CANADA
4-H Ontario

www.4-hontario.ca

4-H ONTARIO PROJECT

BREADVENTURE

LEADER REFERENCE GUIDE

Credits

The 4-H Pledge

I pledge my Head to clearer thinking,
my Heart to greater loyalty,
my Hands to larger service,
my Health to better living, for my club, my community,
my country, and my world.

The 4-H Motto

Learn To Do By Doing

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CANADIAN AGRICULTURAL PARTNERSHIP
Grand River Agricultural Society
Ontario
Canada

CANADA
4-H Ontario

4-H Inclusion Statement

4-H in Canada is open to all* without discrimination based on race, national or ethnic origin, colour, religion, sex, age or, mental or physical disability.**

4-H is dedicated to providing a safe and inclusive environment that allows for universal access and participation. Where barriers to participation are identified, 4-H will, with reasonable accommodation, adapt programs, rules, policies, or expectations to reduce or remove the barriers.

Any accommodations, changes or exceptions will be assessed on an individual basis, taking into account the individual experience of the member and their family. The physical safety and emotional well-being of members, leaders, staff and volunteers is 4-H's highest priority, and is the ultimate consideration in final decisions.

4-H Canada and local 4-H organizations consider inclusion a priority. Leaders are encouraged to work with individuals and their families to identify and discuss accommodations as required, and to reach out to provincial or national office staff for help with unresolved concerns.

**This applies to youth members (ages 6 to 21), volunteers, leaders, staff and professionals.*
***Definition of discrimination as per Canadian Charter of Rights and Freedoms.*

Déclaration sur l'inclusion des 4-H

L'adhésion aux 4-H au Canada est ouverte à tous les jeunes* sans discrimination fondée sur la race, l'origine nationale ou ethnique, la couleur de la peau, la religion, le sexe, l'âge ou le handicap mental ou physique. **

Les 4-H ont pour mission d'offrir un environnement sécuritaire et inclusif qui permet l'accès et la participation de tous. Lorsque des obstacles à la participation sont décelés, les 4-H adapteront, à l'aide de mesures d'adaptation raisonnables, les programmes, les règles, les politiques ou les attentes afin de réduire ou d'éliminer ces obstacles.

Toute mesure d'adaptation, modification ou exception sera évaluée au cas par cas, en tenant compte de l'expérience personnelle du membre et de sa famille. La sécurité physique et le bien-être émotionnel des membres, des animateurs et des animatrices, des membres du personnel et des bénévoles sont la priorité absolue des 4-H et constituent le facteur ultime à considérer lors de la prise des décisions définitives.

Les 4-H du Canada et les organisations locales des 4-H considèrent l'inclusion comme étant une priorité. Les animateurs et les animatrices sont encouragés à collaborer avec les personnes et leurs familles afin de définir et d'examiner les mesures d'adaptation, selon les besoins, et de communiquer avec le personnel du bureau provincial ou national pour obtenir de l'aide en cas de préoccupations non résolues.

**Ceci s'applique aux jeunes membres (âgés de 6 à 21 ans), aux bénévoles, aux animateurs, aux membres du personnel et aux professionnels.*
***Selon la définition de discrimination en vertu de la Charte canadienne des droits et libertés*

Welcome to 4-H Ontario's Breadventure!

Breadmaking is a science but then again, maybe not. No matter where one lives in the world, basics ingredients: flour, salt, often yeast, sometimes fat and sugar, and water, transform into the "staff of life" and our mainstay sustenance – bread. Techniques vary as do cultural traditions, even additional ingredients, and equipment. Regardless, bread, in some form, remains a constant in our lives.

Why learn how to make bread? Perhaps it is a link to our past. Bread meant survival. Bread also ties us to our roots be it an Indigenous cornbread, a French baguette, an Italian focaccia, an Indian naan, a Jewish challah, a Mexican tortilla or an Irish soda bread and the list goes on.

While we have come to rely on "store-bought" foods, there is just something about the joy and experience of making bread. Seeing the yeast grow. Feeling the softness and transformation that comes with handling and kneading dough. Smelling that heady, earthy aroma as the bread bakes. Connecting to the warmth and taste of fresh bread. Bread appeals to our senses. Bread means so much.

There are many kinds of bread.

- **Unleavened breads** such as Matza and flatbreads
- **Quick bread**s such as muffins, scones, biscuits, sweet and savoury loaves
- **Yeast breads** such as sandwich loaves, preferments (e.g., rustic or artisan types, and sourdough) and sweet, rich breads such as stollen and hot cross buns enjoyed at holiday times.

As the name suggests, unleavened breads do not contain a leavening (rising) agent. Quick breads are rapidly mixed and rely on baking soda and baking powder to rise. Yeast breads require yeast (dry active, instant) for leavening and involve longer processes but arguably produce delicious results.

This project endeavours to embrace the diversity of bread. It is designed to be a culinary adventure. Participants will learn how to make and use a variety of breads using an assortment of ingredients and techniques. Participants have opportunities to research, to learn bread history and trivia and to think critically about costs and managing food waste. Great care has been taken to provide information, activities, and recipes with the needs and characteristics of 4-H Participants in mind.

There will be challenges. Time constraints will require creative planning for leaders. Perhaps it will mean preparing dough ahead of time and at varying stages. Baking is an applied science, but there are several things that can affect the end products e.g., the brand of flour, the time of the year, measuring tools. The very best way to make bread is by weighing ingredients but this is limiting. Our grandparents and great-grandparents operated by feel and we need to do so, too; this will come with practice and experimentation. Learn to do by doing!

Project Objectives

- To explore the diversity of bread
- To learn about the ingredients and techniques of breadmaking
- To embrace food literacy with an emphasis on food preparation skills
- To experience a positive relationship with food and the fun that comes with trying new foods
- To value the importance of preparing and eating food with others
- To be environmentally conscious in applying practices that address food waste and other environmental concerns such as reducing the use of plastics and aerosols

How to Use This Manual

The Leader Reference Guide

The reference book is laid out into 6 sections:

Meeting 1 – Bread Bread Bread?

Meeting 2 – Breadmaking Basics

Meeting 3 – Variations On A Theme

Meeting 4 – Beyond Yeast

Meeting 5 – How Sweet It Is

Meeting 6 – For The Fun of Bread

Each meeting includes:

- Clear objectives
- Sample meeting agenda
- Bread history and trivia
- Content Notes related to the theme and topics of the meeting, notes for leaders
- Welcoming Activity, a way to engage participants in the theme of the meeting
- Topic Information and an assortment of activities
- Suggested recipes from the **RECIPE BOOKLET** to support topics
- Suggestions for adding to the **PARTICIPANTS JOURNAL**
- **KNEADING MORE** sections for participants who like to challenge their learning and experience
- **CHALLENGE YOURSELF** – a few questions to help prepare for 4-H activities and competitions.

Leaders are encouraged to pick and choose activities and recipes that best suit their participants.

Participants who are advanced in knowledge and skills should be encouraged to take leadership roles in assisting leaders with meeting activities. **KNEADING MORE** sections are designed for those participants, too. These sections only appear in the **LEADER REFERENCE GUIDE**. Leaders will need to communicate the activities to their participants.

Participants Journal

Participating and reflecting are important life-long skills. The **PARTICIPANTS JOURNAL** is designed to record experiences, to reflect on learning and to be a future reference.
The **PARTICIPANTS JOURNAL** can be given to each participant at the beginning of the first meeting. Ask participants to keep it safely in a binder or duo tang so that they can easily add to it at each meeting. Several activities have been included. Photocopy other selected activities from the **LEADER REFERENCE GUIDE**, as needed.

Trying and reflecting on recipes made at the club meetings and at home are the key parts of this project. There are special pages for recording and reflecting.

Participants are also asked to reflect on each meeting and record 3 Take-Aways i.e., 3 things that they feel they learned. It is hoped that this reflective action will be meaningful to participants. Completion of the journal may be a requirement of the project.

Recipe Booklet

There are almost 50 recipes in the booklet. Each has been carefully chosen and thoroughly tested to support the topics and activities for each meeting, and the needs and interests of 4-H participants. Knowledge and transferable skills are acquired through the experiential learning that comes with reading and following recipes.

Most of the recipes have extra information or ideas. Be aware that breadmaking may require extra time for rising and resting.

The beginning section of the **RECIPE BOOKLET** contains important background information about baking and food and kitchen safety.

Planning A Meeting

Plan your meetings well. Review all the information well in advance so you are prepared and ready!

Before Each Meeting

- Read the topic information and activities and photocopy any relevant resources for the Participants Journal.
- Be familiar with the topic information for each meeting. Think of imaginative ways to present the information to the participants. Do not rely on just reading the information out loud. Review available resources, plan the meetings and choose activities and themes that complement the ages and interests of your participants. Gather any equipment and/or resources that will be needed to complete the meeting.
- At least 12 hours of club meeting time is required for every project; including club business, specific project information and social recreation. The delivery format for that material is left to the discretion of the leaders. Before each meeting, create a timeline to ensure that you are providing an adequate amount of instructional time for club completion. **Note:** the best practice recommendation is that a club have multiple meeting times for each project. Included on the following page is a Leader's Planning Chart to help with the planning of meetings. In addition to the chart, keep track of what went well and what could be changed next time. That way, each time this project is run, the content of the meetings can be different!

When planning each meeting, a typical 4-H meeting agenda should include the following:

- Welcome & Call to Order
- 4-H Pledge
- Roll Call
- Parliamentary Procedure:
  - Secretary's Report
  - Treasurer's Report (if any)
  - Press Report
  - New Business: local and provincial 4-H activities/opportunities, upcoming club activities
- Meeting content and activities
- Clean-up
- Social Recreation and/or refreshments
- Adjournment

Judging And Communications

Each meeting must include either a judging or public speaking activity.

- Judging gives the participants an opportunity to use judging techniques as part of the learning process. Through judging, participants learn to evaluate, make decisions and communicate with others. They also develop critical thinking skills, confidence and self-esteem. Many examples are used in this reference manual but use your imagination! As long as participants are setting criteria and critically thinking about where items fit within that set of criteria, they are learning the basic skills of judging!
- A communications activity has been provided for each meeting but can be included in the Roll Call or social recreation time. These activities do not need to involve the topic of bread as the outcome is more about understanding the concepts of effective communication.

Electing Your Executive

Elections can be chaired by a youth leader, senior participant or club leader. The person chairing the elections is not eligible for any positions.

Procedure:

1. All positions are declared vacant by the chairperson, who indicates this by saying "I'd like to declare all positions vacant."
2. The group decides on the method of voting (i.e. show of hands, ballot or standing).
3. The chairperson accepts nomination from participants for each position being filled. Nominations do not require a seconder. Nominations are closed by motion or declaration by the chairperson.
4. Each participant nominated is asked if he/she will stand for the position. Names of participants who decline are crossed off.
5. Voting takes place by selected method and majority rules (i.e. participant with most votes).
6. Announce the name of the successful participant. Offer congratulations and thank all others that ran for the position.
7. If ballots are used, a motion to destroy the ballots is required and voted on.

Steps In Making A Motion

The motion is a very important key to having good meetings. Motions are a way of introducing topics for discussion and allowing each participant to speak and vote. Any participant can make a motion.

Steps in Making a Motion:

1. Address the chairperson (i.e. raise your hand).
2. Wait for the chairperson to acknowledge you.
3. Make the motion: "I move that…"
4. Another person seconds the motion: "I second the motion."
5. Chairperson states the motion.
6. Chairperson calls for discussion of the motion.
7. Chairperson restates the motion.
8. Chairperson calls the vote: "All in favour? Opposed?"
9. Chairperson announces the result of the vote: "Motion carried" or "Motion defeated."

Leader's Planning Chart

Mtg. #	Date/Place	Topics Covered	Activities	Materials Needed

Volunteer Responsibilities

As A Club Volunteer Your Responsibilities Are To:

- Be a Volunteer in Good Standing by completing the volunteer screening process, attending a volunteer training session and adhere to the 4-H Code of Conduct.
- Notify the local association of the club, arrange a meeting schedule and participate in club meetings, activities and the Achievement program, assuring that all meetings and activities are accessible and inclusive for all participants.
- Review the project material in the Leader Reference Manual to familiarize yourself with the information and adapt it to fit your group. Be well organized and teach the material based on your group's age, interest and experience level.
- Organize the club so participants gain parliamentary procedure, judging and communication skills.
- Ensure that participants are registered for the club using the online registration system.
- Review the Participant Agreement Form (PAF) that participants completed when registering online.
- Ensure that all participants, leaders and parent helpers know the appropriate actions during any emergency.
- Check with participants for any food allergies or dietary restrictions and plan snacks accordingly.

As A Club Participant Your Responsibilities Are To:

- Actively participate in at least 2/3 of club meetings. Clubs must have a minimum of 12 hours of meeting time.
- Complete the project requirement to the satisfaction of club Leader(s).
- Complete the Participants Journal; this is an important future reference. There will be activities at each meeting. In addition, participants are required to make and record at least one (1) recipe per meeting from the recipe booklet for their household.
- Older and more experienced participants are encouraged to participate in **KNEADING MORE** activities.
- Take part in the Achievement program as determined by the club participants and leader(s).

Achievement Program Ideas/Suggestions

- Plan a potluck meal for the club participants and guests
- Participate in baking competitions at a local fair
- Create visual essays of breadmaking experiences. Display in a local gallery, library or community centre
- Bake fresh breads and rolls for a food bank, or youth shelter
- Have a bake sale to raise funds for a community need
- Tour a bakery or flour mill and arrange for a deli lunch featuring a variety of breads and rolls

Tour & Guest Speaker Ideas

Consider including a tour in your club planning.
Participants may find the historical connections to be of interest. There are a number of interactive historic flour mills in Ontario:

- Old Stone Mill National Historic Site of Canada, Delta, Ontario. http://www.deltamill.org/
- Watsons Mill, Manotick, Ontario https://watsonsmill.com/
- Arva Flour Mill, Arva, Ontario https://www.arvaflourmill.com/pages/about-us
- Paisley Mill, Paisley, Ontario https://paisleymill.ca/
- Backhouse Historic Site, Port Rowan, Ontario https://lprca.on.ca/education-programming/backhouse-historic-site/
- Other options may include a local bakery or a bulk food store that carries a selection of flours.

The 4-H Pledge

I pledge
My head to clearer thinking,
My heart to greater loyalty,
My hands to larger service,
My health to better living,
For my club, my community,
my country, and my world.

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Meeting 1 – Bread Bread Bread

Setting Objectives:

- Identify duties of club executive
- Use parliamentary procedure to elect club executive
- Organize themselves to meet project requirements
- Recognize that "bread" encompasses a variety of culturally significant food products
- Explain basic food and kitchen safety
- Begin learning about bread making basic

TRIVIA

Bread began in Asia thousands of years ago. Easily obtained grains were ground and mixed with water to give a lumpy oatmeal-like substance. The mush was cooked on heated rocks.

Mesopotamians were the first to try growing and eating different kinds of grains. These were mixed with water and baked or boiled over an open fire.

In Ancient Egypt bread really took shape. Egyptians harvested grain, milled it, and added yeast. Prior to this all breads were unleavened.

Recipe Management Suggestions:

- BREAD IN A BAG introduces participants to the basic ingredients used in breadmaking. By doing this recipe, participants can be introduced or reminded about proper measuring techniques.
- The dough for SOFT PRETZELS or QUICK PIZZA CRUST or ITALIAN STYLE BREADSTICKS can be prepared ahead of the meeting so that participants shape, rise and bake.

Suggested Roll Call Questions:

- For this first meeting, see the Welcoming Activity and the Community Circle (found on page 14)

SAMPLE MEETING AGENDA Time: 1 hour 35 minutes

Welcome, Call to order, Pledge Review 4-H Code of Conduct	Briefly welcome participants. Explain that at future meetings the elected club executive will have responsibilities for beginning the meeting. Recite 4-H pledge	10 minutes
Roll Call	Welcoming Activity, Community Circle	15 minutes
Parliamentary Procedure	Introductions, Elections and Business	5 minutes
	Discuss club name (decision reserved until next meeting). Decide on how ingredients will be acquired and how food expenses will be handled. Review expectations for the club and requirements.	
Topic Information, Discussion	Breads of the World Food and Kitchen Safety Tools and Terminology Recipe Reading	10-15 minutes 10-15 minutes 10 minutes 15 minutes
Recipe Testing	Possibilities: • Bread In A Bag • Soft Pretzels • Quick Pizza Crust • Italian Style Breadsticks	15-20 minutes
Wrap up, Social Time And Adjournment	Check out the Participants Journal Try one of the recipe suggestions. Log comments	5 minutes

Content Notes

- As participants prepare to learn about making bread it is important to realize some of the many kinds of bread throughout the world and the social and cultural connections. In becoming more globally conscious, many breads have become commonplace. This project has been designed to embrace different kinds of "bread", how they are made and used. In this first meeting participants will be introduced to the diversity of bread.
- 4-H participants enjoy "learning to do by doing". Before this can happen, some basics need to be reviewed: food and kitchen safety, tools and terminology, and recipe reading. Use the Baking and Cooking Skills Checklist (Black Line Master (B.L.M. 1.3) to ascertain where participants are at in their understanding of some basic food preparation knowledge and skills. This list is also in the PARTICIPANTS JOURNAL.
- Links to Internet sites are current to the time of project development. These are only suggestions. Be selective. Choose sites that are reliable and well suited to participants' needs.
- Several activities are listed to prepare participants for recipe making experiences. Choose one (1) or more activities that best fit the needs of the participants.
- The first meeting is also the time to organize the club. This includes electing a club executive and establishing a basic format for future meetings. Decisions will need to be made about food costs, meeting times, and dates. Expectations need to be clearly communicated and requirements for project completion emphasized.
- Several introductory-type recipes are suggested. Given time considerations leaders may choose to have dough prepared ahead so that participants can shape, bake, eat and socialize. Some leaders may choose to conduct a demonstration or an interactive demonstration (where participants take part in doing different parts i.e., measuring ingredients, stirring, mixing, kneading, shaping, etc.) to reinforce food and kitchen safety practices, tools and terminology, and recipe reading.
- Senior participants are encouraged to try KNEADING MORE.

Welcoming Activity

As participants arrive PIN or TAPE the name of a bread on the backs of participants. Invite participants to move about asking questions of other participants to find out the name of their bread. See list below.

Community Circle (Roll Call)

A **community circle** is an inclusive way to respectfully share ideas and build relationships.

Participants and leaders sit in a circle and one by one, beginning with the leader, respond to a prompt or question. The leader's response provides an example. Sometimes an object such as a wooden spoon is used as a talking stick. This promotes focus as it is passed from speaker to speaker and confidence for the speaker to freely express their ideas.

There are many tips that can strengthen the effectiveness of this strategy. Here are a few:

- All participants sit in a circle to establish equality and inclusivity.
- Remind participants that all ideas are welcomed, no response is "wrong".
- No disrespect such as snickering or laughing is allowed. Participants should use active listening skills to respectfully listen to the ideas of others.
- A participant has a right "to pass" if they don't have an idea or feel uncomfortable in sharing. A leader may return later to see if the participant would like to then share or respond to the prompt.
- Sometimes several questions might be used. If so, the leader should reverse the order of the participants.
- The leader should briefly summarize the findings of the session.

Use a community circle technique.
Invite participants to respond to the questions (prompts):

- When you hear the word "bread" what comes to your mind?
- What connections do you make to "bread"?

Record answers from participants. Use chart paper and markers, if possible. This list will provide a pre-assessment of participant knowledge and understanding and may help in determining future meeting activities and club direction. Plan to revisit this list at the end of the project as a post-assessment so that participants can discuss their learning as they compare their initial understandings to their new ones.

Bread – A Worldwide Staple

Bread. What ideas and images emerge? Toast. Bakery smells. Sandwiches. Burgers. Holiday treats. Perhaps currency? What is it about "bread" that we really like? Often the idea of bread prompts a social emotional response.

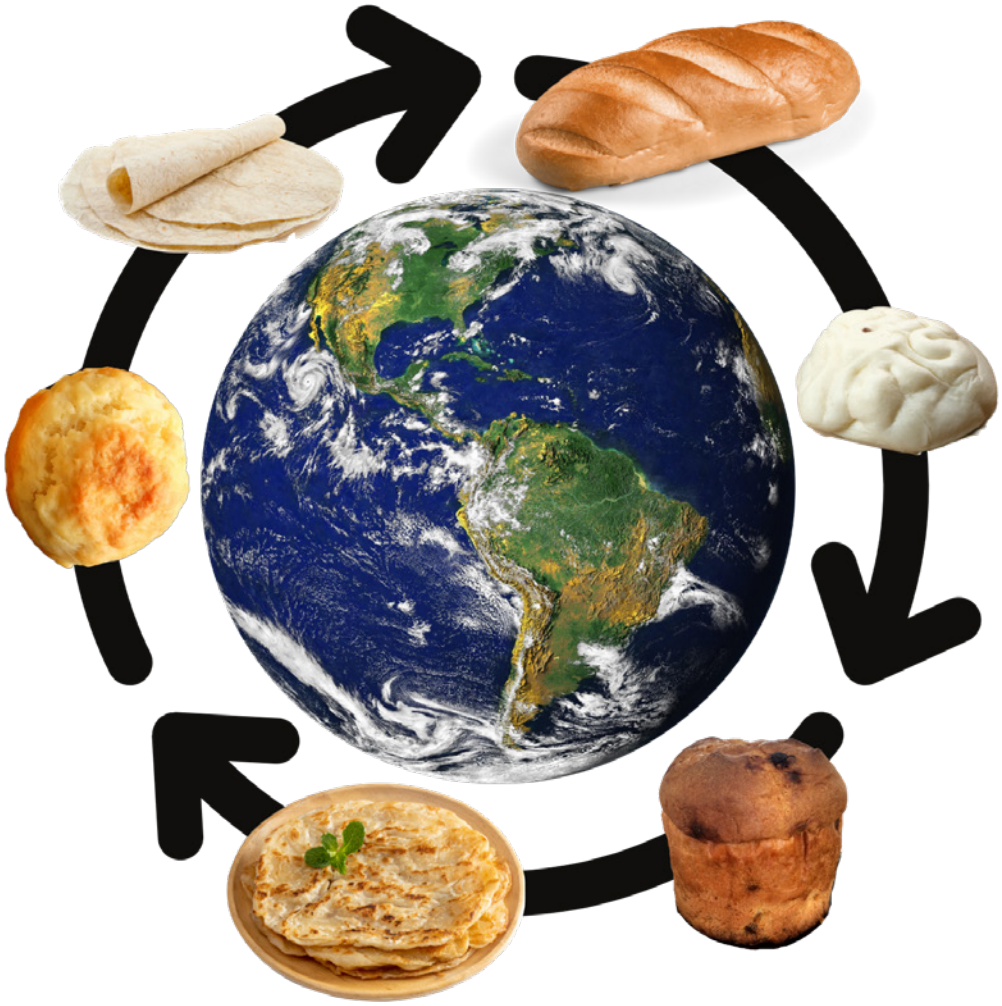
The world of bread and bread making has a long history. Wars have been fought over bread and the lands on which grains for flour have been grown. Bread, as a food, has sustained societies and enriched social and cultural practices. Bread is the "staff of life", and the staple or basic food in some form for people around the world.

In Canada white bread may be argued to be our staple food. In Ireland soda bread is a staple while in China bao and mantou might be the go-to breads. In Germany a hearty farmer's bread, bauernbrot, or a rye bread might be the choice. Scones and crumpets are popular in Great Britain and naan, chapati and roti in India. Mexicans might choose tortillas while Italians love focaccia. In Ethiopia injera is not only the mainstay bread but serves as a utensil to scoop up stew-type dishes. Australians enjoy damper bread, and the list goes on.

The type of grain grown in an area will influence flour and bread production. Where rye is a popular grain in Eastern Europe, corn is popular in South and Central America. Thus, we find the dark rye and hearty breads of Europe, and tortillas, tamales and arepas in the Southern Americas. Wheat is grown worldwide and produces a wide variety of white, whole-wheat, and multi-grain flours which in turn become an array of breads such as bagels, baguettes, and others.

Special breads are part of holiday celebrations and traditions throughout the world. Kulich is a popular Easter sweet bread in countries like Russia and the Ukraine. Hot cross buns are the norm in England. Challah is a popular Jewish bread served on the Sabbath and for celebrations such as Bar Mitzvahs. At Christmas and New Years, Italians enjoy panettone.

Bread plays an important part in our eating patterns and food traditions. Sometimes it is a comfort food such as tea and toast. Interestingly, no matter the form, and no matter what part of the world, bread generally consists of flour or a flour combination, liquid, salt, sugar, sometimes a fat such as butter or shortening, and usually yeast or some other leavening agent.



A Quick Web Search - Breads Of The World

1. Present a list of breads of the world. (See below).
2. Alternatively, print names of breads on slips of paper and place in a container.
3. Invite participants to choose and investigate a bread using their personal devices.
4. Supply print reference copies from reliable Internet sources where Internet access is limited.
5. Explain that participants will be asked to report on what they learn. Limit summaries to 2 or 3 things about the bread investigated.

This activity is meant to be a brief appreciation of the many forms "bread" takes throughout the world and the realization of the basic ingredients: flour, moisture, salt, and usually some form of leavening e.g., yeast, baking powder, baking soda.
Participants could do this activity during baking time.
Invite participants to share what they have learned verbally OR printed on chart type paper and displayed.

30 Breads Of The World

Bagel	Bammy	Bao
Barmbrack	Bauernbrot	Boston Brown Bread
Brioche	Challah	Chapati
Ciabata	Crumpets	Croissant
Damper	English Muffins	Focaccia
French Bread	Grissini	Irish Soda Bread
Kulich	Lavash	Matzo
Naan	Pita	Pretzel
Rye Bread	Scone	Sourdough
Tortilla	Whole Wheat	Zwieback

10 BREADS OF THE WORLD MATCH-UP
See B.L.M. 1.1
Answers: A-7, B-4, C-1, D-10, E-2, F-8, G-6, H-3, I-9, J-5

Try It!

Consider posting bread cards used in the welcoming activity so that participants can see the many different forms of bread.

Conduct a quick survey to see what breads participants have tasted. Use a show of hands or invite participants to put a check mark beside each bread they have tasted.

Getting Started Into Bread Making – Food And Kitchen Safety, Tools And Terms, Recipe Reading

Note to Leaders:

These topics should be reviewed as gentle reminders. Each topic can be quite lengthy but they should not be the focus as the new club gets underway. There will be opportunities in the practical sessions to expand on these topics.

Food and Kitchen Safety (Adapted From Ontario's Tasty Fruit And Vegetables)

Choose one or more activities to review food and kitchen safety. These activities have been adapted to fit a variety of bread making including biscuits, quick breads, muffins, etc.

Snowball

- Invite participants to separately record on a coloured sheet of paper two (2) or three (3) key suggestions for working safely in the kitchen.
- Participants then roll their paper into a ball, and toss it into a bowl or bucket.
- Taking turns, participants pull out a ball that is a different colour to the one they wrote on and read aloud the suggestions.
- Many good ideas for food and kitchen safety can quickly be communicated.

Videos

There are an assortment of videos and interactives available on the Internet. Be selective. Use videos that show home kitchens as opposed to restaurants.

After viewing the video, ask participants to identify three (3) key things they will remember about food and kitchen safety.

- Kitchen and Food Safety: https://www.youtube.com/watch?v=lEvl_Pln9HU
- Health and Safety – Basic Introduction to Food Hygiene: https://www.youtube.com/watch?v=pLJ703rOTq4
- How to be food safe Canada: https://www.youtube.com/watch?v=sf7ic4Lhnv8
- Kitchen Safety: https://slideplayer.com/slide/3867355/

A Baker's Dozen and More - Safety Tips in the Kitchen

1. Before you begin roll up long sleeves, tie back long hair and remove loose clothing and jewelry that might get in the way or catch on something. Closed toed shoes are best.
2. Wash your hands and dry them well. Wet hands can be slippery.
3. Keep cabinet doors and drawers closed so you don't bump into them.
4. Wipe up spills as soon as they happen. Wet spots can be slippery.
5. Always use oven mitts to handle food on the stove, in the oven or microwave and under the broiler.
6. Always pick up knives by their handle and do not point them at anyone.
7. Keep electrical cords away from the stove top, oven, and sink.
8. Before leaving the kitchen, check that the oven and burners are all turned off.
9. Don't put knives or other sharp objects in a sink full of water. Someone could reach in and get hurt.
10. Never use water on a fire in your kitchen- it could make the fire bigger.
11. Keep paper towels, dish towels and potholders away from the stove top so they don't catch on fire.
12. Keep hot foods hot and cold foods cold.
13. Use separate utensils for tasting.
14. Wash dishes in a dishwasher or by using hot, soapy water and rinsing well.
What other safety tips could be added?

What is Wrong with this Picture?

Find a picture such as the one below. Invite participants to find the errors. This can be followed with a short discussion.

Reference: https://www.purposegames.com/nl/game/kitchen-safety-hazards

What other things should be remembered when working in a kitchen to ensure a safe working environment?

Food and Kitchen Safety True/False

Pair participants to work together to complete the paper exercise. Working in pairs allows participants to discuss and collaborate, this aids in retention.

See B.L.M. 1.2 FOOD AND KITCHEN SAFETY – TRUE/FALSE

Answers: All are TRUE

Baking and Cooking Skills Check-list

See B.L.M. 1.3

Invite participants to complete the check-list in the Participants Journal. This can be a diagnostic assessment to see what participants know and can do. This will also guide the length of time needed to review or learn about equipment, terminology, measurement, etc. in future meetings. This checklist can be revisited at the end of the club to see if competency has increased.

Tools and Terminology

Choose one or more activities to review tools and terminology as they apply to baking.

Tools and Equipment Memory Game

Invite participants to put the numbers 1 to 15 (20) on a sheet of paper. Circulate the room with a tray of tools and equipment relevant to bread making. Participants should only get 1 or 2 looks. They need to remember as many of the items as they can to write on their paper.

Have participants identify each item and explain how it might be used.

Sample items: wooden spoon, measuring spoons, dry measure, wet measure, rubber scraper, dough or bench scraper, ice-cream scoop, paring knife, French knife, serrated knife (e.g., bread knife), pastry brush, oven mitts, parchment paper, box grater, cutting board, dish cloth, tea towel, etc.

Mini-Demonstrations

Participants chose a piece of equipment and role play with or without food how the tool or piece of equipment is to be used and if there is any safety advice.

Kitchen Dictionary, Some Tools and Terms Relevant to Bread Making

See B.L.M. 1.4
Participants work together to fill in the missing letters in the first column. In the third column participants can name tools or equipment used for the actions.

READING RECIPES

Recipes can be found written in various formats. For this project the STANDARD recipe format has been chosen.

The Basic Standard Format

CRANBERRY BREAD

2 cups (500 mL) all-purpose flour
¾ cup (175 mL) white sugar
½ tsp (2 mL) salt
1 ½ tsp (7 mL) baking powder
½ tsp (2 mL) baking soda
1 cup (250 mL) chopped cranberries
1 egg
2 tbsp (30 mL) canola oil
¾ cup (175 mL) orange juice
1 tbsp (15 mL) orange zest

1. Preheat oven to 350 ◦F or 175◦ C.
2. Grease a 9X5 inch (2L) loaf pan.
3. Combine the flour, sugar, salt, baking powder and baking soda. Add the cranberries and stir to coat with flour.
4. Mix together the egg, oil, orange juice and orange zest in a separate bowl.
5. Pour the egg mixture into the flour mixture and stir with a fork just until blended. Spoon the batter into the prepared pan.
6. Bake 50 minutes or until a toothpick inserted comes out clean. Cool in pan for 10 minutes and then remove to cooling rack.

Yield: 1 loaf, approximately 10 slices

Recipe title

Ingredients listed in the order used in the recipe.

Ingredients listed and in amounts needed. Ingredients listed in Imperial or Conventional measurement and metric measurement. Use one system only.

Instructions listed by number. Each instruction begins with an action.

Yield or the amount the recipe produces.

Critiquing a recipe might prepare participants for an interesting judging activity.

Participants could critique a magazine, Internet or food label recipe

Club Organization

Executive Positions and Duties

- Post executive positions and duties on chart papers around the room.
- Invite anyone who has held one of the positions to go and stand beside the appropriate poster.
- Ask those experienced participants to explain the position to the rest of the participants

President • Oversees all actions from organizing and running meetings to payment of bills • Acts as the chairperson of the meetings beginning with a call to order, welcome, followed by the pledge, roll call and minutes of the last meeting • Prepares agenda • Needs to remain impartial to all discussions held • Works with leaders to support learning and club activities	**Vice-President** • Learns duties of the president so that they may act in the absence of the president • Helps with the preparation of each meeting • Attends to special guests
Secretary • Assists president in preparing meeting agenda • Prepares the minutes from each meeting • Looks after any correspondence and records • Keeps list of participants and records attendance • Notifies participants about meetings and other 4-H events	**Treasurer** • Keeps a record of any financial matters of the club including deposits, bank statements, invoices, etc. • Collects and deposits fees as required • Pays bills through cheque or through an agreed upon format • Reports on the financial state at each meeting
Press Reporter • Looks after the public relations for the club by publicizing any upcoming events in the local community newspaper or in electronic newsletters • Reports on club activities in the local community newspaper or in electronic newsletters including 4-H newsletters • Keeps a scrapbook of photos or newspaper clippings of the club and its participants	

Information on Parliamentary Procedure

Parliamentary procedure is also called "rules of order" and consists of generally accepted practices that determine the will of the majority but preserves the rights of the minority and thus facilitates the business of the group. The structure helps in the organization and running of a meeting and aids in decision making.

Motions

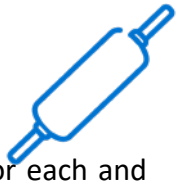
- A procedure to have a topic discussed and recorded
- Any participant (except the president) may make a motion for an idea or plan
- The participant raises their hand then addresses the president
- The participant is then called upon to speak, stating "Mr/Ms President – I move that…."
- The president calls for a seconder to the motion and another participant now states, " I second the motion"
- The president will now state the motion and call for discussion
- Participants may support, comment, or question the motion
- After sufficient discussion, the president calls for a vote whereby the motion is carried or defeated

Nominations

- Participants choose the officers of their club by formally presenting the name of a candidate to the club for a position to be filled
- Candidate is referred to as the nominee
- Chairperson must call for nominations by saying, "Nominations are now open for the position of…"
- Chairperson calls for nominations. Participants nominate by saying, "I nominate … for the position of … (a nomination does not require a seconder, as in motions)
- Before closing nominations, the chairperson must call for any additional nominations three times, saying "Are there any further nominations?"
- Chairperson declares, "Nominations closed"
- Chairperson asks each nominee if they agree to stand for the position
- Participants then vote by a show of hands or secret ballot. If using a show of hands, nominees are asked to leave the room
- Each executive position should be done separately
- If only one person is nominated for a position, then the participant is "acclaimed". The chairperson asks for a show of hands in agreement that the candidate be declared by unanimous decision.

Adapted from Ontario's Tasty Fruits and Vegetables and Innovation and Entrepreneurship

KNEADING MORE



Examine 3 or 4 breads from around the world based on activities in the meeting. Find a recipe for each and analyze the recipe in terms of ingredients. What conclusions can be made?

Check the formats of the recipes. How do they compare to the standard format?

This chart may help in your analyses.

BREAD TRADITION	COUNTRY	INGREDIENTS	ANY OTHER INFORMATION

Conclusions:

Challenge YOURSELF

Based on the information learned in this meeting, how many of these questions can you answer?

1. Name the 4 basic breadmaking ingredients. (Flour, yeast, salt, and water)
2. When bread doesn't use yeast or baking powder or baking soda, it is considered what type of bread? (Unleavened)
3. What is often considered to be the "staff of life"? (Bread)
4. The name of a traditional bread of Ireland or India (Soda Bread / Roti, Naan or Chapati)
5. What is the most important food and kitchen safety rule? (Wash your hands for at least 20 seconds by using warm water and soap and lots of rubbing.)

Research Reminders

The Internet has become our key research tool as we seek information. Questions or sets of words are "googled" and responses become almost instantaneous. Opinion pieces often emerge. Blogs, for example, tend to be written by persons with an interest in a particular point of view. Readers tend to gravitate to pieces that reinforce or confirm their point of view. This is known as selection bias. This is not research; this is about reading opinions.

Good research involves searching for facts and building an opinion from there.

- Look for reputable websites.
- Check the consistency of information. Do sources agree?
- Check credentials. Who is writing the piece? Is the author an expert based on education and/or experience?
- Keep an open mind. Perhaps some research will be surprising.
- Try to be objective in gathering information.

B.L.M 1.1

10 BREADS FROM AROUND THE WORLD

People all over the world eat bread in many shapes, sizes, and flavours. An essential ingredient is flour, usually ground from locally grown grains. The most popular bread-making grain used in Canada: _____.

Match the breads on the left to their description on the right. On a world map locate where these breads are mainly enjoyed.

A. Lefse	1. Noodle dough dumplings from Asia. Filled with spiced meat and boiled in soup or fried and eaten as a side dish.
B. Pita	2. Corn dough patted into thin, flat rounds and fried on a hot griddle. This is the daily bread in a country on the same continent as Canada. These can also be made from flour.
C. Wonton	3. Flat, chewy rounds of bread served with curries or with peanut butter and honey, cheese and tomato, or just butter. They are from the country of the Taj Mahal.
D. Bagel	4. Pocket breads from the Middle East that are round, flat and hollow inside.
E. Tortilla	5. Originally from Australia, this type of bread consists of the basics of many breads – flour, water, salt and sometimes milk. Sometimes baking soda is added as a leavening agent. Damper bread is usually eaten with stew.
F. Bauernbrot	6. Like biscuits but cut into big thick triangles or rounds and baked. They are enjoyed for tea in a country on the island of Great Britain.
G. Scone	7. A Norwegian flat bread made from mashed potatoes, flour and liquid and then fried on a griddle
H. Chapati	8. Sometimes called a farmer's bread, this hearty rye bread in a standard in many southern German homes. Traditionally it baked in age-old, wood fired ovens.
I. Bannock	9. This Aboriginal staff of life was traditionally made of corn and nut meal, and a kind of flour made from ground plant bulbs. While there are many versions and various ways of baking, some recipes have added dried or fresh fruit.
J. Damper	10. Chewy baked roll with a hole, often eaten with cream cheese. Brought to North America by Polish immigrants.

B.L.M 1.2

FOOD AND KITCHEN SAFETY – TRUE/FALSE

1. Raw flour, baking mixes, batters and doughs are not ready to eat and must be thoroughly cooked or baked before eating to prevent illness from bacteria. **TRUE** **FALSE**

2. Wash hands, tools, and surfaces after mixing and handling batter or dough. **TRUE** **FALSE**

3. Tools, work surfaces and equipment need hot, soapy water or the dishwasher. **TRUE** **FALSE**

4. Before working in the kitchen, tie back long hair, remove jewellery, clean work surfaces, wash hands and assemble ingredients and equipment. **TRUE** **FALSE**

5. It is important to wear a clean apron and closed toed shoes. **TRUE** **FALSE**

6. Have a plan for taking hot baking pans from the oven. **TRUE** **FALSE**

7. Use clean hot pads and insulated oven mitts. **TRUE** **FALSE**

8. Cool hot baked goods on wire racks so that air can circulate under the pans. **TRUE** **FALSE**

9. Egg wash glazes should be applied just before the raw food is placed in a preheated oven. **TRUE** **FALSE**

10. Have a good supply of clean tea towels for covering rising dough. **TRUE** **FALSE**

11. Unplug electric beaters or stand mixers before removing the beaters. **TRUE** **FALSE**

12. It is NOT ok to throw a tea towel over your shoulder. **TRUE** **FALSE**

13. If you spill ingredients on the floor, clean up immediately to avoid anyone slipping. **TRUE** **FALSE**

14. Never put your hand into a mixer or any other equipment that has a moving part. **TRUE** **FALSE**

15. Dull knives cause more accidents than sharp ones. Keep knives sharp. **TRUE** **FALSE**

B.L.M 1.3

Baking And Cooking Skills Checklist

PRE-PREPARATION

I CAN:

- ☐ Read and follow a recipe thoroughly
- ☐ Find ingredients easily
- ☐ Locate tools and equipment with ease
- ☐ Demonstrate top notch personal hygiene practices for food and kitchen safety
- ☐ Wash my hands properly

MEASURING BASICS

I KNOW:

- ☐ Kitchen measurements
  - □ Measuring spoons
  - □ Dry measures
  - □ Wet measures
- ☐ How to measure flour, sugar and other dry ingredients including baking powder, baking soda, spices, etc.
- ☐ How to measure water, milk, juice and other liquid ingredients
- ☐ How to measure fat in various ways
- ☐ How to measure brown sugar
- ☐ How to weigh ingredients to achieve the best baking and cooking results

MIXING METHODS

For this project I KNOW:

- ☐ How to proof yeast
- ☐ The muffin or blending method
- ☐ The biscuit/scone method
- ☐ How to make pizza dough

TERMS AND TECHNIQUES

For this project I CAN:

- ☐ Separate an egg
- ☐ Sift dry ingredients
- ☐ Cream ingredients
- ☐ Cut-in ingredients
- ☐ Knead
- ☐ Peel
- ☐ Mince
- ☐ Dice
- ☐ Cube
- ☐ Chop
- ☐ Slice
- ☐ Grate or shred
- ☐ Roll out
- ☐ Boil

EQUIPMENT

I KNOW HOW TO USE THE FOLLOWING SAFELY:

- ☐ Knives of all kinds including pizza cutters
- ☐ Small appliances
  - □ Hand mixer
  - □ Stand mixer
  - □ Food processor
  - □ Food immersion blender
  - □ Electric kettle
- ☐ Microwave oven
- ☐ Range top
- ☐ Oven
- ☐ Dishwasher

MEAL PLANNING

I KNOW:

- ☐ How to plan meals
- ☐ Set a table
- ☐ Dining etiquette

CLEAN-UP

I KNOW:

- ☐ How to compost properly
- ☐ How to recycle
- ☐ How to wash, dry and put away dishes
- ☐ How to use a dishwasher
- ☐ How to store food properly
- ☐ How to clean counters, work surfaces and floors

In this 4-H project I would like to work on:

_____

_____

_____

_____

_____

_____

_____

_____

B.L.M 1.3

Kitchen Dictionary
Some Tools And Terms Relevant To Bread Making

For each of the following terms fill in the missing letters and then add the name of tools or equipment that would be used (where possible)

1. B_ _ _	To cook in the oven	
2. B_ _ _	To mix food hard and fast with a spoon or electric mixer.	
3. B_ _ND	To mix two or more ingredients together until combined in a harmonious mixture	
4. B_ _ _	To cook something until it bubbles fast and keeps on bubbling	
5. B_ _ _ _	To cook food right next to the top heat in an oven	
6. B_ _ _ _	To spread something over food	
7. CH_ _ _ _ _ _ _ _	To cut in thin strips of fresh herbs or lettuce	
8. CH_ _ _	To keep food in the refrigerator until it gets cold	
9. C_ _ _	To cut food roughly into small pieces	
10. C_ _ _ _	To beat butter or shortening until soft, usually with sugar	
11. C_ _ - _ _	To mix shortening or butter into a flour mixture	
12. C_ _ _	To cut food into small squares (1/2 inch)	
13. D_ _ _	To cut food into very small squares (1/4 inch)	
14. D_ _ _ _ _ _	To punch down so that air is released, sometimes using forks to bring sides of dough into centre	
15. G_ _ _ _ _	To cover the sides and bottom of a pan with fat	
16. K_ _ _ _	To fold dough back and forth with the heels of your hand	
17. M_ _ _	To heat something until it turns into a liquid	
18. M_ _ _ _	To cut or chop food into very very small pieces	
19. P_ _ _ _	To make yeast come alive and start growing / To make dough come alive and start growing	
20. SH_ _ _	To cut or tear food into long thin pieces	
21. S_ _ _	To shake flour, icing sugar or cocoa	
22. S_ _ _	To mix food in a circular motion for a long time	

B.L.M 1.3

Kitchen Dictionary
Some Tools And Terms Relevant To Bread Making - ANSWER KEY

For each of the following terms fill in the missing letters and then add the name of tools or equipment that would be used (where possible)

1. Bake	To cook in the oven	Baking dishes, rimmed baking sheets
2. Beat	To mix food hard and fast with a spoon or electric mixer.	Spoon, electric mixer
3. Blend	To mix two or more ingredients together until combined in a harmonious mixture	Fork, stirring spoon
4. Boil	To cook something until it bubbles fast and keeps on bubbling	Saucepan
5. Broil	To cook food right next to the top heat in an oven	Broiler tray or baking sheet
6. Brush	To spread something over food	Pastry brush
7. Chiffonade	To cut in thin strips of fresh herbs or lettuce	French knife or Chef's knife
8. Chill	To keep food in the refrigerator until it gets cold	In plastic containers or bags
9. Chop	To cut food roughly into small pieces	French knife or Chef's knife
10. Cream	To beat butter or shortening until soft, usually with sugar	Stirring spoon or electric mixer
11. Cut - in	To mix shortening or butter into a flour mixture	Pastry blender or two dinner knives
12. Cube	To cut food into small squares (1/2 inch)	French knife or Chef's knife
13. Dice	To cut food into very small squares (1/4 inch)	French knife or Chef's knife or paring knife
14. Deflate	To punch down so that air is released, sometimes using forks to bring sides of dough into centre	Hands, fork
15. Grease	To cover the sides and bottom of a pan with fat	Pastry brush, Wax paper
16. Knead	To fold dough back and forth with the heels of your hand	Floured board or counter
17. Melt	To heat something until it turns into a liquid	Saucepan Microwave safe dish
18. Mince	To cut or chop food into very very small pieces	French knife or Chef's knife or paring knife

B.L.M 1.3

19. Proof	To make yeast come alive and start growing / To make dough come alive and start growing	
20. Shred	To cut or tear food into long thin pieces	Grater
21. Sift	To shake flour, icing sugar or cocoa	Sifter, sieve
22. Stir	To mix food in a circular motion for a long time	Stirring spoon

Meeting 2 – Bread Bread Bread

TRIVIA

Yeast and its properties may have been discovered when ale was accidentally dropped into bread dough. The dough expanded and the product was lighter and larger than previously.

The Romans are credited with inventing the first ovens for making bread. Like crafting pottery, dried, hardened mud was fired repeatedly. Clay ovens were then set in the walls of buildings and heated with fire.

Ships biscuits were a cracker-like food that helped sea travellers survive long ocean voyages. They were shaped like dinner plates, made from pea flour, wheat flour and water, and easily stacked in the ship galleys. The voyages were long, and the biscuits often became infested with weevils and maggots. Travellers would wait until dark to eat so that they wouldn't have to look at what they were eating.

Setting Objectives:

- Describe the ingredients in traditional breadmaking
- Distinguish between leavened and unleavened breads
- Demonstrate techniques used in traditional breadmaking
- Explain the role of bread in a healthy diet

Recipe Management Suggestions

- UNLEAVENED BREAD CRACKERS (MATZA/MATZO/MARZAH) might be made ahead of the meeting. Perhaps a senior participant could take this responsibility.
- There is value in participants experiencing traditional bread making - BASIC WHITE BREAD (TRADITIONAL). Consider making a batch that is completed to the end of the first rising at meeting time. Shape and let rise before baking. Another recipe could be started and finished later.
- The BASIC WHITE BREAD (INSTANT YEAST) makes a good comparison to the traditional and should be able to be completed in the meeting time.
- The MULTI-GRAIN FREE FORM BREAD demonstrates the advantages of using instant yeast. It is time efficient and introduces using more nutritious additions and other techniques.
- While the APPLE CHEDDAR DROP BISCUITS demonstrates more diversity into breadmaking, it may be better suited to Meeting 3.

Suggested Roll Call Questions:

- Why do I think bread is good to include in a healthy diet?
- Something I know about making bread.
- My experience with making bread.

SAMPLE MEETING AGENDA Time: 1 hours 50 minutes

Welcome, Call to order, Pledge Review 4-H Code of Conduct	To be led by club president	5 minutes
Roll Call		5-10 minutes
Parliamentary Procedure	Introductions, Elections and Business	5 minutes
Topic Information, Discussion	Introduction to ingredients and techniques associated with yeast breadmaking. Several activities are suggested. Consider introducing the information and reinforcing concepts in interactive demonstrations.	30 minutes

Recipe Testing	Possibilities: • Unleavened Bread Crackers (Matza/Matzo/ Matzah) • Basic White Bread (Traditional) • Basic White Bread (Instant Yeast) • Whole Wheat Bread • Multi-Grain Free Form Bread • Rye Bread • Apple Cheddar Drop Biscuits • Hamburger Buns	1-1+½ hours
Wrap up, Social time and Adjournment	Participants are to reflect on what they have personally learned from the meeting by recording three (3) Take-Aways. See Page 10 of the Participants Journal. Participants are asked to try one of the recipe suggestions. Log comments in the Participants Journal Page 12.	5 minutes

Content Notes

- The intent of this meeting is to introduce participants to the basic ingredients and techniques of making yeast breads.
- Several activity suggestions reinforce information associated with ingredients and techniques e.g., setting out small bowls to identify possible ingredients.
- Leaders are encouraged to use interactive demonstrations to explain some of the basics. Interactive demonstrations involve participant participation as opposed to leaders demonstrating and participants just watching. This does take a bit of navigating but benefits the hands-on learning. During the interactives leaders have opportunities to highlight key points of information and skills.
- Rising times provide clean-up time and time to try some of the suggested activities.
- Leaders may choose to compare the standard white bread recipe made with dry active yeast and the standard white bread recipe made with instant yeast. Depending on the time, some prep work may be required so that dough is at different stages. For example, participants might make the first part of one of the dry active yeast recipes but then move to the next part using dough that has finished the first rising.
- It should be noted that the move to using instant yeast recipes is very popular. No proofing of yeast is required and usually only one rising. Leaders and participants might find these recipes valuable given time constraints. Many bread makers will insist that the instant yeast recipes do not have the flavour of slow rising and multiple risings of bread dough. Participants should be encouraged to try at least one recipe that does take lots of time.
- A section is included about the relationship of bread in Canada's Food Guide. This can be easily incorporated into any of the meetings. This could be an opportunity for a senior participant to demonstrate leadership.
- Senior participants are encouraged to try KNEADING MORE.

NOTE: There appears to be a lot of content for this meeting. Most of the information can be incorporated into the practical baking parts of the meeting.

Let's Talk Ingredients

Typically, all breads begin with some kind of flour, some kind of liquid, salt, and often sugar. Many breads also contain a leavening agent such as yeast

Try It!

- Prepare small dishes of an assortment of flours and grains
- Number
- Invite participants to identify the items
- Use these for discussion starters and talking points

Let's Talk Flour

A flour is made by grinding or milling seeds or grains such as wheat, rye, oats, corn, spelt and barley, to name a few. The amount of protein in each type and the degree of grinding or milling will distinguish one flour from another and determine its performance in baked goods.

Wheat Flour is the Best Choice

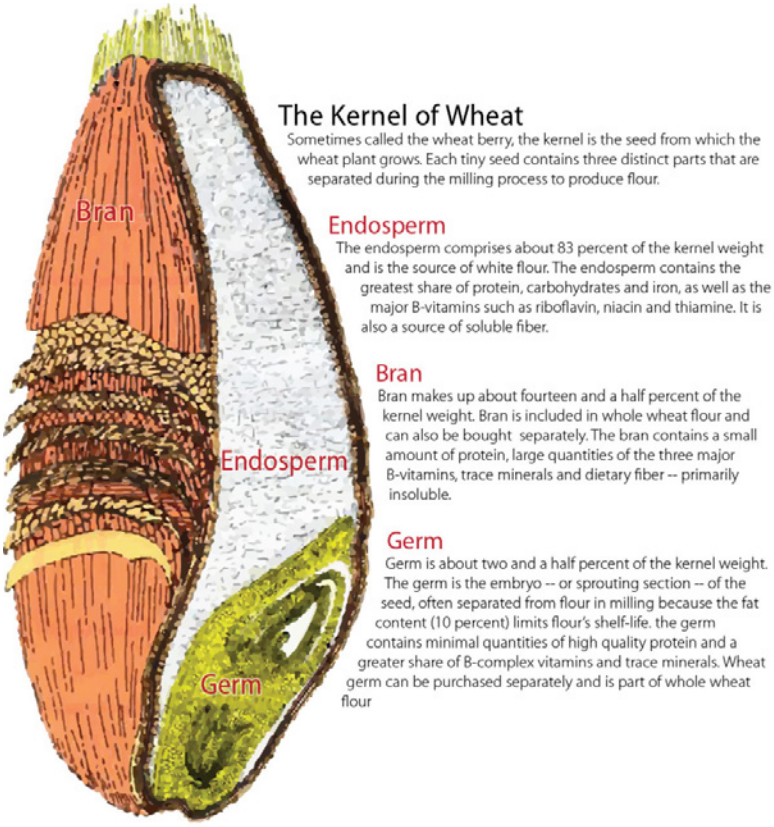
Wheat is the only grain to contain two (2) proteins, gliadin and glutenin, essential for yeast breadmaking. When wheat flour is mixed with a liquid these proteins develop a rubbery network or web called gluten. Think of gluten as tough elastic, a grayish substance resembling chewing gum. Gluten develops when a dough is exercised or kneaded; if that dough contains yeast, carbon dioxide bubbles from the active or fermenting yeast are trapped in the gluten web, enabling the dough to rise and have structure. Baking stops the yeast action, leaving the structure in place. Where gliadin helps in the rising of bread dough, glutenin provides the needed strength and elasticity. Glutenin makes up about half of the protein content in wheat flour.
Flour made from hard wheat tends to be high in gluten and preferred for traditional breadmaking. Well-developed gluten increases the volume of the dough and gives a chewier texture. Soft wheat varieties have low amounts of protein making the flour suitable for other bread-like products such as muffins, scones, and biscuits where the goal is a tender product with a fine crumb.

- **All-purpose flour** is milled from a mixture of hard and soft wheat. This results in a moderate protein content of about 10 to 12%. The amount of protein corresponds to how much gluten is formed when flour meets water.
- **Bread flour** is a high gluten producing ingredient that may contain 14% protein. The amount of protein is determined by the kind of wheat.
- **Whole-wheat flour** may contain 16% protein but the bran in the flour cuts the gluten strands, hindering some of the rising and structure.
- **Rye flours** also have a high gluten content, but the only protein is gliadin. Because glutenin is absent, the dough lacks elasticity. Bread dough made with only rye flour will not hold the carbon dioxide gas and results in small, compact loaves. Recipes that use rye flour often contain all-purpose flour to boost gluten development.

More About Flours

Most flour is white flour. This means that the innermost part of the wheat kernel (the endosperm) is milled and ground into flour. Whole wheat flour contains all parts of the wheat kernel: endosperm, bran, and germ.

All-purpose flour is the most versatile of all the flours. Milled from the starchy innermost part of the wheat kernel (endosperm), white flour is reasonably priced and sold as bleached and unbleached. Bleaching is a process to make flour whiter. In the process some nutrients are removed. If the bleached flour is labelled "enriched", nutrients have been added back into the flour. All-purpose flour can be used in a wide variety of baked goods including traditional bread making and with non-yeast recipes (muffins, scones, biscuits and sweet or savoury quick bread loaves).



Source from: https://flour.com/anatomy-of-a-wheat-kernel/

Self-Rising Flour

This kind of flour is a blend of all-purpose flour, a leavening agent such as baking powder or baking soda (sometimes both), and salt. It is best to only use self-rising flour when called for in recipes

Gluten-Free Flour

Generally, a gluten-free flour is a blend of several flours, starches, and xanthan gum. The latter is important because it imitates gluten in baked goods. More about gluten-free breads later in the project (Meeting #5).

Bread flour is the strongest of all flours in terms of building structure. The extra protein increases bread volume and provides a chewier crumb and a browner crust. Bread flour can be purchased in white, whole wheat, bleached and unbleached forms. Worth knowing is that unbleached all-purpose flour can be substituted for bread flour.

Whole wheat flour tends to be quite high in protein, but gluten-forming ability is compromised by the presence of bran and germ from the wheat kernels. The baked products tend to be dense and heavier. Generally whole wheat flour can be substituted for up to one-half of required all-purpose flour.

There are many kinds of flours available for baking. A trip to a bulk food centre is an experience. Sometimes it is fun to experiment but the best guideline for beginning bread makers is to use the kind of flour (and yeast) recommended in the recipe.

Try It!

Arrange for a visit with a bulk food centre to check out the variety of flours. Look for Red Fife wheat flour, rye, an 8-grain or 12-grain flour, bread flours and gluten free flours.

Experiment. Use a standard bread recipe. Make several recipes but each time change the kind of flour. A whole grain type flour can be substituted for up to half all-purpose flour. A bread flour can replace all-purpose flour. It should increase the volume and produce a chewier end product.

Sprouted Grain Flours

Sprouted flours are not new. Ancestral ways of eating like sprouting and fermentation have sustained cultures around the world. In recent years there has been great interest in the process due to nutritional benefits, digestibility, and taste. Highly controlled facilities manage the sprouting and germination of carefully selected raw grains, seeds, and beans such as wheat, rye, oats, spelt, chickpeas and oats. Milling and flour production follows.

Breads made from sprouted flours tend to have higher volumes and longer shelf life.

To learn the wheat story and how flours are made, go to **What About Wheat** whataboutwheat.ca/about/

Look for 100% whole grain sprouted flour on-line and in health food and grocery stores.

Sprouted Spelt Dinner Rolls

Source: Second Spring

- **450g** Second Spring Sprouted Spelt Flour (about 3 ¾ cups spooned & leveled, see notes above for properly measuring flour)
- **1⅓ cups** whole milk, warmed
- **¼ cup** butter, melted (reduce salt by ¼ tsp if using salted butter)
- **2 tbsp** honey
- **1** egg
- **1½ tsp** salt
- **2¼ tsp** instant Yeast (1 packet)

Directions

1. Cube butter and add to a small pot or microwave safe bowl with the milk. Slowly warm just until the butter melts, stirring often (low on stove or in 20-30 second increments in microwave).
2. In the bowl of an electric mixer fitted with the dough hook, add the milk/butter mixture, honey and egg. Stir until combined.
3. Add the sprouted spelt flour, then salt and yeast. Mix on low speed for 1-2 minutes, until combined. Switch to medium speed and knead for 6-7 minutes. The dough should be smooth, elastic and sticky.
4. Scrape down the sides of the bowl. Cover the dough with a clean tea towel and place in a warm area to rise for 60 minutes. See notes above for warm area tips.
5. Lightly grease a 9x13 baking dish (or two smaller dishes). Turn out dough onto a floured counter and knead a few times to deflate. Divide in 12-15 pieces. The dough will still be sticky, try to add as little flour as possible.
6. Lightly coat your hands in oil to help with sticking while shaping. To shape the rolls, pull the edges up into the center. Flip the dough ball over, cup your hand, and roll it between your hand and the counter to make smooth balls.
7. Arrange the rolls in the baking pan (it's okay if they're touching). Cover with a tea towel and allow to rise for another 30 minutes. The rolls should look puffy and spring back slowly when gently poked. Meanwhile, preheat the oven to 350°F.
8. Bake for 22-25 minutes, until golden. (Optional) After removing from the oven, brush the tops with melted butter. Allow to cool for a few minutes before serving.

Let's Talk Liquid

Liquid is necessary to help yeast and other leavening agents come alive or activate. Activating yeast causes fermentation and the production of carbon dioxide. This makes bread dough rise.

Water is the most used liquid ingredient. When water meets flour, gluten is formed, creating structure and volume. Water also helps dissolve other ingredients such as salt and sugar. Water is inexpensive, too. Tap water is fine although bread purists will say it is good to boil water first to remove impurities. If water is heavily mineralized or chlorinated fermentation of the yeast may be slowed. Usually, water needs to be warmed to help activate dry active yeast. The preferred temperature: 110-120°F (45-55°C).

Milk is another popular liquid ingredient. Milk adds flavour and gives a fine grain or crumb and a softer texture. Crusts are usually darker. Some recipes may call for a full-fat milk to increase flavour but 2%, 1% or skim milk can be used. Powdered milk is an excellent alternative and reasonably priced.

A variety of other liquids might be used depending on the type of bread being made. Buttermilk, sour milk, yogurt, fruit or vegetable juices are other possibilities. Potato water is particularly good. Eggs add liquid, too. They also add flavour, extra nutrition and richness and are often found in sweet breads and rolls.

Let's Talk Salt

Salt is a necessary ingredient in the making of bread recipes. It adds flavour but it also strengthens gluten and regulates yeast activity so that the dough doesn't rise too quickly. Recipes may suggest using table salt, sea salt or Kosher salt. Salt comes from salt mines or the sea.

Try It!

- Prepare small dishes of an assortment of salts.
- Invite participants to identify the items. Most will vary in the size of the grain.
- Use these for discussion starters and talking points.

Some types of salt enhance the final product. Coarse salt adds the perfect finish to soft pretzels and flaky sea salt boosts Focaccia.

Yeast activity may decrease if it comes in direct contact with salt. Be mindful in measuring. Too little salt will result in a dough that rises too fast and a bread that doesn't have structure, flavour or crust colour. Too much can inhibit yeast activity.

Table salt is a mined, fine-grained refined salt. It usually contains iodine which supports the health of the thyroid gland.

Sea salt is the result of evaporating sea water. It has a great taste and is sometimes viewed as a healthier alternative since it is not refined. Sea salts tend to be more expensive and can be purchased in several forms and colours.

Kosher salt tends to be additive free and coarse grained. Originally used in the preparation of meat, many bread makers prefer this kind of salt for its texture and flavour. If a recipe calls for Kosher salt and you only have table salt, use ¾ tsp (3 mL) for 1 tsp (5 mL) of Kosher salt.

Let's Talk Sugar

Sugar is an optional ingredient in bread making but it is usually used as a quick food for activating yeast. Sugar, also:

- Enhances bread flavour
- Gives crust a golden colour
- Improves crumb texture
- Retains moisture

Measuring the correct amount is very important. Too little or too much can inhibit yeast activity. In sweet doughs the amount of yeast is increased to compensate for the extra sugar that is characteristic of these kinds of breads and rolls.

Sugar can take many forms:

White Sugar	Brown Sugar	Honey	Molasses	Maple Syrup
	• Interchangeable with white sugar • Gives a molasses like taste	• Maintains freshness • Breads brown quicker	• Very distinct flavour • Less sweeter tasting than white sugar	• Gives a mild sweet flavour

Experiment It!

Generally, only dry active yeast needs to be proofed.

1. Measure ¼ cup (60 mL) warm water separately into two (2) small bowls. Tap water may be warm enough or use a microwave oven. Temperature should be 110 - 120°F (45-55°C).
2. Stir 1 tsp (5 mL) sugar into one bowl of water. Sprinkle 1 package or 2 ¼ tsp (11 mL) dry active yeast on top.
3. Sprinkle 2 ¼ tsp (11 mL) dry active yeast on top of the second bowl of warm water.

What did you notice?
Did the sugar improve the yeast activation?

Let's Talk Yeast

Yeast is a tiny living microorganism in the fungi family and the magical ingredient that transforms simple ingredients – flour, water, and salt into a delicious staple food.

For the magic to happen the tiny "plants" need to waken from their dehydrated form. With the right conditions, they can do so. They thrive quickly when there is warmth, moisture, and food. As the yeast grows, it produces a gas known as carbon dioxide. In the making of traditional breads bubbles of the gas expand and raise the bread dough. These bubbles become trapped in the gluten produced strands and stabilize when baked.

Yeast  Sugar

- Yeast is a living organism and likes to be treated like we do with food, warmth, and moisture (water).
- When dry active yeast granules are sprinkled on a warm water-sugar mixture, yeast quickly comes alive. This process is called **proofing**.
- Seeing the resulting bubbliness lets you know that the yeast is active and capable of acting as a leavening agent desired in making many breads.
- If a recipe doesn't call for sugar, the yeast will still form from feeding on the breakdown of starch in the flour, but it is

Try It!

BLOW UP A BALLOON WITH YEAST

This experiment shows that yeast, when mixed with water and a little sugar, really does produce a gas (carbon dioxide). If the balloon was bread dough, then the dough would rise and expand like the balloon.

Supplies:

- 1 balloon
- 1 cup (250 mL) warm water-110-120°F (45-55°C)
- 1 1L sized plastic pop bottle, cleaned and dry
- 1 tsp (5 mL) sugar or honey
- 1 package or 2 ¼ tsp (11 mL) dry active yeast
- 1 piece of string or a rubber band
- A mixing bowl
- Warm water

Method:

1. **Stretch the balloon by blowing it up and letting the air out a couple of times. This is kind of like kneading.**
2. **Pour the water into the pop bottle. Add the sugar or honey and swish the mixture around. Add the yeast and swish a little more.**
3. **Put the balloon completely over the opening of the bottle. Secure it in place with the string or the rubber band.**
4. **Fill the mixing bowl halfway with warm water and place the pop bottle in it.**
5. **The yeast will start to grow as it rehydrates. It will bubble and foam. There is the magic. The gas will blow up the balloon much like the gas blows up to make bread rise.**

NOTE: A similar experiment is suggested in Meeting #4.

Types of Yeast

There are several forms of yeast. Most are available in small foil-lined packets. Larger quantities can be found in jars and other packages.

- Be sure to use the kind of yeast and the amount recommended in the recipe
- Check the expiry dates

Active Dry

This yeast comes as tiny pellets made from live yeast cells surrounded by dehydrated cells and a growth medium. To activate, the yeast cells must be rehydrated or "proofed" using lukewarm water. Sugar is commonly added as food to give the yeast a better start.

Instant/Quick Rise

In this form, the pellets are very small and contain more live cells than the active dry form. These pellets are usually combined with the dry ingredients before a liquid is added.

TRIVIA

Stories about "saving the starter" delight culinary historians. The Boudin Sourdough Company in San Francisco, California is the home of one story.

Gold rush miners, the 49ers, brought jugs of starter with them to ensure food for survival. They knew they could make bread with flour, water, and the starter. Legend claims that men slept with the jugs close to their bodies to keep the starter warm.

Entrepreneurs, such as Isidore Boudin, supplied miners with basic needs. It is believed that in lieu of a payment he accepted a jug of starter or mother dough and started to make bread.

In the big San Francisco fire of 1906, the Boudin story tells of miraculously saving the sour dough starter.

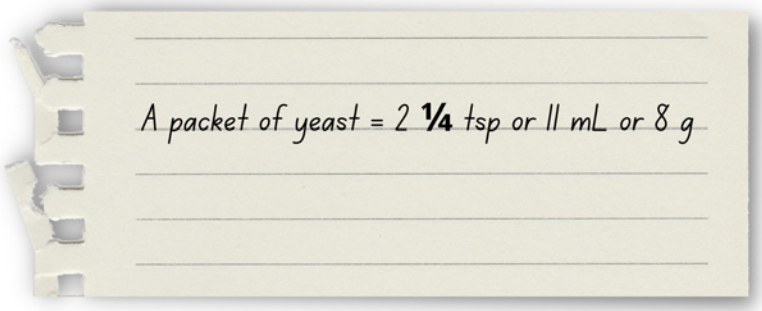
Today this company claims to continue selling sourdough bread made with the original starter from 1849.

Rapid Rise

This kind of yeast is better known as Bread Machine Yeast. It can be mixed directly into the dry ingredients without proofing in warm water. The pellets dissolve very quickly, and the dough rises quickly, too. Some argue that breads made with rapid rise yeast do not develop good flavour and that the breads go stale sooner.

Sponge or Starter

In recent years this form of yeast has grown in popularity although it is the oldest form of bread leavening or rising. A simple mixture of flour and water is allowed to ferment naturally at room temperature and for a period of time. Live culture is drawn from the mixture and from the air to produce a colony of yeasts. The mixture is regularly refreshed by feeding with flour and water and can be kept alive for years. When a small amount of this "sponge" or "starter" is added to fresh dough, fermentation makes the bread rise and adds characteristic flavour and aroma.



Everything You Need to Know About Baking Yeast

Dry yeast is a deactivated single-celled organism that feeds on sugars, It converts them to carbon dioxide and ethanol, making dough rise. Just add warm liquid to activate. All types of dry yeast comes in jars, bags, or individual packets (set of 3). Freeze to extend shelf life.
Most yeasts are interchangeable in recipes-including sourdough-but you have to follow rules for best results.
NOTE: We do not discuss wet yeast (except sourdough), as it is mainly used commercially. Dry yeast is the best option for home bakers.

Active Dry Yeast (ADY)

-Most common type of yeast used in home baking.
-*Least* active dry yeast, highly perishable.
-**Most** recipes written for this yeast *(tho this is changing)*.
-Must be proofed in bowl before adding to dough.
-Use water between 105F-115F to proof. (*Very* temp. sensitive!)
-Needs two rises. Best for long or cold rises.

Instant Yeast

Also called: instant active dry, instant rise, perfect yeast.
-A dry yeast w/smaller granules than ADY for better activation. Easiest to use for home bakers (recommended).
-Needs only one rise.
-Activate in warm water up to 130F.
-Does not require proofing--add directly to dough.
-Needs just one rise, tho usable for long, cold, and double rises.
-To sub for ADY, add directly to dough. Use 25-30% less than ADY.

Rapid Rise Yeast

Also called: quick rise, rapid rise, fast-acting instant, bread machine yeast.
-An instant yeast with even faster activation. Needs only one rise,
-Activate in warm water up to 130F.
-Does not require proofing--add directly to dough.
-Not good for cold-proofing, long rises, or double rise recipes.
-Interchangeable for bread machine yeast.
-If subbed for instant yeast, go by visual cues (do not follow recipe times).
-NOT an ideal sub for ADY but follow rules for instant yeast if you do.

Sourdough Starter

-A yeast you keep alive in your refrigerator by feeding.
-Must remove from fridge and feed several hours before it's ready to use ("active").
-Can sub for dry yeasts, but may require experimentation.

Tips for Using and Substituting Yeasts

-1 package ADY, Instant, or Quick Rise Yeast = 2.25 tsp = 7 grams = 1/4 ounce= (app.) 1 Cup sourdough starter.
-If subbing ADY for instant or quick rise yeast, *must* be proofed in separate bowl before adding to dough. Use liquid from the recipe--*do not add extra liquid.*
-ADY requires more than one rise; instant and quick rise yeast need only one rise. I.e., rise in dough pan, then bake.
-Use 25-30% less instant yeast than ADY--Varies by recipe and requires experimentation. Also OK to use full amount (but usually not needed).
-For sweet doughs: Do not reduce yeast for doughs that are 5% sugar or more by weight--or use osmotolerant yeast like Saf Gold.
-For best results, do not sub quick rise yeast in an ADY recipe.
-Always use correct water temp for best results.
-Weigh ingredients--do not rely on measuring cups--for best results.

THERATIONALKITCHEN

A Little More About Yeast!

Because of improvements in yeast properties and potency by manufacturers, the amount of yeast in packets has decreased. Older recipes call for 1 tablespoon or 1 packet of active dry yeast. Newer yeast packets contain 2 ¼ teaspoons of yeast. The amount of yeast can be reduced in any older recipes by substituting 2 ¼ teaspoons per tablespoon of yeast.

Active dry yeast can be substituted for instant yeast. Use 2 ¾ teaspoons of active dry yeast in recipes calling for 1 packet of instant yeast.

Use only 1 ¾ teaspoons of instant yeast when substituting instant for dry active.

Other Leavening Agents

For quick breads, biscuits, scones and muffins, chemical leavening agents such as baking powder, baking soda and cream of tartar work in balance with heat and moisture to release carbon dioxide gas resulting in the rising of baked goods.

Chemical Leavening Agents

- Single acting baking powder contains tartaric acid or cream of tartar which causes the release of carbon dioxide at room temperature. Baked goods must be baked quickly to avoid the losing of the gas.
- Double acting baking powder releases a small amount of gas when first mixed with other ingredients and more when the mixture is heated.
- Baking soda needs some sort of acid in the dough or batter to release carbon dioxide gas. Some of those acid containing ingredients include honey, buttermilk, sour cream, molasses, or cocoa. Ingredients need to be stirred together quickly and baked quickly so as not to lose the carbon dioxide.

Not All Breads Are Leavened

Some breads are made without any leavening agent. Generally, these are a type of flatbread although some flatbreads contain rising agents. Some unleavened breads have religious significance. For example, Jewish people eat matzo during Passover to commemorate the flight of the Israelites from Egypt. Roman Catholics and other religious denominations take communion with unleavened bread or wafers. Tortillas, roti and arepas are other unleavened breads.

Let's Talk About Basic Techniques

Breadmaking has evolved to a wide variety of food products. From unleavened breads and crackers to breads made with starters and sponges to breads using traditional dry active yeast to breads made with instant or fast rising yeasts to bread-like products such as pita, naan, pretzels, biscuits, scones, muffins, and more, the knowledge and skills required for preparation are vast. Here are a few things to get started.

Please note that some of the following information will only apply to some breadmaking recipes. More information will be presented with specific topics later in the project.

Proofing Dry Active Yeast

Dry active yeast needs a little head-start to activate and get going. The process is simple and ensures that the yeast is fresh enough to be using and that it will grow. If the yeast does not grow, it is likely old and needs to be composted.

Step 1: Measure warm water - 110 - 120°F (45-55°C) into a measuring cup or small bowl. Test temperature using a food safe thermometer. If the water is too hot, the yeast will die.

Step 2: Sprinkle a little sugar into the water. Stir to dissolve.

Step 3: Slowly sprinkle the yeast over the water. Every tiny particle must get wet to soften the yeast cells and to start growth.

Step 4: Let the yeast stand for about 10 minutes until the granules swell and the mixture becomes foamy and bubbly. This will indicate that the yeast is alive and capable of leavening the bread dough.

Experiment It!

Check water temperatures by heating cups of water in the microwave oven for different lengths of time. Use a food safe thermometer. The goal of this activity is to see the difference in warm temperatures used to activate yeast.
Dry active yeast needs to be proofed with water 100 –110°F (38 - 43°C)
Instant yeasts need warmer liquid - 120–130°F (49 - 55°C).

NOTE: Times can vary with different microwave brands and sizes of ovens. The time of the day can also have an effect.

After Proofing

Once yeast is proofed, other liquid ingredients are added. These should be at room temperature. Some flour is usually added at this point, too. The mixture may be stirred by hand or mixed with an electric or stand mixer. Remaining flour usually needs to be kneaded in by hand although stand mixers may replace the job of kneading. The important thing is that the gluten network begins to develop.

Instant Yeasts – No Proofing Required

- Instant and rapid rise type yeasts are added directly to the dry flour mixtures.
- Hot liquid - 120 - 130°F (49 - 55°C) is stirred into the dry ingredients to produce the sponge or ball of dough that requires kneading.
- These kinds of yeasts have become very popular because time is not required to proof the yeast.
- Breads made with instant yeasts usually only require one (1) rising time.
- Those who make bread often say that breads made with instant yeast do not keep as well as those made with the active dry yeast, nor do they have the flavour that comes from traditional yeast and methods.

Kneading

Kneading develops the gluten network as gluten strands are stretched and expanded enabling the dough to hold carbon dioxide gas bubbles produced by the yeast.

Kneading is about working the dough until it is smooth and elastic. A food processor or a stand mixer can accomplish the task, but the handwork is fun, and perhaps therapeutic.

By hand, the technique involves a press-push-fold-turn action. The dough needs to be pressed down with the palms of both hands and pushed away from the body. The dough is then folded in half, given a quarter turn and the process repeats. Well kneaded dough is smooth, and elastic. It does take some time usually about 10 minutes. Add as little extra flour as possible if the dough becomes too sticky to handle. Be patient and enjoy the process because it is necessary for success.

Try It!

Participants may find using balls of playdough a good way to practice kneading.

Some Other Useful Tips:

- ✔ Use a counter or table that fits your height, otherwise the process becomes very tiring. Arms need to extend downward so that the palms of the hands rest flat on the surface while standing up straight.
- ✔ Make sure the counter area is clean. Consider using a mat designed for rolling or kneading.
- ✔ Sprinkle a little flour on the surface before dumping out the dough. Dust clean hands lightly with flour. Form the dough into a ball before beginning to knead.
- ✔ If the dough becomes sticky, sprinkle a little more flour, about 1 tablespoon (15 mL) at a time, over the dough and roll the ball around a little.
- ✔ Put on some music and dance the time away. Set a timer as a guide. With practice you will be able to tell when the dough is kneaded enough.
- ✔ Some bakers like to use the "windowpane test" to see if their dough has been kneaded enough. Stretch a bit of dough between your fingers and hold it up. It should be thin enough to see through it without breaking. If it tears, do some extra kneading.
- ✔ When you think the dough is sufficiently kneaded, press palm firmly into the dough. If the impression fills in quickly, the dough is likely ready for its first rising.
- ✔ The amount of flour given in a recipe is only a guideline. Various factors can affect the amount used. Humidity and the time of the year are big factors. More flour may be needed in warm summer months. Some brands of flour work better than others.
- ✔ Whole wheat bread doughs will be rough and pebbly, not smooth and elastic like doughs with white wheat flour.

Ready To Rise

Once the dough has been kneaded, it is ready for fermentation. In this process yeast feeds on the starches in the flour producing carbon dioxide and alcohol. Most of the alcohol evaporates. The resulting gases become trapped in the gluten strands causing the bread to swell and increase in volume. In this time the bread develops flavour, elasticity, and structure. Fermentation is complete when the dough has doubled in size – usually 1 -2 hours for dry active yeast products, less time for instant yeast products.

- ✔ The dough needs to be cosy. A warm and humid place with no drafts will make for even rising.
- ✔ Often dough will be rubbed with a little oil to prevent the top drying out. Then the dough is placed in a clean greased bowl, covered with plastic wrap or greased wax paper or a clean damp tea towel and placed in a warm place.
- ✔ An oven with only the light on is a good spot for rising dough. Some bread makers like to put a pan of boiling water underneath the bowl of dough. Using a small saucepan works well. Simply boil about 2 cups (500 mL) water and then set the saucepan on the lower rack of the oven.
- ✔ Bread dough can be over-proofed. To see if fermentation is complete insert two (2) clean fingers into the dough up to the first knuckles and then remove them. If the finger pressure leaves a slight impression and the dough closes very slowly, fermentation is complete.
- ✔ Careful with the covers. Rising bread doughs generally need to be covered because humidity promotes yeast growth. Some research recommends lightly sprayed or greased plastic wrap. These options are not environmentally sound. Clean, damp tea towels may be a good option.

Investigate!

What makes the best cover?
What alternatives are there to plastic wrap?
How might sticking be prevented?
What can be done with a tea towel covered in sticky bread dough?

Invite participants to research these questions throughout the project. Encourage critical thinking in their investigations.

The Punch

Deflating the dough is fun. Make a fist with your well-washed and dried hand and gently plunge it into the centre of the dough. Poof! The dough will collapse as some of the built-up carbon dioxide is released.
Punching fulfills some other important actions:

- Cooler exterior surfaces are moved to the middle and helps to even out the temperature in the dough.
- Oxygen from the air is incorporated.
- Handling the dough strengthens the gluten.

Some bread makers prefer to deflate the dough by gently dumping the risen dough onto a lightly floured surface and folding the edges of the dough into the centre before shaping.

Shaping the Dough

Most recipes that use dry active yeast proceed to shaping the dough and then allowing the dough to rise a second time.

Most recipes that use dry active yeast proceed to shaping the dough and then allowing the dough to rise a second time.
Three (3) ways to shape dough:

1. **Jelly-Roll:** Place the dough, smooth side down and roll out to a rectangle. Pinch out blisters; these form the holes that let jam drip through. Starting at the short side, roll up the dough jelly-roll fashion. Seal the final edge by pressing it into the dough with the heel of your hand. Turn seam-side down. Tuck each end under the roll. Place in greased baking sheet or loaf pan.

2. **Half-Oval:** Pat the dough into an oval. Fold the oval in half, pinch the seam tightly to seal it, tuck the ends under and place seam-side down in the greased baking sheet or loaf pan.

3. **Free-Form:** Shape the dough into a round, flatten it slightly on top and leave it as is on the greased baking sheet.

The Second Rising

While many traditional bread recipes proceed to shaping and rising a second and final time, some call for a third rising. The yeast has plenty of life and the second and third risings only take about half to two-thirds as long. A second rising makes for a finer-textured bread.
Baking

Most breads are baked in hot ovens. At high temperatures the gas bubbles expand rapidly causing the loaf to rise very quickly during the first 15 minutes of baking. This is called oven-spring and is responsible for the bloom or the puffing at the top.
There should be a well-defined division between the top and the sides of a loaf. This is called the "break". Sometimes when the bloom is large, the bread will have a shredded appearance on one or both sides of the loaf. This is the sign of a good loaf of bread.

The Hollow Log Test

1. Using oven mitts, turn out the loaf.
2. Turn over and rap your knuckles on the bottom. If it sounds like a hollow log, the bread is done. If there is a dull thud, it is still like porridge and needs more baking.
3. If the loaf is not done, return it to the oven but set it on the rack – out of the pan. Set the loaf on its side; this should allow it to brown and crisp up.

Cool It

Hot bread does not cut easily, as tempting as it might be to have a taste. Cool baked loaves on a wire rack where air can circulate on all sides. If loaves are left in the pans, the loaves will steam and become soggy without air circulation. Be sure to use a serrated knife, one with a jagged edge, for slicing. An electric carving knife is perfect for hot, fresh bread.

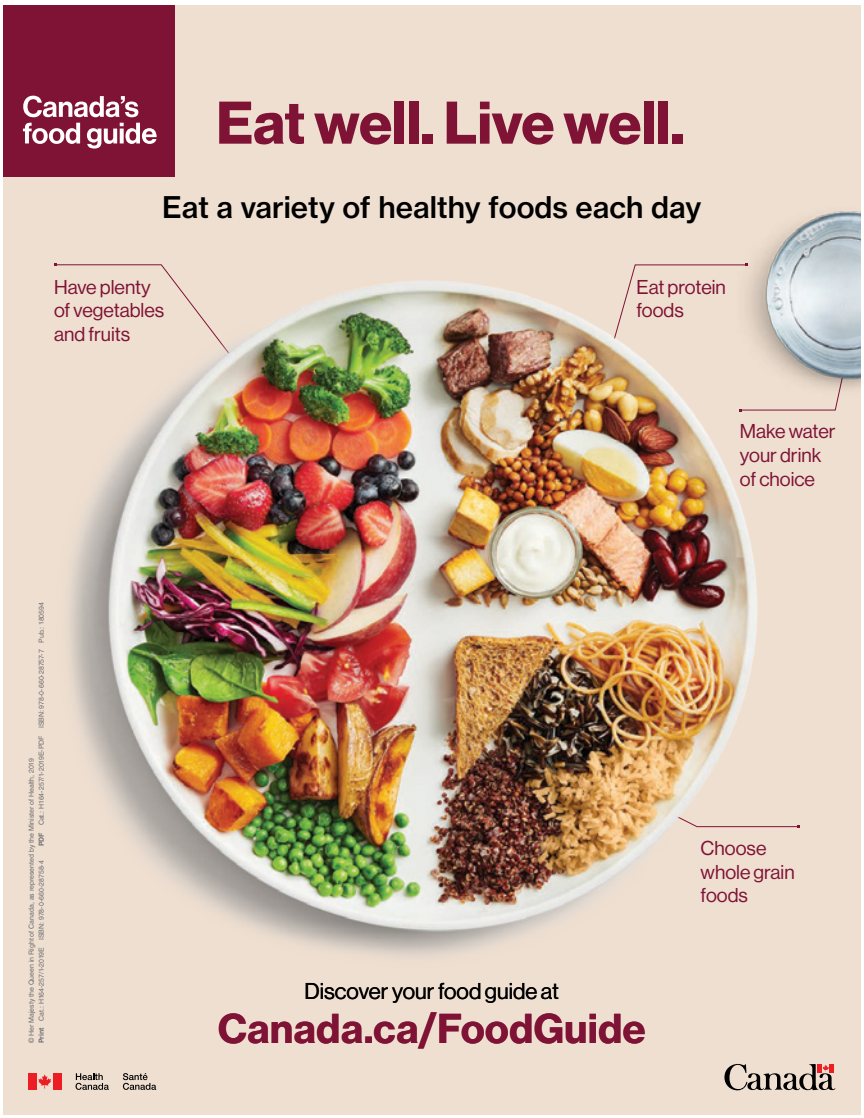
Let's Talk Cleanup!

- Clean up as you go along. Keep a damp dish cloth handy to wipe up spills.
- Mixing bowls with bits of dough need to be soaked in cold water immediately after use.
- Use a bench scraper to collect any bits of dough from working surfaces.
- The floor likely needs a good sweep.

Enhancing The Crust

- Artisan and chewy style crusts need steam and then dry heat. A heated Dutch oven pot facilitates this process.
- Dusting with flour makes for a rustic, country loaf.
- Brushing the loaf with an egg wash just before baking gives a golden, soft crust. Use a whole egg or just an egg white blended with one (1) tablespoon or 15 mL water. Be sure to refrigerate or freeze the leftover egg wash to use in scrambled eggs or casseroles.
- A milk wash brushed on during the last few minutes of baking gives a glossy brown, soft crust.
- Sprinkle seeds, nuts or grains over an egg wash to add texture, nutrition and eye-appeal.
- Slashing the top of the loaves with several diagonal slashes adds to the overall appearance of the bread. Use a sharp knife and cut about ¼" (1 cm) into the risen dough just before baking.

Bread – A Part of Canada's Healthy Eating Guidelines



Try It!
Judging Activity

Set up a class of store-bought breads. Ask participants to rate the choices according to the healthy eating recommendations suggested by Canada's Food Guide.

If more information about reading labels is required go to:

https://www.unlockfood.ca/en/Articles/Nutrition-Labelling/Understanding-Food-Labels-in-Canada.aspx

A senior participant could do a brief presentation about understanding food labels prior to the activity.

Selecting whole grain foods is part of the healthy eating guidelines set out in Canada's Food Guide. Choosing whole grain bread, pasta, rice, and other carbohydrate foods provides important nutrients such as fibre, vitamins, and minerals. Whole grain foods are a healthier choice than refined grains because whole grain foods include all parts of the grain. Refined grains have some parts of the grain removed during processing.

Whole grain foods have more fibre than refined grains. Eating foods higher in fibre can help lower the risk of stroke, colon cancer, heart disease and type 2 diabetes.

Healthy Eating is More than the Foods You Eat

Canada's Food Guide promotes other key messages:

- Be mindful of your eating habits
- Cook more often
- Enjoy your food
- Eat meals with others
- Use food labels
- Limit foods high in sodium, sugars or saturated fat
- Be aware of food marketing

KNEADING MORE

FIBRE – WHAT'S ALL THE FUSS?

Canada's Food Guide recommends that Canadians consume more whole grain foods because these contain fibre and important vitamins and minerals. What is fibre? How do foods such as breads provide opportunities to consume more fibre? Choose at least three (3) questions to guide a little research. Then read labels to compare fibre content in a variety of breads and rolls.

What is fibre?	Why should we eat high-fibre foods?	What are the best sources of fibre?
What is soluble fibre? Insoluble fibre?	How much fibre should a person consume?	What is "high-fibre"?
How can food labels be used to make fibre choices?	How can we consume more fibre rich foods?	What some helpful tips to remember when choosing high-fibre foods?

What did I learn?

Question:	**Question:**	**Question:**

Use the list of ingredients and the Nutrition Facts table to compare three (3) breads. Which bread would you choose if you were trying to boost your fibre choices?

Bread #1 – Kind	**Bread #2 - Kind**	**Bread #3 - Kind**
Ingredients	Ingredients	Ingredients
Nutrition Facts Table (grams/% Daily Value)	Nutrition Facts Table (grams/% Daily Value)	Nutrition Facts Table (grams/% Daily Value)
Any Other Information?	Any Other Information?	Any Other Information?

Conclusions:

YOURSELF

Based on the information learned in this meeting, how many of these questions can you answer?

1. Why might bread flour be preferable for making bread? (Higher protein content)
2. What gas is produced by fermentation? (Carbon dioxide)
3. What yeast is often proofed? (Dry active)
4. Why is instant yeast often preferred? (No proofing required, usually only one rising)
5. What does kneading do? (Develops gluten)

Meeting 3 – Variations On A Theme

Setting Objectives:
- Describe tools and equipment relevant to breadmaking
- Describe pre-fermenting techniques such as poolish and the characteristics of these breads
- Distinguish characteristics of sourdough, no-knead and batter breads
- Critique the marketing of "artisan" breads

Suggested Learning Outcomes:
- Batter bread recipes can be completed within the regular meeting time.
- Consider making poolish with the participants and then sending it home for someone to make the French Country Bread using poolish.
- Rustic Bread #1, Refrigerator Crescent Rolls and Trois Baguettes could start from refrigerated dough that has been previously made.
- If choosing to do Rustic Bread #2, the dough will need to have been made previously – 8 to 24 hours and sitting at room temperature.

Suggested Roll Call Questions:
- The bread recipe I tried since the last meeting and how I got along
- Something I remember about making bread
- A way I can incorporate whole-grain bread into my daily meals and snacks

SAMPLE MEETING AGENDA Time: 1 hour 40 minutes

Welcome, Call to order, Pledge		5 minutes
Roll Call		5-10 minutes
Parliamentary Procedure	Minutes and Business	10 minutes
Topic Information, Discussion	Let's Talk Tools and Equipment Preferments (poolish, biga and sour dough) No-Knead Breads Batter Breads Cold Fermentation What's In A Name? "Artisan" "Rustic"	15 minutes
Recipe Testing	• English Muffins In A Loaf (Batter) • Cheese Bread (Batter) • French Country Bread Using Poolish • Pizza Dough Using Poolish • Rustic No-Knead Bread #1 • Rustic No-Knead Bread #2 • Refrigerator Crescent Rolls • Trois Baguettes	1 – 1 ½ hours

Wrap up, Social time and Adjournment	Participants are to reflect on what they have personally learned from the meeting by recording three (3) Take-Aways. See Page 10 of the Participants Journal. Participants are asked to try one of the recipe suggestions. Log comments in the Participants Journal Page 12.	5 minutes

Content Notes

- This meeting expands some of the basics learned in Meeting #2. Begin with a short session on tools and equipment. Use this session as a time to re-visit several breadmaking basics. Familiarize participants with additional tools and equipment that might be fun to have and use but not necessary. We can often make do and improvise.
- Discuss preferments (poolish and biga; also, sour dough), no-knead breads and batter breads. Some of these do require long waits and rises. There should be no problem completing either of the batter breads in the meeting time.
- Recipes have been developed to demonstrate various techniques used in breadmaking. These are more time consuming, but they do produce delicious results. Some suggestions have been given above to help with time constraints.
- The notions of “artisan” and “rustic” are confusing and misleading. See the suggested activity on page 59. Consider purchasing commercial products for sampling.
- KNEADING MORE includes a costing activity that invites participants to determine the costs of tools and equipment. There is also an activity to determine the cost of making a loaf of homemade bread. Participants can then compare this to the cost of a store-bought bread. Consider trying these activities when waiting for dough to rise. Pair participants to work together to complete the activities. Internet access will be useful.
- Again, participants are required to try a recipe at home that demonstrates an understanding of the meeting content. Urge participants, particularly senior participants, to work through the process of one of the longer recipes so that they can assess the differences and comment on the experiences.

Let's Talk Tools And Equipment

Try It!

Before conducting the community circle, invite participants to create a line with oldest at one end and ranging to the youngest at the other end. They can then create the circle beginning with younger participants and moving along to older participants.

Community Circle

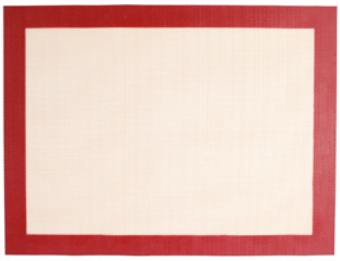
Invite participants to name a tool or piece of equipment used in breadmaking and to explain how it is used. An item should only be named once and so the activity becomes more challenging as it goes along. Leaders may choose to have younger participants respond first with older participants going later. Alternatively, create a display of tools and equipment used in breadmaking. Invite participants to choose an item and to explain how it might be used. If possible, add some unusual items to stimulate discussion and to increase awareness.

Typical Tools And Equipment

Liquid measuring cups	Dry measuring cups	Measuring spoons	Wooden spoon
Mixing bowl – preferably glass, crockery or stainless steel	Dough scraper	Fork	Serrated knife
Clean tea towels	Rolling pin	Loaf pans of various sizes	Baking sheets
Oven mitts	Food Safe Thermometer	Wire racks	Dinner knife
Prep Bowls	Parchment Paper	Dessert-sized spoon	Straight edge

Liquid measuring cups For activating yeast and measuring liquids such as water or milk	**Dry measuring cups** For measuring ingredients	**Measuring spoons** For measuring ingredients	**Wooden spoon** For mixing ingredients
Mixing bowl – preferably glass, crockery or stainless steel For mixing ingredients and for rising dough	**Dough scraper** For cleaning bowl and counter or kneading mat, may be used to cut dough, too	**Fork** For stirring ingredients especially proofed yeast	**Serrated knife** For slashing risen dough to allow some gases to escape
Clean tea towels For covering dough for rising and resting and for clean-up	**Rolling pin** For rolling out dough before shaping	**Loaf pans of various sizes** For baking – important to know what size fits recipe	**Baking sheets** For baking free-form loaves
Oven mitts For removing hot pans from the oven	**Food Safe Thermometer** For testing water temperatures when proofing yeast and when adding liquids	**Wire racks** For cooling finished bread products	**Dinner knife** For levelling flour measures and sometimes cutting dough
Prep Bowls Small bowls for measured ingredients (mise en place)	**Parchment Paper** Grease proof paper that provides a heat-resistant, non-stick surface to bake on.	**Dessert-sized spoon** A large piece of cutlery used in filling a dry measure with flour	**Straight edge** A metal spatula or dinner knife to level off measured flour

Other Useful Equipment In Making Breads

 Bench or Dough Scraper for cutting and for scraping bits of dough from kneading surface	 Dough whisk for mixing ingredients	 Scoring lame (pronounced LAHM, meaning “blade” in French) for slashing bread tops to allow gases to escape
 Proofing basket to support rising dough	 Enamel Dutch Oven for baking artisan style breads	 Baguette baking pans
 Pastry brush for brushing on melted butter and other toppings	 Stand mixer for mixing and kneading dough	 Silicone Baking Mat for kneading and preparing dough

Variations On A Theme – Preferments

Quick and easy cooking and baking has become the norm. For breadmaking this has meant the movement to and the popularity of instant yeasts with no proofing and reduced rising times. There is, however, the slow bread movement much like slow food and slow fashion. Knowing and using preferments and slowing the process changes the approach to breadmaking. The extra time enhances quality and overall bread appeal.

Preferments offer "head-starts" or starters in fermentation. A preferment (pre-fur-ment) is a dough mixture that is prepared separately and ahead of the bread dough. It is allowed to ferment before being stirred into other bread dough ingredients. Preferments use simple ingredients: wheat flour, water, and a tiny bit of yeast.

The main drawback is that the process takes time; on average 16 hours of fermenting time alone. Planning is needed to accommodate the lengthy process. On the other hand, the slow fermentation has huge benefits in flavour, texture and keeping qualities. Some experienced bakers claim that the resulting flavours cannot be achieved with the usual leavening methods. Some research suggests that long fermentation aids in digestion.

Preferments is an over arching term for several specific types of starters. **Poolish** and **biga** are most popular.

Poolish is pronounced pool-eesh not pool-ish. French bakers named this starter process because it originated in the 1840's in Poland and then spread to Austria and to France. The method began as a way to save money because yeast was very expensive at the time. Today poolish is prized for the flavour and taste it adds to bread.

Poolish is made of a mix of equal parts flour and water (by weight) and a tiny bit of yeast. It is a very loose, liquid mixture because of the ratio of flour and water. After combining the ingredients, the poolish needs to ferment at room temperature for 15 – 18 hours before being added to regular bread dough ingredients. Further time is needed for kneading and several rest and rising stages.

Biga is an Italian term for preferment. This preferment is much stiffer than poolish with a ratio of two parts flour to one part water. Like poolish there is no salt, only flour, water, and a tiny bit of yeast. Like poolish the mixture is allowed to ferment for several hours and as long as 12 – 16 hours. This starter is used in the making of ciabatta and other Italian breads.

Try t!

Kensington Sourdough starter can be ordered on-line. This might be a fun way to get 4-H participants interested in sourdough. The cost is nominal. Instructions are clear and easy to follow. Go to: https://kensingtonsourdough.ca/

Sourdough is another type of preferment.

Poolish and biga use a tiny bit of packaged yeast to start the fermentation along with the flour and water. Sourdough starter, however, draws wild yeast from the natural environment to begin the fermentation. The naturally occurring yeasts and bacteria have the capacity to both leaven and flavour – very distinctively – the bread.

To create the starter a small paste is made using flour and water. The mixture is left at room temperature, slightly covered, so that yeast organisms from the air are drawn to the paste. This is freshened each day for several days with new food (flour) and water. Microorganisms ferment and multiply. Once this ripe starter is established, a small portion is taken off to be fed and cared for with additional flour and water while the rest is used to make bread. In this way the same sourdough starter can continue for weeks, months and even years. If the starter is fed and cared for it can last indefinitely. Making the initial starter is a slow and patient process. It can take anywhere from 5 to 14 days.

Try it!

Sourdough breads have become extremely popular. The process is tricky and requires lots of experimentation and practice.

- Consider inviting a community participant experienced in making sourdough starter and sourdough breads to a meeting.
- Some participants might be interested in making their own starter and dividing it among the club. A leader may do this, too.
- Have a taste testing session with purchased sour dough breads.
- Visit a bakery that specializes in sourdough products.

Variations On A Theme – No-Knead Breads

No-knead breads revolutionized breadmaking. Although this way has been known and practised for years, it became extremely popular in the early 2000's when food columnist, Mark Bittman, wrote about the method in the New York Times. He later suggested that this would change the culinary scene forever and so it has.

No-knead breads begin by combining flour, yeast, and salt. Water is added, and the mixture is stirred well. The dough sits at room temperature overnight or for at least 12 to 18 hours before being shaped, allowed to rise, and baked. Little, if any, kneading is required.

For best results a preheated Dutch oven type of cooking pot and a high oven temperature are required. A Dutch oven is a large cast iron pot with a heavy, tight-fitting lid. See RUSTIC NO-KNEAD BREAD #2. A baking sheet can give good results. See RUSTIC NO-KNEAD BREAD #1.

Extra humidity whether from the tight fitting lid of the cooking pot, or from a pan of steaming water placed on a lower oven rack, results in a very crispy crusted bread with an open, airy crumb and a tender, very chewy texture. This is often described as "artisan quality".

How Does This Method Work?

Gluten development gives bread texture. Gluten strands are developed through very long fermentations. These fermentations replace the usual kneading.

Baking with a very high temperature and using a very hot pre-heated Dutch oven style pot increases the intensity of heating and the cooking of the bread dough. The covered pot also increases the humidity.
Professional bakeries use s
team-injected ovens to increase humidity. Moist air transfers heat more efficiently than dry air. That is why home bakers often add a pan of hot water to the oven when baking bread.

Pros And Cons For No-Knead Breads

Pros	Cons
• Less physical effort • Simple ingredients • Crispy, golden crust • Open airy crumb • Tender, chewy texture • Attractive Artisan or rustic appearance	• Time required for fermentation (12 – 18 hours) • A sticky, wet dough which is challenging to handle • Uses a very heavy pre-heated pot and high oven temperatures • Raw dough is dropped into the hot pot, safety concerns • A warm ferment produces a sour, yeasty flavour which may not be as flavourful as other methods

Variations On A Theme – Batter Breads

Batter breads resemble No-Knead breads in that there is no kneading.

- The batters tend to be quite thick with larger amounts of yeast to stretch the gluten so that the bread will rise effectively.
- The method involves vigorous beating to develop the gluten strands. An electric mixer or beater is the best tool to use. Doing this by hand takes lots of strength.
- The resulting batter must be stiff, some say a spoon needs to be able to stand up in the batter.
- The texture of a batter bread is not as refined as that of a bread that is kneaded. The crumb tends to be open and airy.
- Try the ENGLISH MUFFINS IN A LOAF or the CHEESE BREAD as examples of batter breads.

Cold Fermentation

In breadmaking fermentation happens when yeast converts sugar to carbon dioxide and alcohol (in the absence of oxygen). This causes dough to rise.
Cold Fermentation or fermenting dough in a cool area such as a refrigerator increases convenience and more importantly, flavour. The process, known as retarding the dough, slows down the final rise with colder temperatures.
Dough can be prepared and stored in the refrigerator until needed, often for several days. Cold dough is also much easier to handle and shape because gluten gets stiffer as it cools. The cooler temperatures and slow ferment produce a richer, more malt-like flavour as opposed to a sour, yeasty flavour which comes with a warm ferment.

Cold dough requires time to come to room temperature before baking.

- Many breads can be retarded for 12 -18 hours.
- Some recipes can be held for longer although the dough will lose some of the rise if left too long.
- When a recipe calls for an overnight rise, this usually means 12 hours.
- Whole grain and rye bread dough do not retard well.

The recipe for REFRIGERATOR CRESCENT ROLLS can be used to demonstrate this technique.

What's In A Name? Artisan? Rustic?

A visit to a grocery store bakery or a local café and bakery often reveals stunning collections of "artisan" breads. But what does "artisan" mean? What does "rustic" mean?
Labels like "artisan" and "rustic" have no clear definitions and may be clever marketing. They have, however, become associated with some of the following:

- Made with simple ingredients – flour, water, salt, and yeast
- Loosely or freely shaped, not placed or baked in tin bread pans
- Possessing a short shelf-life, offered in open packaging or loose in baskets and implying the need for immediate eating
- Long fermentations with several rising times
- Enhanced flavours and textures given slow risings and rest periods
- Less yeast and more reliance on time to let the dough rise slowly
- Handmade, no mass production, highly trained and well-apprenticed bakers
- No comparison to the taste and texture of store shelf/supermarket packaged breads

KNEADING MORE

Bread Making Budgeting

What are some of the costs associated with breadmaking? Let's face it, it is easy to go to a grocery store and buy a loaf of bread.

What does it cost to make a loaf of bread?

1. Find out the costs of the basics: all-purpose flour, instant yeast, milk, sugar, salt, butter. You will need to do some research to determine the actual costs for 1 cup, or 1 tablespoon, etc. This can be tricky. Many ingredients are sold in metric measures; therefore, conversions are needed. Use the Internet to help with conversions.
   For example:

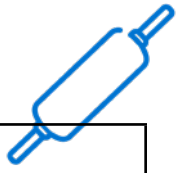
10 kg all-purpose flour	22 lb	1 lb	(1 lb = 3 2/3 c) 1 c	6 ½ c
$20.50	$20.50	$ .93	$ .26	$ 1.69

2. Use a basic recipe for white bread e.g., Basic White Bread (Traditional) pg ___
3. Calculate the cost of each ingredient. A chart like the above will help.
4. What is the cost of one loaf of bread? (Remember the recipe makes 2 loaves).
5. How does the cost compare to the cost of a loaf of white bread in a grocery store?
6. What other factors need to be considered in making the decision to make homemade bread or to buy store bought?

What are the actual costs of tools and equipment used in bread making?

Liquid measuring cup • 4 c/1 L • 1 c/250 mL	$	Dry measuring cups	$
Wooden spoon	$	Dough scraper	$
Large mixing bowl	$	Dinner fork Dinner knife	$ $
Serrated knife	$	Tea towel	$
Rolling pin	$	Loaf pans • 8 x 4 x 2 ½" (20 cm x 10 cm x 6 cm) • 8½ x 4½ x 2½"(21 x 11 x 6 cm) • 9 x 5 x 3" (23 x 13 x 8 cm)	$
Baking Sheet (rimmed)	$	Oven Mitts	$
Baking Thermometer	$	Wire Racks	$
	Total: $		Total: $
Grand Total for Basic Bread Making Tools and Equipment: $			

Costs of Other Useful Equipment in Bread Making



Bench Scraper	$	Dough whisk	$	Scoring lame	$
Proofing Basket	$	Enamel Dutch Oven	$	Baguette baking pans	$
Pastry Brush	$	Stand Mixer	$	Silicone Baking Mat	$
	Total: $		Total: $		Total: $
Grand Total for Other Useful Bread Making Tools and Equipment: $					

Think About….

1. What source(s) did you use to calculate the costs?
2. Does the source make a difference? Why? Or Why Not?
3. List two (2) conclusions you can make from completing the costing activities.

YOURSELF

Based on the information learned in this meeting, how many of these questions can you answer?

1. Name three (3) tools or pieces of equipment that are used in breadmaking. (Answers will vary e.g., food safe thermometer to check water temperatures, bench or dough scraper to clean mixing bowl and to lift dough from kneading surface, large mixing bowl or stand mixer bowl)
2. What is a preferment? Give an example. (A mixture of flour, water and a little yeast, works as a head-start to fermentation before being added into bread dough ingredients)
3. Why did no-knead methods revolutionize breadmaking? (Made breadmaking easier, no kneading required, dough usually refrigerated so cold dough is easier to handle and shape)
4. What is cold fermentation? (Known as retarding the dough, slows rising but adds more flavour during the slow fermentation)
5. Name three (3) characteristics of no-knead breads. (Answers will vary, e.g., long fermentation times on counter and in refrigerator, no-kneading, airy texture)

Meeting 4 – Beyond Yeast

Setting Objectives:

- Explain how leavening agents such as baking powder and baking soda work to leaven bread related products
- Bake a variety of bread-related products

Suggested Roll Call Questions:

- The bread recipe I tried since the last meeting and how I got along
- My favourite kind of muffin

TRIVIA

In the 1700's the British Earl of Sandwich, John Montague, didn't want to interrupt his card game to sit at a table to eat. He asked his servants to bring his meat between two slices of bread. Then he could hold his food in one hand and his cards in the other. This "invention" became known as the sandwich. Think of the variations we have come to know as sandwiches.

Enjoying a meal with friends or hosting guests for a meal can be described as "breaking bread together".

Baking powder was originally called "yeast powder". Initially it was not well received. Bakers thought it would ruin their bread making businesses

SAMPLE MEETING AGENDA Time: 2 hours 40 minutes

Welcome, Call to order, Pledge		5 minutes
Roll Call		5-10 minutes
Parliamentary Procedure	Minutes and Business	10 minutes
Opening Activity	Science experiment(s) to demonstrate how non-yeast leavening agents (baking soda and baking powder) produce carbon dioxide making baked goods rise.	15 minutes
Topic Information, Discussion	Muffins, quick breads, biscuits and scones to demonstrate popular non-yeast breads. Incorporation of the blended, creaming and biscuit methods of preparation	1 – 1 ½ hours
Recipe Testing	Possibilities: • Angel Biscuits • Irish Soda Bread • Raspberry Muffins • Honey Lemon Scones • Cranberry And Nut Quick Bread • Basic Biscuits And Variations • Corn Bread • Fruit Cobbler • Meat Pie With Drop Biscuit Topping	1 – 1 ½ hours
Wrap up, Social time and Adjournment	Participants are to reflect on what they have personally learned from the meeting by recording three (3) Take-Aways. See Page 10 of the Participants Journal. Participants are asked to try one of the recipe suggestions. Log comments in the Participants Journal Page 12.	5 minutes

Content Notes

- Yeast is a biological or natural form of leavening. Baking soda and baking powder are chemical forms.
- In this meeting participants are introduced to breads that use chemical leavening agents as they explore standard methods of preparation: blending, creaming and biscuit.
- The opening activity could be completed by a senior participant be it the volcano or one of the other experiments. These demonstrate how leavening agents such as baking soda and baking powder produce carbon dioxide gas and rising (leavening) power for baked goods.
- Many of the suggested recipes can be completed in the meeting time. The goal could be to complete one muffin, one quick bread, one biscuit and one scone recipe.
- KNEADING MORE analyzes the nutrient data of a recipe using a recipe nutrition calculator. Participants can then compare the data to a ready-made product from a food shop. This should provide information that links to recommendations in Canada's Food Guide.

Opening Activity

Participants may remember the classic science experiment; if not replicate the experiment as follows

Try It!

Invite senior participants or participants who enjoy science to demonstrate these experiments.

Experiment It!

To Make a Volcano (Best done OUTSIDE)**
Equipment: liquid and dry measures, measuring spoons, small bowl with spout or liquid measuring cup, spoon for stirring, 2L plastic pop bottle

Ingredients:
- 2 tsp (10 mL) dish soap
- ½ c (125 mL) warm water
- 1 ¾ c (400 mL) white vinegar
- Food colouring (optional)
- ½ cup (125 mL) baking soda
- ½ cup (125 mL) water

Method:
1. Pour vinegar, warm water, dish soap and 2 drops of food colouring, if using into the empty pop bottle.
2. In a small bowl with a spout or a liquid measuring cup, mix baking soda and water to make a paste-like mixture.
3. Quickly pour the baking soda mixture into the mixture in the pop bottle and stand back. This should create an erupting volcano!

A chemical reaction between the vinegar and baking soda creates carbon dioxide gas and the mixture rises.

A similar experiment explains how chemical reactions with baking soda and baking powder cause mixtures to rise.

Experiment to Demonstrate Leavening

Equipment: liquid measuring cup, measuring spoons, small funnel, 4 1-litre plastic bottles (e.g., pop bottle), 4 round balloons

Method:

1. Place ½ cup (125 mL) water in a plastic bottle. Add 1 tsp (5 mL) baking soda. Swish around to dissolve. Quickly attach a balloon to the top of the plastic pop bottle.

2. Place ½ cup (125 mL) water in another plastic bottle. Add 1 tsp (5 mL) baking powder. Swish around to dissolve. Quickly attach a balloon to the top of this plastic bottle.

3. Place ½ cup (125 mL) water in another plastic bottle. Add 1 tsp (5 mL) dry active yeast. Swish around to dissolve. Quickly attach a balloon to the top of the plastic bottle.

4. Place ½ cup (125 mL) water in the last plastic bottle. Add 1 tsp (5 mL) sugar. Shake to dissolve. Add 1 tsp (5 mL) dry active yeast. Swish around to dissolve. Quickly attach a balloon to the top of the plastic bottle.

Discussion:
Leavening agents make breads and other baked goods rise mainly in the presence of heat(oven). Leavening makes the structure porous and adds lightness.

1. Compare the sizes of the balloons.
2. What happened? (a carbon dioxide gas caused balloons to expand)
3. What conclusions can be made?

Chemically, **baking soda** is a base. When mixed with water, very little carbon dioxide is produced. When an acid is added, as in the volcano experiment with vinegar, a chemical reaction occurs producing carbon dioxide gas. In baked goods, the carbon dioxide is trapped by the structure of the batter or dough, creating the air pockets that leaven the baked good and cause it to rise.

Other acids that are frequently used with baking soda to make baked goods rise: buttermilk, lemon juice, molasses, yogurt, sour cream and brown sugar.

Baking powder is made up of baking soda, a dry acidic powder, and cornstarch. The cornstarch absorbs moisture in the air to prevent the baking soda and acidic powder from reacting with each other. When a liquid is added to the baking powder, a chemical reaction occurs producing carbon dioxide. Most baking powder is double acting. This means it works twice; first when mixed with the liquid (as in the experiment) and again when heat is applied. Baking powder is often used in biscuits, muffins, and quick breads.

Yeast, of course, needs warmth, food, and liquid to activate and form the carbon dioxide gas which in turn causes the leavening (rising). In the experiment some carbon dioxide is produced when only water and yeast are combined. When food (sugar) is added there is much more activation.

(NOTE: A similar experiment may have been performed in Meeting #2).

Alternatively, consider this video:
https://www.youtube.com/watch?v=elCcybU7wx4

Beyond Yeast - Quick Breads

Quick breads are a type of bread made by using fast-acting leavening agents. These breads tend to be easy and speedy to make because they do not use yeast for rising.
When leavening agents such as baking powder and baking soda are combined with moisture the rising process starts immediately. Double-acting baking powder provides a second and more substantial burst of rising when popped into a hot oven. Recipes with baking soda require an acid ingredient such as fruit juice or sour milk. This combination produces the leavening action. Baking powder already contains an acidic ingredient, usually cream of tartar. When heat is applied a second and stronger rising occurs. Quick breads take less time to mix, and bake compared to yeast breads. They include muffins, loaf-style quick breads, biscuits, and scones. They can be sweet or savoury.

Muffins

Muffins are small, cake-like breads baked in tins that are made of six (6) or twelve (12) cup shaped depressions. Some tins may make twenty-four (24) muffins at a time. A standard muffin cup measures 2 ½" (6.35 cm) in diameter. There are larger sized muffin tins - 3 ¼" (8.25 cm) and smaller ones for mini muffins. Muffins can be made with a variety of flours and usually contain fruit and/or nuts and seeds.
Typically, muffins are made using a standard blending method that quickly combines all the dry ingredients with all the wet ingredients. Once the dry and wet are combined the mixture needs to be quickly put into the muffin tins and baked immediately. This will ensure muffins do not lose volume.

Muffin Making Tips

1. When combining wet and dry ingredients take care not to overmix the batter. Stir to just combine the wet and dry, otherwise, the muffins will have cone tops instead of nicely rounded tops.
2. Muffin tins should be well greased with shortening or vegetable oil. Paper liners work, too. Parchment papers are a more expensive paper liner, but batter does not stick to the sides when baked like paper.
3. Oven temperature needs to be hot - 385 to 400°F (196 to 204°C) to enhance the power of the leavening agent.
4. Use a portion scoop (ice-cream scoop) to lift the batter from the mixing bowl and into the muffin cups. A scoop will facilitate equal-size muffins and even baking. Usually, cups are filled about 2/3 full.
5. Bake according to the times given in the recipe. Test the doneness by pressing on the top of one of the muffins. If it springs back, it is done. Tops should be a golden brown colour. Inserting a toothpick in the centre and coming out clean indicates that the crumb is set.
6. Remove the muffins from the oven. Cool on wire racks to allow for air circulation underneath.
7. While muffins are warm, tip the muffins out onto the cooling rack.
8. Muffins are best made and served on the same day.

Muffin Checklist

- ✔ Appearance – uniform in size with rounded tops
- ✔ Colour – golden brown
- ✔ Texture – even grain, tender and moist, no tunnels
- ✔ Flavour – sweet and pleasant with no bitter aftertaste (this comes with too much leavening agent

See RASPBERRY MUFFIN recipe.

Loaf-style Quick Breads

Loaf-style quick breads are like muffin recipes but baked in a glass or metal loaf pan. Sizes of loaf pans vary. Check recommended size with the recipe. The pan size can affect the baking time and the overall appearance.

Basic ingredients consist of flour, a leavening agent, eggs, fat, sugar, salt, and a liquid. Additional ingredients might include fruit, nuts, seeds, chocolate or spices. Loaves are made using a **blending method** although some recipes use a creaming method.

Wet and dry ingredients need to be combined well but not too much or too little. Under mixing results in a lumpy batter with dry pockets of flour. Too much mixing will over develop the gluten and the end product will be tough usually with tunnels. The aim is a drop batter or a very thick pour batter.

Loaf-style quick breads should be golden brown with a tender, moist texture. Tops should be rounded with a split down the center. Slices make tasty alternatives to yeast breads and can be used for sandwiches and other meal additions and snacks.

See CRANBERRY AND NUT QUICK BREAD and CORN BREAD recipes.

Quick Bread Methods

BLENDING METHOD
All wet ingredients are combined in a bowl or large measuring cup with a spout e.g., milk or juice, eggs, liquid fat. In a separate bowl all dry ingredients are combined: flour, sugar, baking powder, spices, salt, etc. A well or hole is made in the dry ingredients and the wet mixture is poured into that area. All ingredients are quickly blended with a fork.

CREAMING METHOD
This method uses solid fat such as butter or shortening. Sugar and slightly softened fat are creamed or worked together using an electric mixer until the mixture is light and fluffy. Eggs are added one at a time followed by alternating additional liquids and dry ingredients. Quick breads made with this method tend to be more cake-like in texture.

BISCUIT METHOD
Cold fat such as butter or shortening is “cut-in” to the dry ingredients using a pastry blender or two dinner knives (working them together in a crisscross fashion). This action changes the fat and dry ingredients to resemble coarse crumbs. Liquid ingredients are quickly stirred in to make a dough which is patted into a desirable thickness, cut into triangles, circles or squares, and baked in a hot oven. This method reduces gluten development and keeps the biscuits light and tender.

Biscuits

Biscuits are quick tasty additions and alternatives to lunches and dinners as well as afternoon snacks, especially when served with butter and jam. They are made with simple ingredients: flour, baking powder, shortening or butter, sugar, salt, and milk. Sometimes eggs might be added to enhance flavour and leavening.
The biscuit method cuts cold fat into the dry ingredients. This is a crucial step to making light, tender and flaky biscuits. The flakiness will come when the bits of fat melt during baking. This causes the biscuits to separate into desirable layers. Sometimes a snapping motion with cold fingers works to distribute the small bits of fat throughout the dry ingredients. Once the fat is cut-in, combined liquid ingredients are added and mixed lightly. Overmixing will result in tough biscuits. Both fat and liquid need to be cold. Handle the dough as little as possible moving quickly to cut and bake.

General Practice:

1. Sift the dry ingredients together in a mixing bowl.
2. Cut cold fat into the dry ingredients using a pastry blender or 2 dinner knives.
3. When the mixture resembles coarse crumbs, stir in the liquid ingredients just until moistened.
4. Turn the dough onto a floured surface and gently knead for 1 – 2 minutes.
5. Roll or pat out the dough. Limit extra flour when rolling or patting. Some recipe developers claim that the best biscuits are patted into a desirable thickness because rolling is too stressful on the dough.
6. Cut into biscuits. Use sharp cutters, pushing straight down with a firm motion. Re-roll scraps to use all the dough.
7. Biscuits should be baked in a preheated hot oven usually for about 10 -12 minutes or until lightly browned.

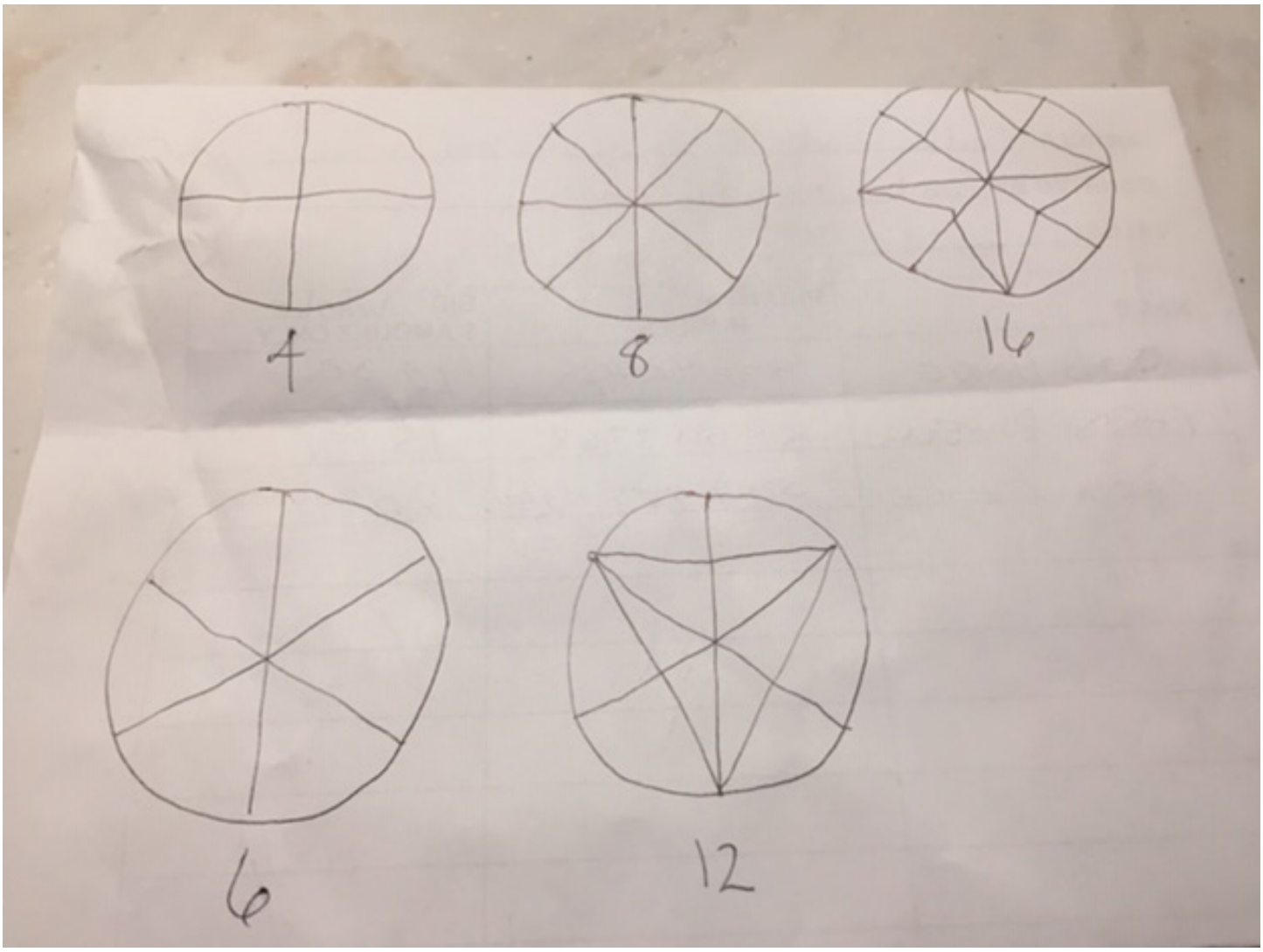
Drop biscuits use a baking powder biscuit dough and extra milk so that the dough can be dropped by spoonful onto a baking sheet producing irregular-shaped biscuits. The same principle applies to fruit cobblers and biscuit-topped meat pies.

See the following recipes:

- Basic Biscuits And Variations
- Fruit Cobbler
- Meat Pie With Drop Biscuit Topping

Scones

Scones have been described as Scottish quick breads. Originally scones were made with oats, shaped into triangles, and cooked on a griddle or frying pan. These were called farls. While this style is still popular, scones are more often made with flour, shaped in various ways, and baked in an oven. The triangle shape is characteristic and efficient whether in separated triangles or a circle of dough with three-sided indentations.



The texture of a scone should be tender and crumbly. Scones are richer than biscuits, incorporating eggs and more sugar. Some critics argue that the best scones are made with heavy cream (cream scones). Like biscuits, they are delicious afternoon snacks when served with butter and jam. Scones use a biscuit method of preparation.

See the HONEY LEMON SCONE recipe.

KNEADING MORE

Canada's Food Guide tells us to make a habit of eating a variety of healthy foods each day.

Canada's Food Guide tells us to make a habit of eating a variety of healthy foods each day.
Among the more specific recommendations, it suggests:

- Eat plenty of vegetables and fruits, whole grain foods and protein foods.
- Limit highly processed foods
- Prepare meals and snacks using ingredients that have little to no added sodium, sugars or saturated fat
- Choose healthier menu options when eating out
- Use food labels
- Be aware that food marketing influences food choices

Eating out, and picking up prepared food products, often fits with busy lifestyles. Making from scratch or making homemade food is sometimes viewed as a luxury despite well-supported research that shows homemade is healthier and less costly.

1. Use a recipe nutrition calculator such as the one at this website: https://www.verywellfit.com/recipe-nutrition-analyzer-4157076 to calculate key nutrient information for a muffin recipe such as the Raspberry Muffins.
2. Find a Nutrition Facts label for a similar store-bought muffin. This can be accessed through an Internet search of popular food

Challenge YOURSELF

Based on the information learned in this meeting, how many of these questions can you answer?

1. Give an example of a chemical form of leavening and explain how it works. (Answers will vary e.g., baking powder is a mix of baking soda, a dry acidic powder like cream of tartar and cornstarch. When liquid is added a chemical reaction occurs producing carbon dioxide and some rising. When put in a hot oven the baking powder reacts again adding more rising or leavening.)
2. Describe the biscuit method. (Cold fat such as butter or shortening is "cut-in" to the dry ingredients using a pastry blender or two dinner knives (working them together in a crisscross fashion). This action changes the fat and dry ingredients to resemble coarse crumbs. Liquid ingredients are quickly stirred in to make a dough which is patted into a desirable thickness, cut into triangles, circles or squares, and baked in a hot oven.)
3. Why are parchment paper liners desirable for making muffins? (Batter does not stick to the sides as with paper liners, easier cleanup)
4. Describe the texture of a good scone. (Tender and crumbly)

Meeting 5 – Beyond Yeast

Setting Objectives:

- Describe sweet, rich doughs used in breadmaking
- Explain how culture influences breadmaking
- Prepare and shape a variety of soft, and sweet, rich rolls
- Appreciate gluten-free breads

Suggested Roll Call Questions:

- The bread recipe I tried since the last meeting and how I got along
- My favourite sweet roll

TRIVIA

"Best thing since sliced bread", originated in the late 1920's when an American jeweller, Otto Rohwedder, invented an automated bread slicing machine. It produced consistently sized slices of bread.

By the 1930's most bread was commercially produced. It tended to be softer than homemade and so pre-slicing made it more sellable.

For a time during World War 2 sliced bread was banned in Canada and the United States. Too many resources were being used that could be better used in the war effort.

During World War 2 the Canadian government became concerned about the lack of iron in people's diets. Since bread was a common food, iron was added to all flours.

In 1976, enriching flour with B-vitamins niacin, riboflavin, thiamin, and iron became mandatory; in 1998, folacin.

Flour enrichment is viewed as a public health tool and is part of Canada's fortification program aimed at preventing nutrient deficiencies and improving the nutrition of Canada's food supply.

SAMPLE MEETING AGENDA Time: 1 hours 55 minutes

Welcome, Call to order, Pledge		5 minutes
Roll Call		5-10 minutes
Parliamentary Procedure	Minutes and Business	15 minutes
Opening Activity	Sensory Experience	15 minutes
Topic Information, Discussion	Distinguishing between lean, soft, and sweet rich doughs Shaping dough for a variety of dinner rolls and sweet treats Cultural Connections (can be tried while waiting for rising) Gluten-Free options for those who cannot tolerate wheat flour	10 minutes
Recipe Testing	Possibilities: • Orange Biscuit Rolls • Parkerhouse Dinner Rolls And Variations • Basic Challah • Stollen • No-Knead Cinnamon Buns • Sweet And Spicy Sticky Buns • Gluten-Free Sandwich Bread • Gluten-Free Rusticstyle Bread • Gluten-Free Challah	1 – 1 ½ hours
Before the Next Meeting	Participants are to reflect on what they have personally learned from the meeting by recording three (3) Take-Aways. See Page 10 of the Participants Journal. Participants are asked to try one of the recipe suggestions. Log comments in the Participants Journal Page 12.	5 minutes

Content Notes

- Participants learn a little about taste and smell and how these affect food choices. Set up a blind taste test with an assortment of store-bought bread products. This can lead into discussing soft, and sweet, rich doughs and gluten-free breads.
- There are several recipe suggestions to support discussion about soft, and sweet rich doughs.
- Experiment with different ways to shape dinner rolls. Using the PARKER HOUSE DINNER ROLL AND VARIATIONS recipe, and working as individuals or groups, shape rolls in a variety of ways. Suggestions are given in the recipe.
- A gluten-free diet is necessary for many Canadians. In a study conducted by public health researchers at the University of Manitoba an analysis of the 2015 Canadian Community Health Survey found 1.9 percent of Canadians follow a gluten-free diet. (The CCHS is the best and most current data available about nutrition in Canada). Again, there are several recipes to support discussion about gluten-free bread-like products. Three (3) recipes are suggested in the RECIPE BOOKLET.
- Reference: https://news.umanitoba.ca/gluten-free-diet-is-expensive-socially-challenging-for-those-with-celiac- disease-and-wheat-allergy/

Opening Activity – Sensory Experience

Supplies

- Blindfolds such as scarves
- Small plates with assorted samples of commercial breads e.g., sweet bun, white bread, whole wheat bread, gluten free bread, etc.

Have some fun with a blind taste-test:

1. Cover eyes of all participants or a few (so that others observe).
2. Place small samples of sweet rolls, plain rolls, and gluten free products in front of the participants and see what their taste buds tell them.

Much of enjoying food relies on the taste buds and the sense of taste. Taste buds are sensory organs found on little bumps on the tongue. The bumps are called papillae and most contain taste buds.

Much of enjoying food relies on the taste buds and the sense of taste. Taste buds are sensory organs found on little bumps on the tongue. The bumps are called papillae and most contain taste buds. The taste buds have very sensitive microscopic hairs called microvilli. These are the tiny hairs that send messages to the brain where key tastes are identified: sweet, salty, sour, bitter and more recently, umami or savoury.

The average person has about 10,000 taste buds; they are replaced every couple of weeks. As persons age some of the taste cells don't get replaced and the sense of taste is reduced. Smoking can also reduce the number of taste buds.

Initially it was thought that only certain areas of the tongue would identify specific tastes e.g., the tip of the tongue for sweet, the sides for salty and sour and the back for bitter. Today scientists believe that there is a wider distribution of taste buds on the tongue and that no organization exists.

Taste buds are not the only way that taste is determined. The nose plays a significant role in identifying flavours, too. When food is chewed, chemicals are released and these travel up the nose triggering olfactory receptors. These send messages to the brain that when combined with the messages from the receptors on the taste buds identifies the tastes that we associate with the foods we eat. Thus, the taste of food is really a multisensory phenomenon.

Alternatively, participants might enjoy this video: *The Sense of Taste – How Does it Work? Senses for Kids.* See www.youtube.com/watch?v=SneTFJc7u7Y

Sweet Doughs for Rolls and Breads

DID YOU KNOW?

What is the difference between French bread and Italian bread?
A: Shape

Breads made with flour, yeast, salt, and water are called, "lean doughs". French, Italian, rustic or artisan breads are good examples, even pizza dough. When other ingredients such as fat, sugar, and eggs are added, the texture and flavour of the breads change. These enrichments make for "rich doughs "and range from non-sweet dinner rolls with a high fat, low sugar content to sweet rolls such as cinnamon buns with high fat, and generous amounts of sugar and eggs.

Types Of Yeast Doughs:

Lean dough	• Usually made from flour, water, salt, and yeast • Sometimes other ingredients are added such as seeds or herbs • Generally, a crisp crust with a chewy texture • 0% -1% fat and sugar	White bread Whole-wheat bread French bread Italian bread Rustic or Artisan – type breads
Soft, medium dough	• A higher percent of fat and sugar than the lean doughs – 6-9% • Usually, a soft crumb and a soft crust	Sandwich bread Dinner rolls such as Parker House
Sweet, rich dough	• Much higher amounts of both fat and sugar – up to 25% of both • Creates soft, heavy dough • Bread flour with the high gluten content helps to support the extra fat and sugar and improve structure	Cinnamon buns Chelsea buns Hot Cross Buns Sticky Buns Yeast raised coffee cakes Panettone Stollen

*Reference: Culinary Essentials (2010). The McGraw-Hill Companies Inc

Sweet, rich doughs = longer fermentation and rising times

1. **Sugar:** Lean doughs have at the most 5 percent sugar. Rich doughs can have up to 10 percent. The taking up and retaining of moisture (hydroscopic) by sugar makes it harder for the yeast to hydrate. The fight for moisture increases the time it takes for rich doughs with higher percentages of sugar to rise.
2. **Fat:** The extra fat (butter, oil, and eggs) that makes dough rich also slows down fermentation.

A slower rising period allows flavours to develop better.

Sweet Dough Preparation Tips

- ✔ Adding more flour to make the dough manageable and easier to handle is tempting but additional flour will toughen the dough and make for a heavy product.
- ✔ Use only a light dusting of flour i.e., sprinkle the working surface very lightly with flour.
- ✔ The addition of eggs creates the golden yellow crumb and brown crust. Eggs break down the gluten and make the dough heavy. The same is true with butter and milk.
- ✔ Because ingredients like eggs, butter and milk affect gluten development, lots of kneading is key. There may be an increased amount of yeast. A stand mixer may help.
- ✔ Expect longer fermentation times and slow risings.
- ✔ Enriched doughs are fragile; chilling the dough makes it easier to handle and shape.

Cultural Connections

Many rich doughs are rooted in cultural traditions. They often feature dried fruit, nuts, and spices, and are symbols of Christmas and Easter baking. The crumb will be tender and pale yellow with the addition of eggs. The doughs may be softer and easier to knead. Crusts will be deep golden and especially fragrant during baking. Some examples:

- Pulla – Finnish Cardamon Bread
- Stollen-German Christmas Bread
- Panettone – Italian Christmas/New Year Bread

Try It!

Research enriched cultural breads such as Pulla, Stollen, and Panettone to find out their characteristics. Investigate other enriched cultural breads that may have significance to Canadian communities.

Cinnamon Buns, Sticky Buns, Chelsea Buns – Is There a Difference?

Sweet rolls of all kinds use sweet, rich doughs with high amounts of fat, sugar, and eggs. Techniques and additions vary.

Cinnamon buns, sticky buns and Chelsea buns begin with yeasted dough that is rolled or patted into a rectangle, spread or sprinkled with a filling, rolled into a log, and sliced into rolls. There are two risings with the first after the dough is made and the second after the rolls have been shaped.

Cinnamon Buns typically do not contain nuts or dried fruit. The sweet dough rectangle is spread with soft butter and sprinkled with sugar and cinnamon. Rolls are placed directly on a baking sheet or in a baking pan, sometimes into muffin tins. For a finishing touch, rolls are iced or drizzled with a cream cheese or icing sugar glaze.

Sticky Buns begin with a sugar rich glaze in a baking dish. The glaze may use brown or granulated sugar, maple syrup, honey, or corn syrup. Nuts such as pecans or walnuts are placed on top of the glaze. Nuts may be chopped or left whole. The sweet dough rectangle is spread with soft butter and sprinkled with sugar, cinnamon, and nuts. Rolls are placed on top of the sticky nut mixture. After baking the dish is inverted so that the glaze is on top.

Chelsea Buns include dried fruit such as raisins or currants in the filling and a mixture of spices e.g., cinnamon, ginger, nutmeg, cloves, all spice. Typically, Chelsea Buns are glazed with an icing sugar mixture.

Shaping Dough for Rolls and Other Treats

Soft and sweet, rich doughs can be shaped into an array of styles. Check the Internet to search for videos that show how easy it is to create braids, rolls, spirals, folds, knots, swirls, scrolls and more.

Refer to the recipe booklet and the recipe, PARKER HOUSE DINNER ROLLS AND VARIATIONS for several ways to shape dinner rolls.

Begin by portioning dough into equal amounts. A kitchen scale is very useful. Small dinner rolls weigh approximately 50g.

Gluten-Free

Simply explained, gluten-free means a food (or a diet/eating plan) that does not contain gluten.

As discussed earlier, gluten is an important protein in breadmaking. Kneading develops the gluten network as gluten strands are stretched and expanded to allow the dough to hold the carbon dioxide gas bubbles formed by the leavening agent (usually yeast). Gluten is present in flours made from wheat, rye, barley, and triticale. Wheat flour is the best for making bread.

Try It!

To address the topic of gluten-free breads, consider inviting a community participant as a guest speaker who has knowledge and experience with the topic.

People with celiac disease, a non-celiac gluten (wheat) sensitivity, or a wheat allergy can not tolerate gluten.

Celiac disease is a genetic disease where the small intestine can be damaged if gluten is consumed. When this happens, nutrients cannot be absorbed properly. Serious health issues can result if celiac disease is not treated.

A **non-celiac gluten (wheat) sensitivity** may show symptoms like celiac disease. If gluten or other wheat-related components are consumed, intestinal issues arise. This can lead to anemia, chronic diarrhea, cramping and even malnutrition, to name just a few complications. A correct diagnosis needs to be made by qualified physicians.

A **wheat allergy** happens when the immune system reacts abnormally to wheat proteins. Allergic reactions may include hives, swelling of the face, lips, tongue, wheezing, throat tightness, and itchiness, to name just a few reactions.
Given the popularity of wheat flours and bread, what are people in these situations to do?

In many recipes wheat flour can be replaced with a gluten free flour or blend. Flour alternatives include rice, almond, buckwheat, chickpea, amaranth, coconut, oat, hazelnut, and millet flour.

Adding Xanthan gum is widely recommended. It helps simulate the chewiness normally associated with gluten. Breads often have eggs and vinegar added to increase rising.

Baked Good	Amount of Xanthan Gum Recommended
Muffins and Quick Breads	¾ tsp (4mL) per cup (250 mL) flour
Breads	1 ½ tsp (7 mL) per cup of flour
Pizza Crust	2 tsp (10 mL) per cup of flour

Rice flour is often blended with tapioca and potato starch to make a flour blend that is good for baking. Sometimes xanthan gum is an added ingredient.

It is best to look for a flour blend that can be used as an equal substitute for all-purpose flour.
Flour blends can be easily made.

Sample Gluten-Free Flour Mix
Blend together:

- 2 ¾ cups (700 mL) white rice flour
- ¾ cup (200 mL) potato starch
- ½ cup (125 mL) tapioca starch
- ¼ cup (60 mL) cornstarch
- 4 tsp (20 mL) Xanthan gum

Makes about 4 cups (1000 mL)

Try It!

Research enriched cultural breads such as Pulla, Stollen, and Panettone to find out their characteristics. Investigate other enriched cultural breads that may have significance to Canadian communities.

Bulk food stores and health food stores are good places to search for gluten-free flours and blends.

For more information about gluten-free see: https://www.canada.ca/en/health-canada/services/food-nutrition/reports-publications/food-safety/gluten-pamphlet.html

For more information about celiac disease see: https://www.celiac.ca/

For more information about wheat allergies see: https://foodallergycanada.ca/tools-and-downloads/downloads/information-sheets/

KNEADING MORE

There is a huge reliance on the Internet as a source of recipes. What may be the pros and cons of this source?

Pros for using the Internet as a source of recipes	Cons for using the Internet as a source of recipes

Find a cookbook that includes bread recipes. Visit a library, a bookstore, a family participant, or a neighbour to locate a cookbook. Look for recipes that feature lean, soft, and sweet, rich doughs. Find a recipe that you would like to try. If possible, make the recipe.

Name and Author of the Cookbook:	A recipe that I would like to try:
Copy the recipe here:	
If you made the recipe, describe the experience.	

Challenge YOURSELF

Based on the information learned in this meeting, how many of these questions can you answer?

1. What is “lean” dough? (Dough made from just flour, yeast, salt and water for breads such as French bread, Italian bread and rustic or artisan types of bread)
2. What is “sweet, rich dough”? (Dough made with flour, yeast, salt, milk, fat, sugar and eggs for breads such as cinnamon buns, stollen, challah etc.)
3. Why is Xanthan gum used in gluten-free breads? (Helps breads to rise, somewhat replaces gluten)
4. What makes a good recipe? (Reliable source, needed equipment and ingredients are clearly outlined, ingredients are listed in the order used, instructions are clear and numbered.)

Meeting 6 – For The Fun Of Bread

Setting Objectives:

- Explain how bread can be part of meals and celebrations
- Use stale bread in a variety of ways
- Bake bread from around the world

Suggested Roll Call Questions:

- The bread recipe I tried since the last meeting and how I got along
- What is the future of "bread"?
- A bread that I didn't realize could be considered a bread
- My favourite way of eating a bread

TRIVIA

Bread was an important part of the first social welfare system. Grain and bread were distributed to the poor in the streets of early Rome as part of the Cura Annonae (care of Annona, named after the Greek goddess of grain). For a time, a regular and predictable supply of grain was part of Roman leadership.

Bread shortages and a lack of grain have contributed to many wars and disputes including the French revolution.

Control over the price of bread led French bakers to make pastry instead of bread. Only the wealthy could afford pastry.

Bread lines were part of the Depression. People who had lost jobs and had no money lined up to receive free food. A loaf of bread in the 30's cost 5 cents.

Bread lines of a different kind were noticed in the early days of Covid-19.

SAMPLE MEETING AGENDA Time: 1 hours 50 minutes

Welcome, Call to order, Pledge		10 minutes
Roll Call		10 minutes
Parliamentary Procedure	Minutes and Business	10-15 minutes
Opening Activity	Bread for Meals, Snacks and Celebrations	15 minutes
Topic Information, Discussion	Why Does Bread Go Stale? Bread Storage Food Waste – Using Stale Bread Food Safety and Flour International Bread Mystery Breadventure Post Assessment	15-20 minutes
Activities Related to Topic	Possibilities: • Pita • Crockpot Bread Stuffing • Apple And Raisin Bread Pudding • Savoury Strata • Naan • Bread Salad • Bake A Bunch Of Bagels • Cracker-Like Flatbread • Foccacia • Potato Rolls Or Loaf	1 hour

Before Achievement Day	Participants are to reflect on what they have personally learned from the meeting BY recording three (3) Take-Aways. See Page 10 of the Participants Journal. Participants are asked to try one of the recipe suggestions. Log comments in the Participants Journal Page 12.	5 minutes

Content Notes

- This meeting begins with thinking about the many ways bread, by its broad definition, can be part of meals, snacks and celebrations.
- Exploring how bread goes stale and ways of storing bread (and flour) connects to recipes that use stale bread, reducing food waste e.g., crockpot stuffing, apple and raisin bread pudding, savoury strata, and bread salad.
- International breads such as pita, naan, bagels and tortillas have become commonplace in our households. Learn a little about these and try some of the recipes.
- Finally, a post assessment of the project. What have participants learned since the first meeting?
- In KNEADING MORE, senior participants can think about the concept of seasonality and bread.

Opening Activity Bread for Meals, Snacks and Celebrations

"Bread" generally means a staple food made of flour mixed with milk or water and sometimes additional ingredients, with or without yeast or another leavening agent, made into a dough or batter, and baked.
Explore the diversity of "bread" in meals, snacks, and celebrations by brainstorming ways "bread" is enjoyed throughout the day and for special occasions.

Try It!

1. Divide participants into five (5) groups.
2. Present each group with a labelled chart paper and markers: BREAKFAST, LUNCH, DINNER/SUPPER, SNACKS, CELEBRATIONS
3. Invite groups to list ways breads can be enjoyed for their given time.
4. Post the chart papers.
5. Invite participants to add any ideas that think have been missed.
6. Consider a sticky dot rating to close the activity.

Possible Ideas:

Breakfast
- Toast
- Muffins
- Pancakes
- Sweet rolls e.g., cinnamon buns
- Breakfast sandwich
- Overnight strata dishes

Lunch
- Sandwiches
- Pizza
- Soft buns (with soup)
- Crackers
- Hot dogs/Hamburgers
- Wraps (tortillas)
- Stuffed Pita Pockets

Dinner/Supper
- Rolls
- Buttered bread
- Bread salad
- Bread pudding
- Stuffing or dressing
- Sandwiches/Wraps
- Pizza

Snacks
- Tortilla chips
- Crackers and cheese
- Pizza
- Toast and peanut butter and/or jam
- Muffins
- Quick breads e.g., pumpkin bread
- Scones and jam
- Pretzels

Celebrations
- Stuffing or dressing in turkey
- Sweet rolls and breads e.g., Chelsea buns, panettone
- Communion
- Irish Soda Bread
- Pita or Tortillas and Hummus or Salsa
- Challah

Sticky Dot Rating!

- Give each participant 3 sticky dots.
- Invite participants to place their dots beside their favourite choice(s).
- Alternatively, participants can use coloured markers and check marks.
- Add the dots or marks to determine the most popular choices.

For more information see How to perfect the facilitation tool, "sticky dot voting" https://www.canr.msu.edu/news/how_to_perfect_the_facilitation_tool_sticky_dot_voting
Sticky dots can be purchased in dollar stores.

Why Does Bread Go Stale?

Ideally fresh bread should be used in 2 – 3 days. What happens when bread goes stale?

Where packaged crackers, when opened and exposed to air, turn soft and soggy, bread does something different. Instead of sugars and starches absorbing moisture from the air softening the cracker structures, even making them soggy, starch molecules in bread (amylose and amylopectin) begin to crystallize, making the bread hard and crumbly. This process is called starch retrogradation and begins as soon as freshly baked bread comes from the oven. Starch is the main component of flour. When starch molecules are first mixed with water, eggs, and/or milk they begin to absorb moisture. Making bread dough turns a rigid crystalline structure into a non-crystalline, shapeless form. When heated, starch granules swell even more. Taken from the heat of an oven, starches start to cool, gelatinizing or thickening (gelatinization); this gives fresh bread the characteristic soft, spongy texture and fine crumb. As warm bread starts to cool, starch molecules regroup. Moisture moves out of the soft starch molecules and re-crystallizes, causing the bread to harden and stale. Retrogradation is the re-ordering of the starch molecules into a rigid, crystalline form.

Staling can be reversed by re-heating at 140^{o}F (60^{o}C) but the effects will only last a short time. Staling is not drying. Drying happens in toasting, staling results from moisture movement. To explain gelatinization and starch retrogradation see: https://www.youtube.com/watch?v=uGfSA-ezmEw

Lean breads that use flour, yeast, salt, and water will stale faster than other types of breads and sweet doughs where fat, sugar and eggs are present.

Bread Storage

There is debate about the best way to store bread but here are a few tips:

- Expect to use bread (homemade or purchased, rustic or artisan styles) within a day or two. Store on the counter in a paper or cloth bag, or in a breadbox. Keep the cut side covered. Use the heel of the loaf to cover the cut side.
- Plastic encourages mold growth.
  Note: Many purchased breads have a variety of preservatives added to keep bread fresh and can stay in their plastic wrappings.
- Storing bread in the refrigerator causes staling.
- Freezing bread works well. Extra wrapping may be needed.
- Bread boxes are ideal storage spaces especially for freshly-made loaves. Small air vents keep air circulating to prevent the growth of mold.
- Check BEST BEFORE DATE or BEST IF USED BY DATE on purchased bread products. These ensure freshness. These date labels do not mean that the bread cannot be used.

Experiment It!

EXPERIMENT #1 WHAT TEMPERATURE KEEPS BREAD FRESH THE LONGEST?

1. 1Use slices of bread from the centre of a single loaf. Package in individual plastic baggies.
2. Place some of the packed slices in the freezer, some in a refrigerator and leave some at room temperature.
3. At which storage temperature does the bread go stale?

EXPERIMENT #2 DO ALL TYPES OF BREAD GO STALE AT THE SAME TIME?

Under identical storage conditions, compare how long it takes different kinds of bread to go stale. Use a variety of breads including those made with dry active yeast and instant yeast as well as an assortment of purchased breads.

EXPERIMENT #3 HOW EFFECTIVE ARE EMULSIFIERS IN KEEPING BREAD FRESH?

Emulsifiers such as buttermilk and egg yolks in homemade bread increase shelf-life before bread goes stale. Manufacturers use chemical emulsifiers to increase shelf-life.

- Read some bread labels
- Identify emulsifiers
- Predict how these emulsifiers work to keep bread fresh and shelf-life long
- How do you feel about these in purchased breads?

Food Waste

Try It!

If 14. 9 million people live in Ontario, how much food waste is produced by the average person?

Food waste is a huge problem in our communities and a major environmental concern. Over 60 % of food waste in Ontario is sent to landfills, despite having 90 municipal green bin programs. In landfills, methane is created from rotting garbage producing greenhouse gases. In Canada, $31 billion worth of food is wasted annually. Ontarians generate nearly 3.6 million tonnes of food and organic waste. Reducing and diverting food and organic waste from landfills is a key commitment of the Ontario government.

Reference: https://news.ontario.ca/en/release/58603/ontario-proposes-to-further-reduce-landfill-food-waste#quickfacts

Using Stale Bread

As responsible citizens, we need to do all we can to reduce food waste. Stale bread can be used in an array of tasty ways:

1. **Stuffing or dressing**
   - Stuffing is a delicious mix of bread pieces or cubes, herbs such as sage and thyme, vegetables such as onion or celery, sometimes fruit such as apple or raisins, sometimes a little mayonnaise, and butter or broth. It is packed into the inside cavities of turkey or chicken ready for roasting. The flavour radiates through the cooked meat and often makes for a memorable meal.
   - Dressing is the same sort of mixture, but it is cooked outside the bird in a crockpot or oven casserole dish. Cooking time is reduced.

DID YOU KNOW?

The inside temperature of a safely cooked stuffed bird needs to be 165°F (74°C). Stuffing is moist and slow to heat up and cool down, providing an ideal place for bacteria to grow. Health Canada recommends cooking stuffing separately.

If stuffing poultry, stuff loosely just before roasting.

Check internal temperatures using a food safe thermometer.

Take stuffing out right after roasting.

2. **French toast**
   - Stale bread coated with an egg/milk mixture holds its shape and may be fried or baked with excellent results.
3. **Breadcrumbs**
   - Fresh breadcrumbs are made with fresh bread, usually a day or two old. Crumbs are soft. They easily absorb moisture and work to bind ingredients as in meat loaves or hamburgers.
   - Dry breadcrumbs are best for crunchy toppings and coatings. Stale bread can be fully dried in slow oven, 300°F (150°C) for about 10 minutes before cooling and chopping. A food processor works well or crush the bread in a reusable bag with a rolling pin or bottle.
4. **Croutons for salads and casserole dishes**
   - Stale bread can be cut into cubes, tossed with a little vegetable oil, and baked on a baking sheet for about 8 – 10 minutes. Add some fresh or dried herbs such as parsley or thyme, sometimes grated cheese, for extra flavour.
5. **Bread puddings**
   - Use any kind of stale bread to make delicious bread puddings; sweet rolls and buns are especially tasty in these recipes.
6. **Panzanella or Bread Salad**
   - Toss stale cubes of bread in a vinaigrette dressing and an assortment of vegetables such as green or red onion, tomatoes, peppers, and fresh basil for a wonderful summertime salad. The bread cubes soak up the vinaigrette, producing a flavourful contrast to the vegetables.
7. **Pizza bases**
   - Pizza-style snacks and meals can use a variety of bases. Why not try rounds or squares of stale bread?

Food Safety And Flour

Flour is best stored in air-tight containers in cool dry places such as a pantry or cupboard. If flour is not going to be used often, store in the freezer in air-tight containers. The paper wrappings will not be adequate.

In recent years there has been concern about food safety and flour. Specifically, there have been reports of E. coli which can cause food poisoning. Flour is a raw ingredient and needs to be cooked.

Be sure to:

- Avoid tasting any raw dough or batter
- Lightly coat (dust) breads and rolls before baking so that flour is subjected to heat to kill any microorganisms.
- Avoid using raw flour in non-baked recipes
- Use hot, soapy water to thoroughly clean all breadmaking equipment and especially work and kneading surfaces.
- Wash hands often with warm water and soap and plenty of rubbing action. This is especially important after kneading dough.

For more information see:
https://www.canada.ca/en/health-canada/services/general-food-safety-tips/safe-handling-flour.html

Bread Around The World

International Bread Mystery
- See B.L.M. Meeting #6 International Bread Mystery
- Invite participants to use the clues to identify characteristics of 4 International breads: bagels, pita, naan and tortillas.

International Bread Answer Key

BAGELS b. Made by boiling the dough in water for a short time before baking c. Numerous types, flavours and toppings g. Traditionally split with smoked salmon and cream cheese on top	**NAAN** e. Made with flour, yeast, salt, yogurt and sometimes, egg i. A flat bread from India j. Cooked on a griddle and brushed with butter before baking and after
PITA d. A flatbread of the Middle East and the Mediterranean f. Cooked in a very hot oven to make the air pocket k. Usually made with flour, salt, yeast, and olive oil	**TORTILLAS** a. A soft, thin flatbread made with wheat or corn h. Made into numerous dishes such as enchiladas, burritos, wraps and tacos

Breadventure 2 Post Assessment

Revisit the Pre-Assessment conducted during Meeting #1.

- When you hear the word “bread” what comes to your mind?

Post It – Pile It

- Invite participants to record things that they feel they have learned about bread throughout the project. Use sticky notes or scrap pieces of paper. Write one learning per one sticky note or scrap paper piece.
- In small groups, examine the ideas and pile similar ideas together.
- Examine the original lists from Meeting #1.
- Identify things that have been learned and things that participants would still like to learn

The Seasonality of Bread

Does bread have “seasonality”? In this meeting participants had an opportunity to think about the many ways bread might be part of our meals, snacks, and celebrations.

Exploring the idea of “seasonality” as it applies to bread is an interesting notion.

Do some reflection. Prepare a short survey and send it to people that you know that enjoy food OR interview two (2) or three (3) people to see what they think.

My initial thoughts about the “seasonality of bread”:
How I did my research:
What I learned from others
My conclusions:

Challenge YOURSELF

Based on the information learned in this meeting, how many of these questions can you answer?

1. What is the difference between bread stuffing and bread dressing? (Stuffing is cooked inside a turkey or chicken, dressing is cooked outside the bird in a crockpot or in the oven in a casserole dish)
2. What is the process that causes bread to stale? (Starch retrogradation)
3. How is naan different from pita? (Yogurt is an important ingredient in naan but not in pita)
4. What is the best way to store rustic or artisan bread? (Store on the counter in a paper or cloth bag, or in a breadbox)

International Bread Mystery

International breads have become popular parts of our food enjoyment. Use the clues to identify characteristics of 4 specialty breads. Read a clue and place the letter in the appropriate box.

BAGELS	**NAAN**
PITA	**TORTILLAS**

a. A soft, thin flatbread made with wheat or corn
b. Made by boiling the dough in water for a short time before baking
c. Numerous types, flavours and toppings
d. A flatbread of the Middle East and the Mediterranean
e. Made with flour, yeast, salt, yogurt and sometimes, egg
f. Cooked in a very hot oven to make the air pocket
g. Traditionally split with smoked salmon and cream cheese on top
h. Made into numerous dishes such as enchiladas, burritos, wraps and tacos
i. A flat bread from India
j. Cooked on a griddle and brushed with butter before baking and after
k. Usually made with flour, salt, yeast and olive oil

What other International breads do you like?

What International breads would you like to try?