking powder) incorporated into many baked goods in order to aerate them by the formation of carbon dioxide in the presence of heat and water.

Circular cookie cutter: A round tool of specific size, sometimes plain and sometimes crinkled on the circumference, used for cutting scones into a round shape.

Egg wash: Beaten egg used for brushing onto a baked good to deepen the finished colour and add sheen.

Formula: A balanced recipe containing the list and weights of ingredients, procedure, and yield. (**Note:** “formula” and “recipe” are often used interchangeably in the industry.)

Parchment paper: A sheet of paper with non-stick qualities and heat stability used to line a baking sheet in preparation for baking.

Pastry brush: A fine bristled brush used to apply egg-washes or other liquid garnishes to baked goods.

Quick bread: Any baked good that uses chemical leaveners to aerate the product. (Cookies, muffins, scones, some coffee cakes.)

Rolling pin: A cylindrical tool, sometimes with handles on bearings and sometimes in one piece used for flattening a piece of dough.

Rubbing-in: The controlled process by which solid fat is incorporated by hand into the flour of a bakery product to ensure the desired crumb is achieved.

Scone/ biscuit: A small unsweetened or lightly sweetened cake made from flour, fat, and milk and sometimes having added fruit. Originating in Scotland, it is now made with chemical leaveners.

Yield: The amount of product/units produced from a specific recipe or formula.

Estimated Time

45–60 minutes

Recommended Number of Students

This activity may be done individually or in pairs.

Facilities

Home Economics lab or cafeteria kitchen

Resources

The History Of Scones

<http://www.thenibble.com/reviews/main/breadstuffs/scone-history.asp#history>

How To Make Scones

<https://www.youtube.com/watch?v=6tlQn7iePV4>

Materials Needed

- As per recipe; enough ingredients for all the students.
- Digital scales (or volume measuring equipment).
- Sheet pans for all the students.
- For variety, make plain or with different inclusions.

Demonstrate Skills and Knowledge

Procedure

1. Watch video *How to Make Scones*.
2. Review safety procedures.
3. Divide students into pairs if necessary.
4. Explain and explore the measuring of ingredients.

Volume measurements of baking and cooking ingredients are extremely variable; that is why weighing is the preferential method of measurement. As an example, have different students weigh cups of the same as well as ingredients of different densities to support this knowledge.

Example 1: Weigh 1 cup of white flour sifted and compare to one cup of flour unsifted.

Example 2: Weigh 1 cup of brown sugar unpacked, and one cup packed down.

Example 3: Weigh 1 cup of water and compare to 1 cup of honey or molasses.

5. Follow the procedure as per the recipe.
6. Have the students check the fat disbursement in the flour.
7. Explain why the dough has to rest.
8. During baking, explain the chemical leavening process.
9. Wait for scones to cool before eating (in order that all the starches set; carry over baking).
10. Score scones as per evaluation sheet.
11. Clean up and review.

Extension

1. Have the students write a short history of the scone.
2. Scone or Biscuit? Why the two words?
3. What is the name of the music playing in the video? What “dance craze” was in fashion at the time? Why is this significant to the scone story?
4. What are the differences in the formula in the video and the Empress formula?
5. What makes the Empress Scone recipe significant to local history?

Evaluation Guidelines

Consider co-creating the assessment criteria with your students at the beginning of the activity/project. You may want to include the following:

	Emerging	Developing	Proficient	Extending
Performs professionally in kitchen following health and safety guidelines.				
Applies mathematical principles to appropriately scale recipe to desired yield.				
Measures ingredients accurately.				
Mixes by hand, rolls out, cuts, and pans scone emphasizing uniformity and correct texture.				
Demonstrates ability to set oven temperature and assess when product is baked.				
Cools and stores product properly.				
Demonstrates ability to evaluate scones for quality, taste and texture in the form of self-reflection notes.				

Empress Hotel Famous High Tea Scone

Yield

1800 g (24 × 75 g scones)

Ingredients

225 g butter
210 g sugar
540 g all purpose flour
28 g baking powder
5 g salt (omit if using salted butter)
120 g raisins
200 g egg
476 g whipping cream
1 beaten egg (for egg wash)

Preparation

1. In a large bowl, rub the butter, sugar, baking powder, and salt until a sandy texture is formed but there are still pea-sized lumps of butter in the mix.
2. Fold in the raisins.
3. Blend the cream and eggs.
4. Make a well in the dry mix and pour the liquid in, stirring until a smooth dough is formed.
Don't over-mix.
5. Let rest for 10 minutes.
6. Roll out to ½" (13 mm) thickness on a floured bench.
7. Cut with round cutter to desired size. For variety roll out round but cut wedges before baking.
8. Place on cookie sheet.
9. Bake at 177°C (350°F) for approximately 15 minutes. **Don't over-bake.**

Make Holiday or Themed Cookies

Description

In this activity, students will prepare, make, and bake a sugar cookie recipe. They will finish the cookies by decorating them with a holiday or other theme.

Lesson Objectives

Students will be able to:

- follow a basic sugar cookie recipe and produce consistently sized and shaped products
- choose a theme or design for their cookies
- prepare icing in various consistencies and colours to decorate their cookies, and
- use a piping bag and necessary tools to decorate their cookies.

Safety Considerations

Basic food and kitchen safety

Assumptions

Students:

- understand ingredient measurement, food handling safety, and appropriate clothing and personal attire in kitchens, and
- know basic math functions (addition, subtraction, multiplication, division) and understand the concept and use of decimals.

Terminology

Consistency: In terms of icing, it's the amount of flow the icing will have once it is piped on a cookie, or the general viscosity of the icing.

Coupler: An attachment that can be added to a piping bag to allow multiple changes of piping tips.

Creaming: The incorporation of air into a batter/dough through the mixing of solid fat and sugar into a smooth, pliable, and aerated mass.

Piping bag/pastry bag: A cone-shaped bag often of cloth or plastic, through which various ingredients are forced through a shaped tube.

Piping tip: A small plastic or metal tip which sits in a pastry bag and delivers the contents of the bag in a decorative, consistent manner.

Parchment paper: An oven-proof paper used to prevent products sticking to a pan.

Scaling: Altering a recipe to yield a different amount of product.



Sifting: Removing lumps from dry ingredients by passing through a fine mesh or screen sieve.

Yield: The number of items a recipe/formula will make.

Estimated Time

30 minutes: Introduction and video

30 minutes: Dough

60–120 minutes: Chilling (may be done overnight)

60 minutes: Cutting and baking

60–120 minutes: Decorating

Recommended Number of Students

This activity should be done individually.

Facilities

- Home Economics lab or cafeteria kitchen
- Access to reference materials (Internet-accessible computer and/or textbooks)

Resources

Seven Steps to Flawless Rolled Cookies with Julia M. Usher

<https://www.youtube.com/watch?v=wo6GsxLsbro>

How to Make Royal Icing (Plus, Coloring and Consistency Adjustments)

https://www.youtube.com/watch?v=GO0_aNbL6Do

How to Topcoat, Outline, and Flood Cookies

https://www.youtube.com/watch?v=P_C0Fv_8sPQ

Demonstrating Skills And Knowledge

Procedure

1. Introduce the topic. This activity can be completed over 3–4 days depending on class time:
 - Day 1:** Introduction, prepare dough, plan designs and shapes.
 - Day 2:** Roll, bake, cool, and store cookies.
 - Day 3:** Make icing in two different consistencies, one for piping and one for flooding in a minimum of two colours, decorate cookies.
 - Day 4:** Complete decoration. Allow time for drying, evaluating, presenting, and bagging.
2. Review the procedure for making basic sugar cookies.
3. Hand out recipes for cookie dough.
4. Have students make a recipe of dough, then chill and store until needed.
5. If students have extra time or for homework they should sketch two to three designs or patterns for their cookies. These can be based on a holiday, theme for the season, or an event.
6. Show video on how to roll cookies.
7. Have students roll to correct thickness, cut, and bake the cookies, then cool and store until needed.
8. Cookies should be wrapped in plastic and stored at room temperature.
9. Show videos on icing consistencies and how to decorate.
10. Have students prepare icing based on their plans.
11. Fill the piping bags.
12. Students select their best 12 cookies for decorating.
13. Students pipe and finish their cookies allowing time to dry thoroughly before moving or packaging them.
14. Remind students to take photos of their finished cookies and post a reflection in their journal or portfolio.
15. Have students walk around and see the work of their fellow students.

Evaluation Guidelines

Assessment can be based on how well the cookies followed a theme or plan but also consider uniformity. Are all the cookies uniform in size and decoration? Let students know that this is an important factor in commercial baking: being able to replicate products consistently.

Students can use the chart on the following page for self-evaluation of cookies.

Consider co-creating the assessment criteria with your students at the beginning of the activity/project. You may want to include the following:

	Emerging	Developing	Proficient	Extending
Performs professionally in the kitchen following health and safety guidelines.				
Applies mathematical principles to appropriately scale recipe to desired yield.				
Measures ingredients accurately.				
Mixes, rolls, cuts, and pans cookies emphasizing uniformity.				
Sets oven temperature and correctly assesses when product is baked.				
Cools and stores product properly.				
Evaluates cookies for quality, taste, and texture in the form of self-reflection notes.				

Cookie Evaluation Chart

	Emerging	Developing	Proficient	Extending
<p>Dough Quality Dough is correct texture: even and smooth, easy to roll.</p>				
<p>Rolling and Cutting Cookies are flat and smooth on top, even thickness, same size, shape is not distorted, sides are straight.</p>				
<p>Baking Cookies are evenly baked, not brown, not under-baked, shape was maintained after baking (the cookie did not spread too much or lose its shape).</p>				
<p>Icing Icing is correct consistency for its use, colours are mixed properly and used in a creative manner, colour is even or consistent (mixed a large enough batch) and at least two colours are used.</p>				
<p>Decorations Icing is applied to the right location on the cookie. Decorations are consistent from one cookie to the next, or stay within a theme. Decoration is precise, not messy. A clear theme is evident. Cookies are all identical if the same pattern or coordinating if varied. Decoration is realistic or artistic.</p>				

Sugar Cookies

Ingredients

60 ml margarine
60 ml shortening
125 ml sugar
1½ eggs
4 ml vanilla
440 ml flour
2.5 ml baking soda
5 ml cream of tartar

Preparation

1. Preheat oven to 180°C (350°F).
2. Cream margarine and shortening together.
3. Gradually cream sugar into butter and shortening until light and fluffy.
4. Add eggs and beat well, add vanilla.
5. In another bowl, sift together flour, baking soda, and cream of tartar or baking powder.
6. Stir in dry ingredients or use a stand mixer (do not use hand mixers) using only enough of the dry ingredients to make a soft creamy dough that can be flattened in hands and maintains its shape.
7. Wrap dough in plastic wrap, label it and put it in the fridge for at least 2 hours.
8. Roll chilled dough out on a lightly floured surface with a floured rolling pin to not less than 0.5 cm thick.
9. Cut into desired shapes and place on a greased or parchment covered cookie sheet, allow space (2–3 cm) between cookies to expand. Re-roll unused dough and continue to cut into desired shapes.
10. Bake for about 8 minutes until set and dry to the touch.
11. Remove from cookie sheet and cool in a single layer on cooling racks.
12. Decorate as desired.

Note: if cookies stick to the cookie cutter, dip the cutter in flour before cutting the dough.

Royal Icing

Ingredients

1 pound (3¾ cups) powdered sugar (sifted if lumpy)

¼ tsp cream of tartar

2½ large pasteurized egg whites (5½ T, or substitute 4 t packaged dried egg whites and ¼ cup water)

1 teaspoon almond extract, vanilla, or lemon juice

Preparation

1. Mix all the ingredients together using an electric hand or stand mixer until the icing is smooth. Mix long enough to get a whiter finished icing, 1–2 minutes starting slowly and finishing on high speed. Scrape down mixer bowl as you go.
2. This is a very thick icing that doesn't drop easily from a spoon.
3. Divide icing into several bowls about 1 cup each (250 ml) and add 1–3 drops of gel food colouring, (paste colouring can also be used), stir to combine. Liquid colours are not recommended as they change the consistency.

Icing Consistency

Top coating: For use without a dam.

- 1½–2 tsp water for each cup of royal icing.
- A trail falling off a spoon into a bowl will disappear in about 15 seconds.
- Apply with a craft paintbrush with bristles removed.
- Don't go too close to the edge because you don't want it to flow off.

Dam/border icing: For piping around the edge of a cookie to hold in flooded icing.

- Add ½–¾ tsp of water per cup of royal icing.
- A trail falling off a spoon into a bowl will disappear in about 10 seconds.
- Try to pipe the border slowly so it doesn't break.

Flooding icing: For use inside a dam to create a smooth top, to prevent dips.

- Add 2–3 tsp of water per cup of royal icing.
- A trail falling off a spoon into a bowl will disappear almost instantly.
- Apply with craft brush or small spoon depending on size.
- Draw out with a toothpick or turkey trussing needle.
- Make sure all air bubbles are popped.
- Dry quickly with a craft or hair dryer or put in a warm oven (200°F) for a couple of minutes.
- Don't over dry or the icing will crack.

Make Modelling Chocolate Roses

Description

In this activity, students will make a simple modelling chocolate that can be made into small roses or other sculptures. It also includes making chocolate decorations from melted chocolate that can be applied to any dessert. This activity ties in nicely with the Make Cupcakes Activity Plan.

There is an optional recipe for chocolate mousse that makes a nice canvas for both the chocolate roses and decorations.

Lesson Objectives

Students will be able to:

- make modelling chocolate
- shape the chocolate into various forms
- understand the basic principles of working with chocolate
- experience working with chocolate in different forms and recipes, and
- practise the art of decorating.

Safety Considerations

Basic food and kitchen safety

Assumptions

The student understands ingredient measurement, food handling safety, and appropriate clothing and personal attire in kitchens.

Terminology

Double boiler: A setup of two specially designed pots that fit together, one that holds roughly 2 inches of water and the second pot that sits on top. This can also be done with a small to medium sized pot on the bottom and a larger stainless steel bowl that sits on top.

Modelling chocolate: A pliable chocolate mixture that can be shaped into a variety of forms.

Piping bag/pastry bag: A cone-shaped bag often of cloth or plastic, through which various ingredients are forced through a shaped tube.

Piping tip: A small plastic or metal tip which sits in a pastry bag and delivers the contents of the bag in a decorative, consistent manner.



Estimated Time

Day 1

70 minutes: Prepare the modelling chocolate and mousse

Day 2

70 minutes: Form the roses and pipe the chocolate decorations

Recommended Number of Students

This activity may be done individually or in pairs.

Facilities

- Home Economics lab or cafeteria kitchen
- Internet-accessible computer, projector, and screen

Resources

How to Make Modelling Chocolate

<https://www.youtube.com/watch?v=34aSpbvdD-k>

How to Make Chocolate Roses

<https://www.youtube.com/watch?v=D48SlvhYH8o>

Demonstrating Skills And Knowledge

Procedure

Day 1

1. Introduce the topic and show examples on a projector. Encourage the students to invite a guest to the next class.
2. Hand out recipes and go over any new concepts and check for understanding.
3. Have students prepare the modelling chocolate and (optionally) the mousse.
4. Wrap and store both products with plastic wrap. Place the mousse in the fridge and keep the chocolate at room temperature.
5. Have students draw designs (using a pencil) on parchment for the piped chocolate decorations.

Day 2

1. Have students watch the video on how to make chocolate roses.
2. Have students melt the chocolate and then pipe the melted chocolate onto the prepared parchment. Chill until set.
3. While the piped chocolate is setting have students make 2–3 roses each. Set aside until needed.
4. Assemble the final product by placing the roses and decorations on top of the mousse or other dessert. They may also want to add some piped whipped cream.
5. Invite a friend, staff member, or family member to share their dessert with them. Have the guest give informal feedback (this can be done verbally).
6. Remind students to take photos and upload them to their portfolio.

Evaluation Guidelines

Consider co-creating the assessment criteria with your students at the beginning of the activity/project. You may want to include the following:

	Emerging	Developing	Proficient	Extending
Maintains food handling safety, personal hygiene, and workspace cleanliness throughout the process.				
Follows instructions to properly make, store, and use modelling chocolate.				
Shapes the chocolate into various forms.				
Applies the decorations in an aesthetically pleasing way.				
Understands the basic principles of working with chocolate.				
Self-reflects on their learning, describes their experience, and contributes to their portfolio.				

Chocolate Decorations

Ingredients

60–125 mL of semi-sweet chocolate, chopped, or good quality chocolate chips

Preparation

Prepare Patterns for Piping

Pre-draw the patterns or shapes with a pencil onto the parchment and then flip the sheet over.

Create the Decorations

1. Put the chocolate in a small microwave dish.
2. Microwave in short bursts (15–20 seconds) and stir thoroughly after each additional application of heat. Chocolate burns very easily, especially white chocolate.
3. When the chocolate is smooth and free of lumps, quickly transfer to a small parchment cone or piping bag with a #2 or #3 writing tip. (You can also use a plastic zipper bag with a small hole cut in the corner.)
4. Close the piping bag and pipe the desired patterns or shapes onto your prepared piece of parchment set on the back side of a baking sheet using the following suggestions:
 - a. Avoid large open areas as the chocolate is very fragile. Patterns can be open but then they must be slightly thicker lines.
 - b. Choose simple patterns: swirly lines, logos, triangles, wedges with filigree work inside, or written words such as Hope, Joy, or Love.
 - c. Experiment and see how it goes.
4. Place the sheet in a cooler or let sit until set and firm: 15 minutes in a fridge to one hour at room temperature.
5. Carefully peel the decorations off the paper trying not to touch the front of the design.
6. Place where desired to decorate any dessert.
7. The decorations can be stored in a cool place between pieces of paper towel or in a single layer in an airtight container for a few days.

Chocolate Roses

Yield

Approximately 6 × 3 cm roses

Ingredients

4 oz (125 g) semisweet chocolate, chopped or good quality chocolate chips

3 T (45 mL) corn syrup

1/8 tsp (0.5 mL) water

Preparation

1. In top of double boiler over hot (not boiling) water, melt chocolate. Stir in corn syrup and water.
2. Pour onto plastic wrap-lined baking sheet. Cover with plastic wrap.
3. Let stand for at least 6 hours or until no longer sticky.
4. Remove plastic wrap and place chocolate dough between sheets of waxed or parchment paper. Roll out to 1/16-inch (1mm) thickness.
5. Using the open end of a small piping tip or similar small round cutter, cut out circles for petals. This may seem small but as they are pressed and shaped, they get larger. Alternately you can just pinch of a piece of the chocolate and form as you go.
6. Form trimmings into 1 cm balls and shape into cones for centers.
7. Using a rolling pin, press the outer edge of one half of each circle as thinly as possible. Wrap the thick sides of several circles around cone, overlapping to form a rose.
8. Carefully curl back petals. Transfer to waxed paper-lined baking sheet. Cover and refrigerate for up to one week.
9. If you are having trouble with the chocolate melting, try working in a cooler environment or dipping your hands into cold water to lower your body temperature. Be sure to dry your hands before working with the chocolate.



Chocolate Leaves

Ingredients

2 oz (60 g) melted chocolate (dark, milk, or white)

Preparation

1. Using pastry or paint brush, paint undersides of clean dry rose leaves or other stiff non-poisonous, pesticide-free leaves, with melted chocolate. Take care not to drip chocolate over edges or onto the front of leaves.
2. Place leaves, chocolate side up, on waxed paper-lined baking sheet and refrigerate until firm. Carefully peel rose leaves from chocolate. Use as desired.



Chocolate Mousse

Yield

4 servings

Ingredients

140 g semisweet chocolate, coarsely chopped (can be good quality chocolate chips)

80 mL water, divided

17 mL butter

2 egg yolks

17 mL sugar

180 mL whipping cream, whipped



Preparation

1. In a microwave or double boiler, heat chocolate, 40 ml water, and butter until the chocolate and butter are melted.
2. Cool for 10 minutes.
3. In a small heavy saucepan, whisk egg yolks, sugar, and remaining water.
4. Cook and stir over low heat until egg mixture reaches 160°F (about 1–2 minutes).
5. Remove from the heat, whisk in chocolate mixture.
6. Set saucepan in ice and stir until cooled, about 5–10 minutes.
7. Fold in whipped cream.
8. Spoon into dessert dishes.
9. Refrigerate for 4 hours or overnight.
10. Decorate with additional whipped cream and chocolate shapes or roses.

Make White Pan Bread

Description

In this activity, students will make two loaves of white pan bread from scratch. The students will be able to identify the different stages of the process. They will read a basic white pan bread recipe, scale the recipe to yield two loaves, gather ingredients and tools, measure ingredients accurately, mix, make-up, proof, and bake the loaves.

For this bread, a straight dough mixing method will be used, exposing the student to the basic methodology behind yeasted doughs.

Lesson Objectives

Students will be able to:

- understand ingredients and their function in bread-making
- calculate the number of ingredients needed to produce the desired amount of product
- prepare bread using safe food handling practices with appropriate equipment, according to recipe or formula
- apply knowledge of the straight dough mixing method to produce bread, and
- evaluate the finished product.

Safety Considerations

Basic food and kitchen safety

Assumptions

Students have an understanding of ingredient measurement, food handling safety, and appropriate clothing and personal attire in kitchens.

Terminology

Bench/counter: A work space of appropriate height and material for processing recipes.

Bread flour: Flour that is formulated for typical North American breads, with protein content of 11–13.5%.

Caramelization: The process by which the sugars turn the crust of the loaf to a golden-brown color during the baking process.

Bread pan: A container (usually made of metal) used to proof and bake a loaf of bread.

Crumb: The quality and texture of the interior of the loaf.

Fermentation: The process where yeast changes carbohydrates into alcohol and carbon dioxide.



Formula: A balanced recipe containing the list and weights of ingredients, procedure, and yield.

Gluten: Proteins found in wheat flour that develop a matrix within which carbon dioxide gasses are trapped.

Hydration: The amount of water in a bread dough.

Mixing machine: A machine for processing ingredients into finished doughs or batters.

Oven-spring: The increase in volume of the loaf during the baking process.

Plastic scraper: A flexible bowl scraper that has a curved edge and a straight edge. Has multiple uses, and in this context, is used for scraping or cleaning up batter or dough in a bowl or from the table.

Proof: The stage in which yeast ferments in the presence of flour and water, releasing carbon dioxide gas and causing the loaves to rise.

Scaling: The act of measuring ingredients in weight or volume; usually the first step in the baking of products.

Shaping: The act of taking a piece of dough and forming it into a uniform loaf.

Starch: The part of the wheat endosperm that gelatinizes and forms the crumb of the loaf.

Straight dough mixing method: A mixing method used for bread-making, where all ingredients are added and mixed at once.

White pan bread: Bread that is baked in a loaf pan and typically made with white flour or all-purpose flour, water, yeast, and salt.

Estimated Time

45 minutes: Activity.

4 hours: Inactive time (dough can be refrigerated overnight and baked the following day).

Recommended Number of Students

This activity may be done individually or in pairs.

Facilities

Home Economics lab or cafeteria kitchen

Resources

The Baking Process

<https://www.youtube.com/watch?v=CQ32r4ZYJ5A>

Making Bread By Hand

<https://www.youtube.com/watch?v=7xIjBJxP-4s>

Moulding Pan Bread

<https://www.youtube.com/watch?v=wJrOqWqir9I>

The Windowpane Or Membrane Test

<https://www.youtube.com/watch?v=iyb86ECOBTM>

Science: What Is Gluten? Here's How To See And Feel Gluten

<https://www.youtube.com/watch?v=zDEcvSc2UKA&t=2s>

Demonstrating Skills And Knowledge

Procedure

1. Ahead of class, gather the necessary materials:
 - As per recipe; enough for all the students
 - Digital scales
 - Recipe calls for instant yeast (rapid or bread machine yeast is the same) If using active dried, double the quantity and hydrate before using.
 - If bread flour is not available, make sure that the protein content on nutritional panel shows 4 g per 30 g serving or equivalent.
 - Bread pans for all the students. If not enough are available the bread can be baked on a sheet pan with parchment paper.
 - For variety brush with egg-wash and sprinkle seeds on top.
 - Oil for greasing pans
2. Review safety procedures.
3. Review video on bread baking and procedural steps.
4. Divide students into pairs if necessary.
5. If a scale is not available, have the students calculate the conversion from grams to volume measurement (cups and spoons).
6. Follow the procedure as per the recipe.
7. Have the students check the gluten development by using the “windowpane” test.
8. Watch procedural videos during the first proof stage.
9. During baking, explain or have students research the gelatinization of starches, coagulation of proteins, caramelization of sugars, and why the dough has to rest.
10. Wait for bread to cool before eating (in order that all the starches set; carry over baking).

Evaluation Guidelines

Consider co-creating the assessment criteria with your students at the beginning of the activity/project. You may want to include the following:

	Emerging	Developing	Proficient	Extending
Maintains personal hygiene and grooming.				
Maintains workspace, tool, and equipment cleanliness.				
Applies mathematical principles to appropriately scale recipe to desired yield.				
Measures ingredients accurately.				
Mixes, makes-up, and proofs bread dough for uniformity, smoothness, and desired volume.				
Demonstrates ability to evaluate for doneness during baking.				
Cools and stores bread properly.				
Demonstrates ability to evaluate baked bread for quality, taste, and texture in the form of self-reflection notes.				

Optional Student Self-assessment

Introduce the following chart to the students. Instructor can evaluate a finished loaf (instructor-baked or from a student volunteer) to demonstrate the various categories to the students.

External Qualities	Top Score	Test Score	Penalized for
Adequate volume	8		Too small, too large
Correct crust colour	6		Streaked, spotted, too dark, too light, not uniform
Symmetry of loaf	4		Uneven shape, flat top, shrunken
Evenness of bake	4		Pale sides dark top, dark bottom, light top
Characteristics of crust	4		Tough, thick, blistered, hard
External score	26		
Internal qualities			
Taste	15		Rancid, sour, greasy, flat, salty
Aroma/flavour	15		Chemical, yeasty, lacks depth
Texture	10		Lumpy, dry, wet, rough, sandy, crumbly
Crumb	10		Open coarse grain, uneven cell structure
Chewability	10		Gummy, doughy, tough, dry
Internal score	60		
Total score	86		

White Pan Bread

Ingredients

600 g bread flour
6 g instant (rapid) yeast
12 g salt
400 g water

Preparation

1. Mix the ingredients by hand or by machine:

By Hand

- a. Add yeast to water and evenly disperse.
- b. Add flour and salt and mix by hand until coarse dough is formed. Cover and allow dough to rest for a few minutes.
- c. Knead the dough for 20 seconds or until it resists. Form into a ball, cover, allow to rest for five minutes. Repeat this process 5–6 times.

By Machine

- a. Add all ingredients into mixing bowl and use hook attachment.
 - b. Mix for one minute on slow speed.
 - c. Adjust hydration if necessary.
 - d. Scrape down bowl taking care to scrape right down to the bottom.
 - e. Mix for another two minutes.
 - f. Increase speed and mix for another two minutes.
2. Cover dough and allow to rise until double in volume.
 3. Fold the dough once after 30 minutes if required.
 4. Shape and mold the dough to fit a greased loaf pan.
 5. Allow the loaves to rise until almost doubled in size.
 6. Bake on middle shelf at 220°C for 30–40 minutes. (200°C if using a convection oven.)
 7. Check internal temperature. (It should be 94–98°C.)
 8. De-pan immediately and cool on wire rack.
 9. Wait 10 minutes before cutting, eating, and evaluating.

Conversion Table for Common Baking Ingredients

Metric (grams) to Imperial (pounds and ounces) to Volume (cups and spoons)

Ingredient	Ounces per cup	Grams per cup (oz)	Grams per teaspoon (t)	Grams per tablespoon (T)
Baking powder or soda			4.6	13.8
Butter	8	227	4.8	14.2
Flour (all purpose)	5	140	2.6	7.8
Milk	8	245	5.1	15.3
Milk powder	3	125	1.5	4.25
Salt, fine			6	18
Shortening	8	227	4.3	12.8
Sugar brown	7	200	4.6	13.4
Sugar white, granulated	7	200	4.2	12.5
Vegetable oil	7	220	4.5	13.7
Water	8	237	5.3	14.8
Yeast instant rapid			2.8	8

Important note for students: Volume measurements of baking and cooking ingredients are extremely variable; that is why weighing is the preferential method of measurement.

Bake for Allergies

Description

In this activity, students will research, select, make, and evaluate a product made without wheat, dairy, and/or eggs.

Note: baking for allergies is a big topic that involves a lot of research and testing. Because allergies are so common, it is included here as an introduction and is not intended to provide all the information needed to bake safely for those with allergies.

Lesson Objectives

Students will be able to:

- research, select, make, and evaluate a product made without a common allergen
- learn the importance of substitution of ingredients, and
- document and evaluate the recipe through written reflection and photographs.

Safety Considerations

Basic food and kitchen safety

Assumptions

The student understands ingredient measurement, food handling safety, and appropriate clothing and personal attire in kitchens.

Terminology

Allergen: A substance which causes an allergic reaction. Allergens cause some people's bodies to perceive an otherwise harmless substance as a threat. The immune system triggers an allergic reaction which can lead to discomfort, illness, and in some cases, death.

Estimated Time

120 minutes: Research, select, and plan.

120 minutes: Organize ingredients and materials and to make and evaluate the product.

Recommended Number of Students

This activity may be done individually or in pairs.



Facilities

- Home Economics lab or cafeteria kitchen
- Internet access and/or access to recipe books

Resources

Baking and Food Allergies: How to Substitute Ingredients

Note: the information about sugar is based on the opinion of the author.

<http://www.jennihulburt.com/2013/11/baking-and-food-allergies-how-to-substitute-ingredients/>

Have kids with food allergies? One mom shares tips, safe cookie recipes

<https://www.today.com/food/have-kids-food-allergies-one-mom-shares-tips-safe-cookie-1D80366479>

How to Cook and Bake Free of Allergens

<http://www.kidswithfoodallergies.org/page/recipe-substitutions.aspx>

Baking For Someone With Food Allergies

<https://www.everydayhealth.com/allergies/baking-for-someone-with-food-allergies.aspx>

Demonstrating Skills And Knowledge

Procedure

1. Brainstorm common allergies in baking. Ask students if they or their families have experience cooking or baking for someone with allergies.
2. Review food alternatives for allergies.
3. Student will determine which allergen s/he will not include in a baked project. e.g., gluten-free, dairy-free, egg-free, etc.
4. Using the internet and/or allergy free cookbooks, students will research and select a baked goods recipe that does not include the allergen(s) of choice. Note: when searching for health information on the internet, remind the students to be critical researchers. Verify the source of the information to ensure it is medically sound.
5. Student will make a plan about how to make the recipe: organize ingredients, gather equipment, determine the time, and decide with whom s/he will share the product.
6. Bake the product.
7. Photograph the product and post to the portfolio with a reflection of what was successful and what was challenging about allergen-free baking.

Evaluation Guidelines

Consider co-creating the assessment criteria with your students at the beginning of the activity/project. You may want to include the following:

	Emerging	Developing	Proficient	Extending
Selects a recipe without one or more allergens, sources the ingredients, and bakes the product.				
Evaluates the product and shares a photo and link to the recipe on his/her portfolio.				
Reflects on the benefits and challenges of baking for allergies and posts the reflection to his/her portfolio.				

Make Flatbread with Toppings

Description

In this activity, students will make a yeast dough to create a healthier version of a pizza called a flatbread.

Flatbreads are not round like a pizza but can be different shapes and sizes (usually oblong) and contain a variety of vegetable-based options for toppings. Artisan flat breads differ from pizza in that they are thinner and showcase the ingredients rather than the dough. Many artisan flatbreads have fewer toppings relative to the size of the crust, and small amounts of cheese are added either before or after baking. They are often finished with an olive oil and/or vinegar drizzle.

Lesson Objectives

Students will:

- learn to work with yeast dough
- learn new and different flavour combinations, and
- work with a variety of ingredients.

Safety Considerations

Basic food and kitchen safety

Assumptions

The student understands ingredient measurement, food handling safety, and appropriate clothing and personal attire in kitchens.

Terminology

Yeast: A single cell biological organism that produces carbon dioxide when under the right conditions.

Yeast dough: A soft dough made from white, whole wheat, or bread flour that uses yeast as its leavener.



Estimated Time

Day 1

5 minutes: Introduction

20 minutes: Prepare dough

Day 2

45–60 minutes: Shape, top, proof, and bake

15 minutes: Sharing

Recommended Number of Students

This activity should be done individually.

Facilities

- Home Economics lab or cafeteria kitchen
- Internet-accessible computer, projector, and screen

Demonstrating Skills And Knowledge

Procedure

Day 1

1. Show images on an overhead projector of various flatbreads from an online search, focusing on the healthier vegetable based ones. Note that flatbreads can also contain meat, or fruit for a more dessert-like product.
2. Introduce yeast breads, how yeast behaves and what it needs to survive. Stress the importance of not killing your yeast with water that's too hot or adding salt at the wrong time.
3. Hand out recipes.
4. Have students make a batch of dough, and store it in the fridge in a greased bowl overnight. The recipe says it is made in groups of two but they can either use it as is for an individual or it can be scaled/halved for a single flatbread. If they have time they can prep some of their toppings.

Day 2

1. Remove dough from the fridge.
2. Shape on a parchment lined baking pan, brush with olive oil and set aside to rise at room temperature. The dough should be quite thin: less than 1 cm thick.
3. Prepare the toppings. Have students think about flavours and colours as well as texture and the temperature. Also consider when the topping is added: before or after baking.
4. Apply toppings when dough has doubled in height.
5. Clean up workspace as the flatbread bakes.
6. Bake until done: the edges are golden brown and sound hollow when tapped.
7. Let cool slightly, add raw toppings, slice and enjoy. Have students cut their flatbread into the number of slices for the people present and place them on a plate or baking tray. Have take-away bags or plates available.
8. Have students taste each other's creations and give at least one positive feedback, even if they don't care for the flavour—perhaps the dough was a nice consistency or cooked properly, or it was aesthetically pleasing.
9. Remind students to take photos during and after their flatbread is complete.

Extension Activity

Research flatbreads from around the world. Each student or pair of students chooses a country to report on. Students make a slide presentation or visual representation of the various types of flatbreads that are available in their chosen country. The collection of images should be shared with the class, highlighting the similarities and differences to the ones made in their lab. They can focus on ingredients, cooking methods, and historical roots of the flatbreads. Presentation time: 2–5 minutes.

Evaluation Guidelines

Consider co-creating the assessment criteria with your students at the beginning of the activity/project. You may want to include the following:

	Emerging	Developing	Proficient	Extending
Preparations Mise en place				
Dough Texture Soft, and smooth; adequate kneading.				
Dough Shape Properly proofed; even thickness when shaped.				
Toppings Evenly distributed (either before or after baking); aesthetically pleasing.				
Baking Cooked adequately – not over- or under-baked				
Flavour Ingredients/toppings work well together; dough has a pleasant flavour.				

Artisan Flatbread

Yield

2 flatbreads

Ingredients

2¼–2¾ cup flour

1 tsp sugar

1 tsp salt

2¼ tsp yeast

1 cup warm water (not over 115°F)

2 T oil

1 tsp of dried seasonings or 1T of chopped fresh herbs (optional). Examples: rosemary, parsley, oregano, thyme, garlic, green onion

Cheese (optional)



Examples of Topping Combinations

- pears, nuts, goat cheese, sliced radish, spring onions, flavoured oils or vinegars
- arugula, spinach, cranberries, and goat cheese
- wild mushrooms, herbs, and mild soft cheese
- strawberries, balsamic, and arugula with a soft cheese
- roasted squash or beets with soft cheese and nuts or micro green

Preparation

1. Pre-heat oven to 450°F.
2. Combine 1½ cup flour, sugar, salt, yeast and mix well.
3. Mix water and oil and blend. Add into dry ingredients. Beat for two minutes.
4. Stir additional ½–¾ cup flour until it pulls away from sides of bowl and forms a ball.
5. Knead another ¼–½ cup flour until dough is smooth (about five minutes).
6. Cover and let rise in a large, lightly-greased bowl until doubled (about 20 minutes). Alternately, it may be left covered in the bowl in a fridge overnight.
7. Divide dough (this recipe makes two small single-serving flatbreads).
8. Place dough on parchment on a cookie sheet.
9. Shape into desired shape, usually a long rectangle (this is a thin crust).
10. Add toppings and sprinkle or dot with a small amount of cheese if desired, let rise until double.
11. Bake at 450°F oven for approximately 20 minutes or until crust is brown at the edge and cheese is melted and/or lightly browned.

Make and Bake a Hand Stretched Neapolitan Pizza

Description

In this activity, students will make and bake Neapolitan-style pizza from scratch. The students will identify the different stages of the process. They will read a traditional pizza recipe; formulate the recipe to the correct yield; gather ingredients and tools; measure ingredients accurately; mix; make-up; and bake the product.

Students will also study the traditions and history behind the product (optional).

Lesson Objectives

Students will be able to:

- understand ingredients and their functions in the making and baking of pizza
- calculate the amount of ingredients needed to produce the desired amount of product
- prepare and bake pizza using safe food handling practices with appropriate equipment, according to recipe or formula
- apply knowledge of mixing methods to produce a yeast-leavened dough
- evaluate the finished product, and
- learn the history and traditions around the product.

Safety Considerations

Basic food and kitchen safety

Assumptions

Students understand ingredient measurement, food handling safety, and appropriate clothing and personal attire in kitchens.

Terminology

Baking sheet: A tray/pan of specific size with shallow sides used for baked goods that do not need shape support.

Bench/counter: A workspace of appropriate height and material for processing recipes.

Extra virgin olive oil: Oil from the olive fruit that is processed without chemicals or heavy machinery.

Formula: A balanced recipe containing the list and weights of ingredients, procedure, and yield.

Hearth: The floor of a traditional oven, also known as the “sole.” Baking can be done directly on the hearth.



Margherita/marinara: Two traditional styles of basic pizza.

Mother dough/sourdough starter/levain (fr): A mixture of flour and water that has active fermentation and is used to develop fermentation and leavening in a dough.

Neapolitan: A word describing anything that comes from (or is made in the style of) Naples, Italy.

Parchment paper: A sheet of paper with non-stick qualities and heat stability used to line a baking sheet in preparation for baking.

Peel: A flat tool with a handle used to slide a pizza (or other bakery product) onto the hearth of the oven.

Pizza: A flatbread topped with various toppings.

Pizza stone: A flat stone that is pre-heated in a conventional oven to simulate a “hearth oven.”

Pizza wheel: A circular knife used to cut a baked pizza.

Rolling pin: A cylindrical tool, sometimes with handles on bearings and sometimes in one piece used for flattening a piece of dough.

Yeasted dough: Any dough that is risen with the addition of natural or commercial yeast.

Yield: The amount of product produced from a specific recipe or formula.

Estimated Time

45–60 minutes:

Day 1: Preparation of dough to allow to rise overnight.

Day 2: Activity

Recommended Number of Students

This activity should be done in pairs.

Facilities

- Home Economics lab or cafeteria kitchen
- Internet-accessible computer, projector, and screen

Resources

Neapolitan Pizza Margherita – Wood Fired Pizza

<https://www.youtube.com/watch?v=FHvZgt3ExDI>

Materials

- As per recipe—enough ingredients for all students
- Digital scales (or volume measuring equipment)
- Sheet pans for all students
- Pizza stone (or use the back of a sheet pan)

Demonstrating Skills And Knowledge

Procedure

Day 1

1. Watch video on pizza making.
2. Divide students into pairs.
3. Follow the procedure as per the recipe. (If a sour dough or “mother dough” isn’t available, follow the recipe directions using straight yeast only.) Have the students scale the recipe to make two pizzas weighing 125g each.
4. Explain and explore the measuring of ingredients. If a scale is not available, have the students perform the calculations to convert from grams to volume measurement (cups and spoons).
5. Mix the dough by hand.
6. Explain why the dough has to rest.
7. During proofing, explain the organic leavening process.
8. Cut, round, and rest dough overnight in the correct weight, covered.

Day 2

1. Turn ovens to 230°C (450°F).
2. Place pizza stone or upturned cookie sheet in oven.
3. Stretch pizza to desired width and rest on parchment paper or an upturned well-floured cookie sheet.
4. Top with appropriate ingredients. Emphasize the principle of “less is more.”
5. Slide pizza using a peel or the underside of a cookie sheet onto the pizza stone or heated cookie sheet.
6. Bake for approximately 8–10 minutes.
7. Slice, taste in guided ways, and evaluate.

Topics for Research/Discussion (Optional)

- What is the history of pizza?
- What are the two main ingredients for a Margherita or a Marinara pizza?
- What is the connection between Italian pizza making and Canada?
- Who invented the “Hawaiian” (ham and pineapple) pizza?
- When did the pizza become popular in North America and why?
- Are there songs about pizza?
- Which song about pizza won the academy award for Best Original Song?
- What are the differences in the authentic Neapolitan recipe and what we expect at a North American pizza franchise?

Evaluation Guidelines

Consider co-creating the assessment criteria with your students at the beginning of the activity/project. You may want to include the following:

	Emerging	Developing	Proficient	Extending
Performs professionally in the kitchen following health and safety guidelines.				
Applies mathematical principles to appropriately scale recipe to desired yield.				
Measures ingredients accurately.				
Mixes, proofs, cuts, rounds, and covers dough.				
Stretches and pans pizza; tops with appropriate ingredients.				
Sets oven temperature and correctly assesses when product is baked.				
Cools and stores product properly.				
Evaluates pizza for quality, taste, and texture in the form of self-reflection notes.				

Pizza Evaluation Chart

Type of Pizza: _____

Made By: _____ Date: _____

Criteria	Excellent	Average	Needs Work
Overall appearance			
Quantity of ingredients			
Crust shape, thickness, and stretching			
Baked consistently			
Well-balanced taste			

Basic Pizza Dough

Yield

360 g (3 small or 2 large pizzas)

Ingredients

200 g all purpose flour

20 g mother dough*

144 g water

4 g salt

1.5 g yeast

toppings

*Mother dough or sour dough starter is traditionally used. If not available, increase flour and water by 10 g each.

Preparation

1. The original calls for Tipo 00 flour. This is available in specialty food shops. Alternatively use untreated all-purpose flour.
2. Watch the students as they hand stretch the pizza. Be careful not to make the centre too thin otherwise the pizza will tear and stick.
3. Make sure they do not overload the pizza with ingredients.
4. As you probably will be using a domestic oven or maybe a convection oven there are a few tricks to mimic the wood-fired hearth oven.
5. Heat the oven before baking and leave the pizza stone or an upturned cookie sheet on the middle shelf.
6. Make sure that there is enough flour to allow the pizza to slide off, or use parchment paper.
7. Wait five minutes before cutting and eating.

Decorate with Basic Garnishes

Description

In this activity, students will identify, make, and select a variety of basic garnishes for decorating baked goods. This includes the writing of a basic greeting on a cake.

This activity can be paired with the Make Cupcakes or Make Holiday or Themed Cookies Activity Plans.

Lesson Objectives

Students will be able to:

- understand the meaning of garnish as pertaining to baked goods and pastry
- decide what kind of garnish is appropriate
- make a simple paper cone for piping
- apply garnish as appropriate for specific products
- understand and practise basic baked good presentation, and
- prepare various garnishes such as toasted nuts and seeds; fruit zest, whipped cream; and chocolate.

Safety Considerations

Basic food and kitchen safety

Assumptions

The student understands ingredient measurement, food handling safety, and appropriate clothing and personal attire in kitchens.

Terminology

Garnish: An adornment or embellishment that decorates a food item.

Marzipan: A pliable mixture of almond paste and sugar that can be moulded into shapes used as a decoration.

Paper cone: A triangle of parchment paper cut and shaped to make a conical icing bag.

Piping: The action of squeezing a garnish through a cone to write a message on a cake or make a decorative border.

Rolled fondant: A pliable mixture of sugar and gums, often used to decorate cakes; also coloured and dried to make decorative shapes

Royal icing: A simple decorating icing that can be piped—typically used for decorating cakes and cookies.

Zest: The thin outside skin of a citrus fruit.



Estimated Time

Two classes of 45–60 minutes

Recommended Number of Students

This activity should be done individually.

Facilities

Home Economics lab or cafeteria kitchen

Resources

How to Make and Handle Parchment Cones (from 2:40–7:20)

<https://youtu.be/XRkwFJv0oIY>

Learn How to Fold a Parchment Bag for Piping

<https://www.youtube.com/watch?v=QdAauRWBQ58>

Piping with Royal Icing, Practicing with Templates

<http://www.hanielas.com/2013/09/practicing-piping-with-royal-icing.html>

Perfect Whipped Cream

<https://www.crazyforcrust.com/perfect-whipped-cream/>

Demonstrating Skills And Knowledge

Procedure

1. Explain why garnishes are desirable. Show before and after pictures (if available). Explain which garnishes are going to be practised.
2. Emphasize to the students that “less is more” and assessment will be partially based on neatness and cleanliness.
3. Demonstrate methods of making garnishes (optional).
4. Provide each student with a piping bag and tips or have them make piping bags from parchment paper (instructions below).
5. Ask the students to create between one and four garnishes (depending on supplies and time). A separate procedure is supplied below for each garnish.
6. Students can present their best garnish to the instructor and other students (optional).
7. When complete have the students reflect in their journals.

Piping Bags

1. Watch video(s) on making paper cones.
2. Demonstrate the making of a paper cone.
3. Supply pre-cut triangles of parchment paper to students and have them make two of their own.
4. Alternatively, supply either cloth (multi-use) or disposable (single-use) decorating bags, with coupler and tip, from a cake decorating supply outlet.

Royal Icing

1. Demonstrate recipe then have students make royal icing. Explain why royal icing sugar is chosen for a project. Explain to the students:
 - not to add too much liquid colouring as this will affect the consistency
 - to keep the icing covered with damp towel when not in use; store covered in the fridge
 - issues surrounding use of raw egg whites
2. Use a piping bag to practise piping with royal icing. Introduce students to practise templates. Emphasize the following:
 - tension of bag
 - amount of filling
 - size of tip
 - not touching the tip to surface to be written on

Melted Chocolate

1. To make things easier, use compound chocolate (also known as coating chocolate or candy melts), rather than couverture. (Couverture must be tempered to work properly and this is much more challenging.) Compound chocolate is available in stores that sell cake-decorating supplies.
2. Melt chocolate and stir well. Keep over warm water to stop it from hardening during the project. Chocolate should be viscous but not runny for piping, slightly more liquid for dipping.
 - Do not over-heat the chocolate.
 - Stir the melted chocolate often.
 - Chocolate can be passed through a mesh sieve if contaminated with crumbs.
3. Fill piping bags/cones and practise on parchment paper or back of a clean cookie sheet. Practice projects can be scraped back into the melting pot.
4. Other ways to use melted chocolate:
 - Finished décor can be stored in a cool place when dry and lifted off for garnishes.
 - Chocolate lines can be piped directly onto cookies to finish them.
 - Cookies can also be dipped in chocolate—often with toasted nuts or coloured sprinkles as a variation.

Bubble Sugar

1. Take some glucose syrup (available in stores that sell cake decorating supplies) and spread about 3 or 4 cm swaths evenly on parchment paper.
2. Add a couple of drops of water soluble food colour (or powder) evenly between two sheets of parchment paper or silicone mats.
3. Bake at 175°C (350°F) for 15–20 minutes. Let cool.
4. Break up for garnish of cake or cupcake, standing vertically for effect.

Note: This can also be made with regular granulated sugar or a specialty product called Isomalt; however, it is necessary to wipe the parchment with alcohol which is probably not available in most high schools. If using granulated sugar, the garnish will not last very long, especially on a humid day.

Marzipan, Rolled Fondant, and Gum Paste

Marzipan is available in many food stores. This garnish is especially adaptable to make colourful seasonal decorations or small animals or figurines. Options for decorating:

- It can be coloured and moulded into various shapes. Use clay-modeling tools for finer details.
- Roll it out and cut with small cookie cutters.

Zest

1. Use a zester to remove long strings of the outside peel from a citrus fruit. Be careful not to take any white pith with the outside peel.
2. Toss the strings of peel in sugar and leave to dry.
3. Use raw and sparingly as a garnish or flavouring.

Berries

Fresh berries can be used whole or cut (strawberries) as a colourful garnish for topping off cupcakes that have been iced. Wash and dry the fruit and place unblemished berries as required.

Icing/Frosting

Many different styles of icing exist. The frosting recipe with the Make Cupcakes activity is a very versatile basic icing which may be used for colouring, piping, and spreading. Options for decorating:

- A simple flat icing can be used to drizzle on cinnamon buns.
- Cream cheese icing is good for carrot cake.
- European frostings with cooked syrup and whipped eggs.

Icing Sugar

Dust icing sugar using a sieve on finished baked products for a very professional finish. Mix a little cocoa powder in with the icing sugar to decorate chocolate products.

Nuts and Seeds

Various nuts and some seeds enhance the finish of many baked goods. The following are good for garnishing: almonds (whole or sliced), pecans, walnuts, hazelnuts (filberts), coconut, sunflower seeds.

The following seeds are good for garnishing bread products (either alone or blended): sesame seeds, poppy seeds, oat flakes, other cereal flakes, flax seed, sunflower seeds.

If using raw, place on unbaked muffins and breads. If garnishing after baking, toast the nuts and then sprinkle. Chop to the appropriate size.

Whipped Cream

Talk about the properties of whipping cream: butterfat content, how it whips, and what happens if it is over-whipped. Whipped cream for garnishing should stand on its own.

1. Whip cold whipping cream and either by hand or in a stand mixer.
2. Add sugar to taste and optionally some vanilla or the seeds scraped from a vanilla bean.
3. Piping can be done using a large piping bag and an appropriate tip.

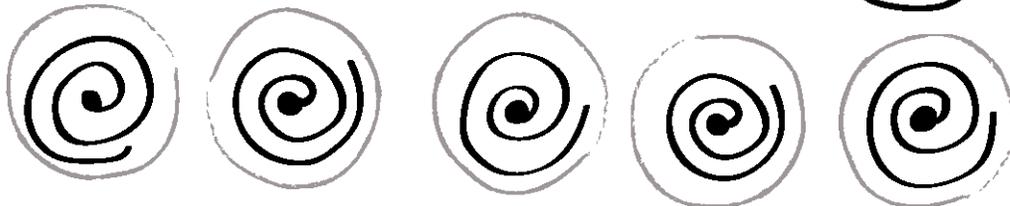
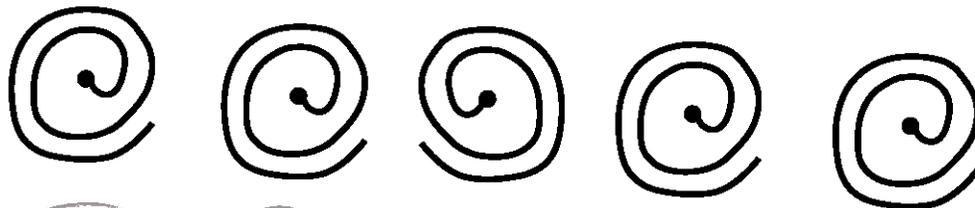
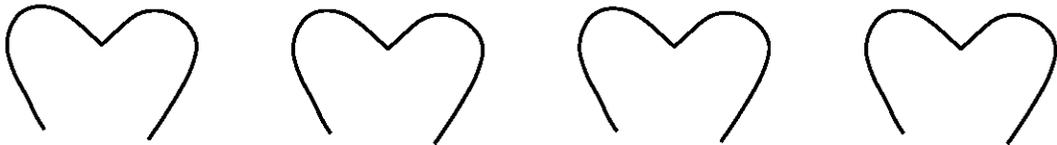
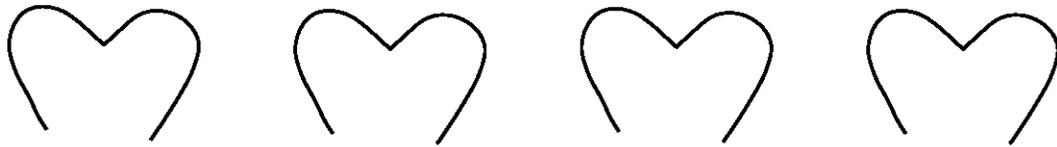
Evaluation Guidelines

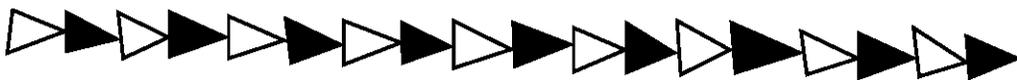
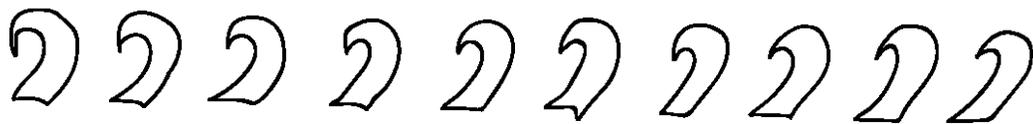
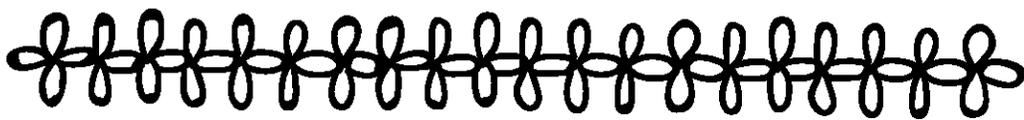
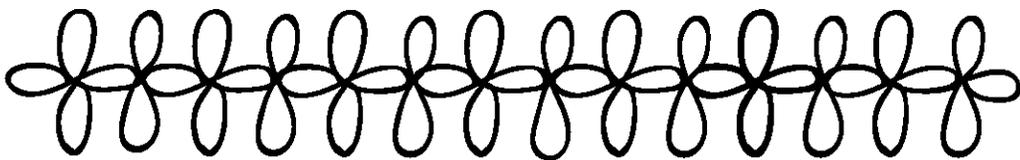
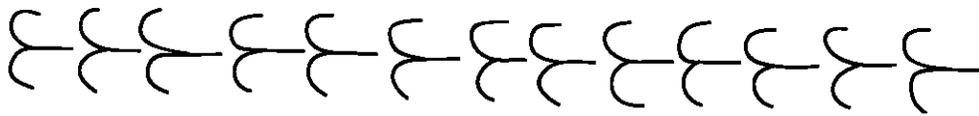
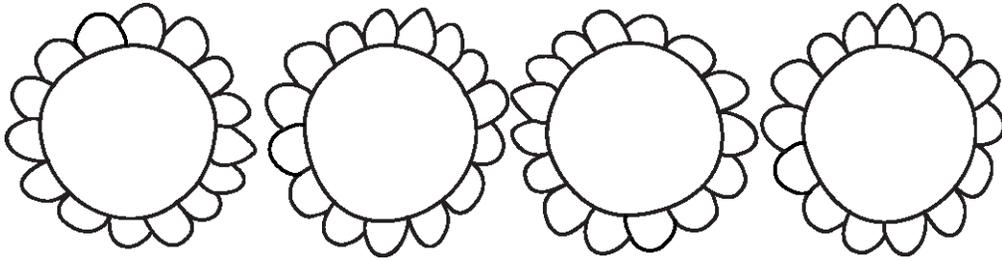
Consider co-creating the assessment criteria with your students at the beginning of the activity/project. You may want to include the following:

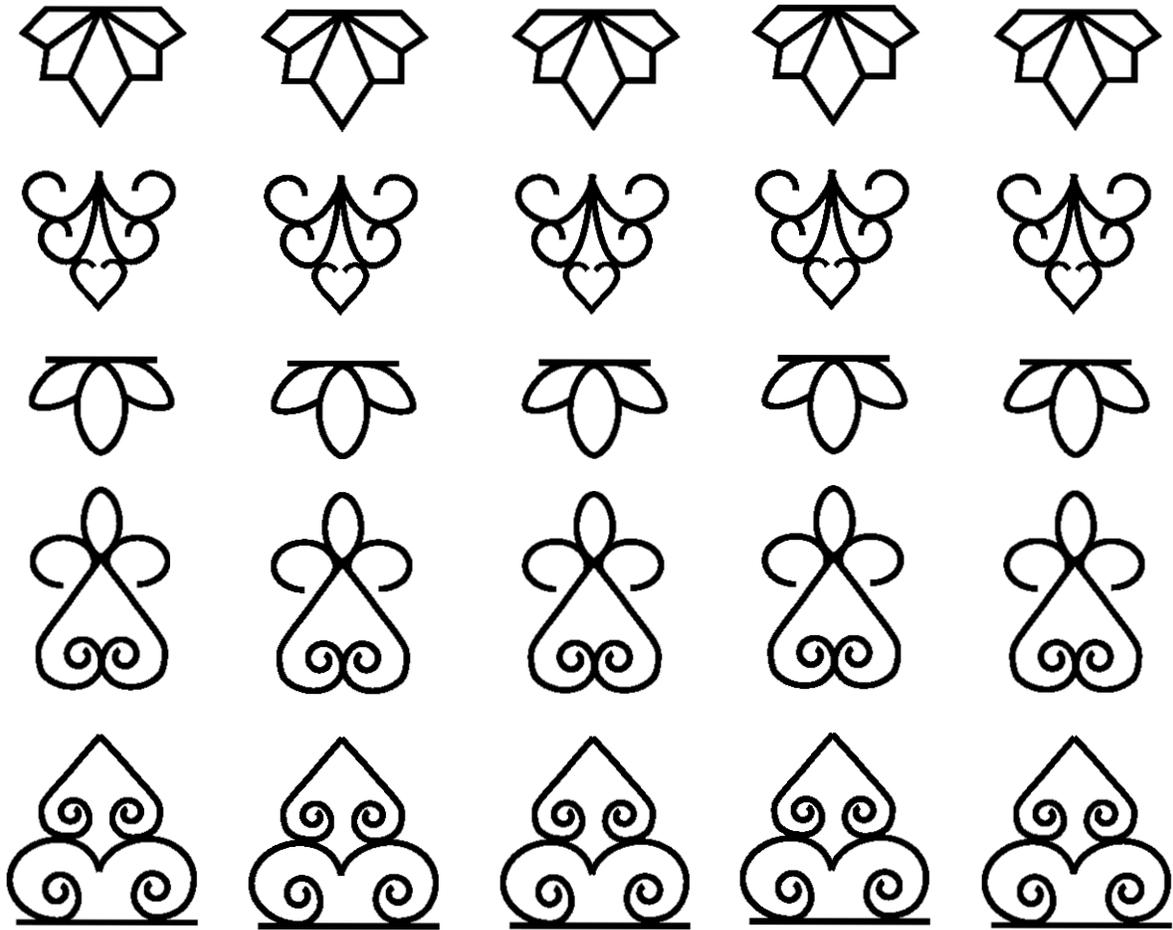
	Emerging	Developing	Proficient	Extending
Maintains food handling safety, personal hygiene, and workspace and tool and equipment cleanliness.				
Can identify various types of garnishes.				
Applies proper technique to the making of selected garnish choices: Garnish 1				
Garnish 2				
Garnish 3				
Garnish 4				

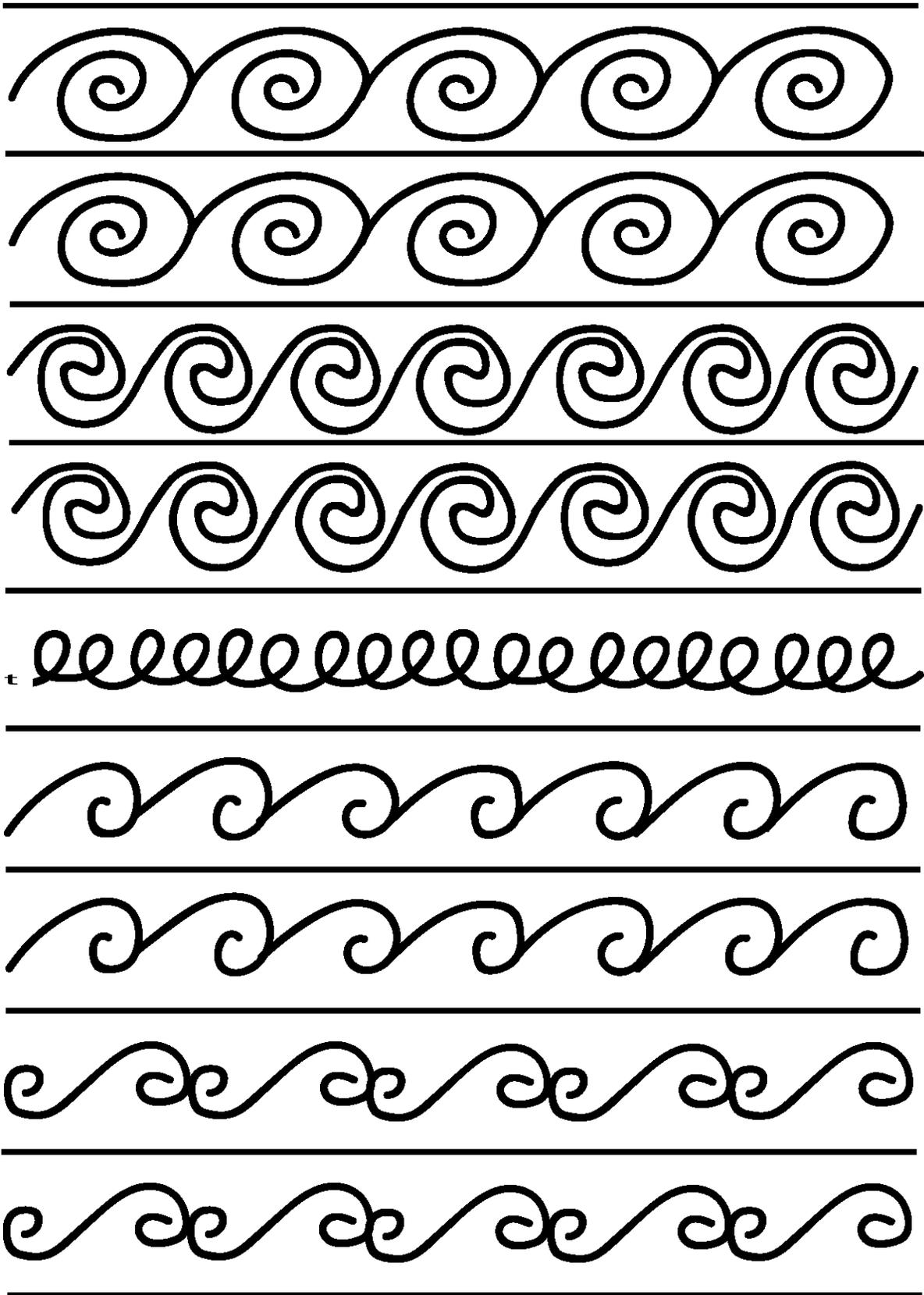
Piping Practice Templates

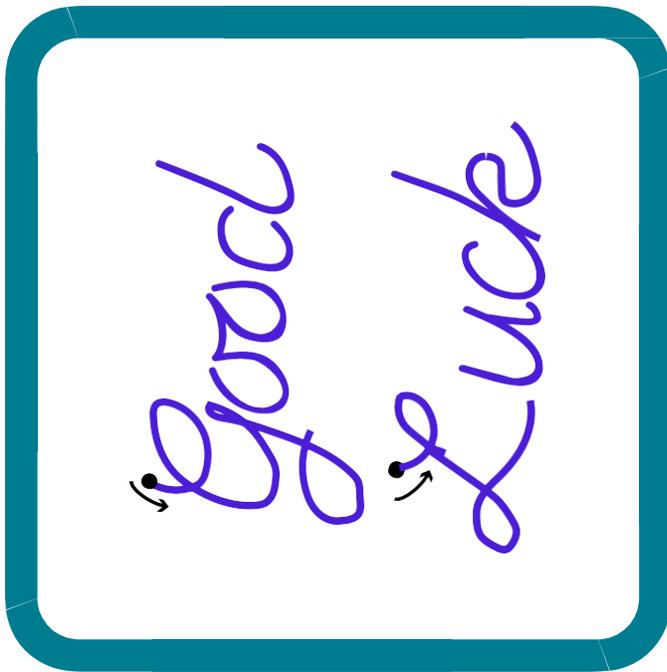
Note: if you want to reuse these pages, tape a piece of waxed paper on top of the paper before piping.











Create a Business Plan for a Bake Sale

Description

In this activity, students will choose a baked product to make and sell. In the process, they will write a business plan that reflects their chosen product and account for the costing, production, marketing, and sale of the baked product.

Lesson Objectives

Students will be able to:

- select a product to make for a bake sale
- consider market safety and food safety for production on a larger scale
- scale a recipe
- cost the recipe
- produce the recipe
- package, price, and present the items for sale
- select locations for resale, sell and collect profits, and
- evaluate the results.

Safety Considerations

- Basic food and kitchen safety
- Market safety

Assumptions

- This Activity Plan happens at the end of the module.
- The student understands ingredient measurement, food handling safety, and appropriate clothing and personal attire in kitchens.

Terminology

Market safe: Safety guidelines for selling food at temporary locations. More information can be found at <http://www.foodsafe.ca/courses/marketsafe.html>

Scale a recipe: Change the yield of a recipe to suit your needs by calculating the new amounts of each ingredient in a recipe.

Cost a recipe: Based on the required amounts and purchase price of each ingredient, a cost can be calculated for each ingredient required in a recipe. The calculated cost is then used to determine the sale price for the product.



Estimated Time

15 minutes: Introduction

15–30 minutes: Planning and research of product

10–15 minutes: Recipe scaling

30 minutes: Costing

60–120 minutes: Production

30 minutes: Packaging, pricing, and presentation (photo of final product)

60 minutes: Selling

15–20 minutes: Reflection/evaluation

Recommended Number of Students

This activity should be done individually or in pairs.

Facilities

Home Economics lab or cafeteria kitchen

Resources

Market Safe

<http://www.foodsafe.ca/courses/marketsafe.html>

Demonstrating Skills And Knowledge

Procedure

1. Introduce the topic to class.
2. Show an example of a finished product. Discuss appropriate packaging for different types of products (e.g., cakes go in boxes, cookies can go on a small plate or in a bag) keeping in mind food safety.
3. Hand out the working sheets: Costing Worksheet and Baking Business Plan Worksheet.
4. Go over an example of how to use the sheets.
5. Have students research a recipe, bring one in, or give them mock orders for packaged baked goods to fill. Students can work backwards and calculate the cost and price to charge.
6. Instruct the students to cost out at least two dozen pieces. Students need to keep in mind the “hidden” costs like time, electricity (approximately \$0.25/hour), advertising, and packaging when calculating the final cost of the products.
7. Have students make a market order of any special ingredients. Instruct that they can only use the basics in the class, or they may bring items from home (items must be safely handled).
8. Have students prepare the goods to be sold including any decorations on the product or around it.
9. Prepare posters or literature to advertise the sale if needed.
10. Have students package, price, and sell/distribute their products. (The more variety in venue, the better their chances of selling more. If they are sold outside the school environment, they won't be competing with each other.)
11. Have students submit all working copies of the project either on paper or digitally.
12. Have students fill in their journal/portfolio for the activity, as well as the Reflections and Evaluation of Bake Sale.
13. (Optional) Have students orally present on the results of their sale.

Evaluation Guidelines

Consider co-creating the assessment criteria with your students at the beginning of the activity/ project. You may want to include the following:

	Emerging	Developing	Proficient	Extending
Performs professionally in the kitchen following health and safety guidelines; considers market safety and food safety for production on a larger scale.				
Applies mathematical principles to appropriately scale recipe to desired yield.				
Costs the recipe (may use the Costing Worksheet).				
Makes and bakes the product.				
Packages and prices the items for sale.				
Selects the location for the sale; sells, and collects profits.				
Evaluates the bake sale process (may use Reflections and Evaluation of Bake Sale); adds reflections and photo to journal/ portfolio.				

Costing Worksheet

Ingredient	Cost of Package	Cost per unit measure	Cost for amount needed for recipe
Flour AP	\$6.98	10 kg package 7 cups In 1 kg $\$6.98 \div 70 \text{ cups} = \$0.0997/\text{cup}$	Recipe calls for 2 cups = \$0.199 rounded to \$0.20
Eggs	\$2.97 per dozen	$\$2.97 \div 12 = \0.2475 each	Recipe calls for 2 eggs = \$0.50
Sugar			

Baking Business Plan Worksheet

Student Name: _____

Product Name: _____

_____ Recipe

_____ Scaled

_____ Cost to Make worksheet

_____ Price to sell

_____ Equipment sheet

- Packaging – Samples

- List of locations to sell product

- Health regulations considered (HACCP) – Do I need an inspection of my kitchen?

- Do I need a business license? (check based on product and volume)

- Sample – Evaluated, photographed and uploaded

- Profit? Sales minus the cost to produce

Reflections and Evaluation of Bake Sale

Write a few paragraphs about this experience and submit to your instructor either in person or online.

1. What were some of the challenges or difficulties you faced?

2. What was the best part of this assignment?

3. What would you change or improve on?

4. Was the bake sale successful? Did you make a profit?

Presentation Name: _____

Student Name: _____

	Notes	Score
Organized and prepared for the presentation, started on time.		/5
Followed a logical progression of information.		/5
Understands the materials presented.		/5
Demonstrated time management skills by keeping to the time limit given.		/5
Quality of materials, handouts, images, power point etc.		/10
Quality of presentation, enough information was given for understanding.		/10
Quality of speech: audible, paced correctly, engaging, not monotone		/10
Total		/50

Research a Day in the Life of a Baker

Description

In this activity, students will research the daily life and working conditions of a professional baker. They will determine the specific traits and abilities that bakers possess and examine how their own qualities match up with these.

This activity can be paired with the Visit a Bakery Activity Plan.

Lesson Objectives

Students will be able to:

- identify personal traits and abilities that contribute to success in a baking career
- determine how well their own personal traits and abilities align with the demands of a baking career, and
- assess what they need to work on to ensure success in the baking industry.

Assumptions

The student is interested in learning what it's like to be a professional baker or pastry chef.

Terminology

Baker: A professional who focuses on volume production of a variety of baked goods including yeasted products, cookies, quick breads, cakes, pies, pastries, and savoury products.

Pastry chef: A professional who focuses on production of fine pastry, chocolate work, sugar work, and elaborate cakes. Pastry chefs are more likely to work in restaurants, hotels, or specialty pastry shops.

Estimated Time

70–140 minutes (plus optional research and/or homework time)

Recommended Number of Students

This activity is to be done individually (for some parts) and in groups of 2–4 (for other parts).

Facilities

Internet-accessible computer, projector, and screen



Resources

Bakery Work

<https://www.youtube.com/watch?v=iUuKstAWof4>

The King Arthur Flour Bakery: Artisans at Work

<https://youtu.be/wlpp5Xmslb8>

SkilledTradesBC Baker profile

<https://skilledtradesbc.ca/baker>

Red Seal Program – Baker

<http://www.red-seal.ca/trades/b.1k.2r-eng.html>

Demonstrating Skills And Knowledge

Procedure

1. Provide students with a copy of the Career Research and Reflection Chart (either a hard-copy or an electronic version). Remind the students to record their information on this chart as they're doing their research.
2. Watch the videos as a class or have students work on their own computers.
3. Invite students to research and write a short biography of a well-known baker or pastry chef. Examples include: Nancy Silverton, owner of La Brea Bakery in California; Florian Bellanger, executive Pastry Chef at Fourchon, Paris; Lionel Poilâne, famous French baker; and Alan Dumonceaux, captain of the Canadian Baking Team. This can be done individually or in groups. Students can submit written reports or report orally to the class or in small groups.
4. Ask students to read the blogs of various bakers. A suggested search term is “a day in the life of a baker.” Ask students to explore what hours and lifestyles are typical for today’s bakers.
5. If time or opportunity permits, invite a local baker (possibly a retired baker) to talk to the class, or a baking/pastry instructor from a post-secondary institution.
6. Ask students to explore a Baker apprenticeship using the links to SkilledTradesBC and the Red Seal Program.
7. Have students reflect in their portfolios on how closely they feel their personal traits and abilities overlap with the identified traits and abilities of the bakers/pastry chefs that they watched and read about. Students might also enjoy sharing in small groups.
8. Ask students to hand in the chart with their research results.

Culminating Activity

Description

In this activity, students will explore and identify the traits of a successful baker by reflecting on professional baking traits and creating a personal representation of what this means to the student him/herself. This personal representation can be in the form of a map, photograph, collage, painting, video, drawing, diagram, etc. Students can first brainstorm characteristics as a class or in small groups, and time may be given for additional research/reflection. The representation will be posted to the student's portfolio/blog as a final reflective piece. This activity was introduced in Create and Maintain a Journal or Portfolio.

Lesson Outcomes

Students will be able to determine if baking suits them as a profession.

Assumptions

- Student has a portfolio, journal, or blog.
- The student has completed other Activity Plans in the Baker module including A Day in the Life of a Baker, Visit a Bakery, and other Activity Plans that provide an opportunity to experience baker tasks.

Estimated Time

45–90 minutes

Evaluation Guidelines

Consider co-creating the assessment criteria with your students at the beginning of the activity/project. You may want to include the following:

	Emerging	Developing	Proficient	Extending
Conducts research into the traits and expectations of being a baker and pastry chef.				
Reflects and compares their own traits with those needed for the baking and pastry profession.				
Completes the research chart.				

Career Research and Reflection Chart

Answer the following questions and be honest with your self-evaluation.

Name of Job: Baker/Pastry Chef

Describe the Resources	Positives	Negatives
Videos		
Blogs		
Bakery Visit		
Government or Post-Secondary Website		
Describe the Job		
Describe the environment (Where is this job done, what does the area where the work is done look like?)		

Research a Day in the Life of a Baker

Baker

Describe the Job	Positives	Negatives
List some tasks that an employee of this trade might tackle		
How many people will be at the place of work?		
What are some of the products that are made?		
What hours will I work?		
What kind of salary/hourly wage can I expect?		
Other observations about the job		

Training	Positives	Negatives
How do I learn how to do the job?		
In-house		
In-school		
Personal		
What attributes do I have that would make this a desirable career?		
What excites me about this career choice?		
What are some of the drawbacks of this industry?		

