

FFDC's Signature Bread At-Home Resource

Approximate Activity Time: 2 hours

Background

Baking bread is one of our favourite food activities at FFDC. Usually, we would have students make 3 or 4 different kinds of loafs using different combinations of flour (For example: 100% white, 100% whole grain, 50% white and 50% whole grain, etc). For your at home learning use whatever combination you enjoy the most. You can always return to the recipe and try a new combination next time!

How to use this resource

1. Have students complete the “Pre-Baking Questionnaire” and discuss your answers. Or read over them as a group and have an open discussion.
2. Follow the recipe and begin making your bread.
3. Share the “Fun Food Science Facts” and discuss.
4. Share the “Fun Farm Facts” and discuss. Maybe do this while you enjoy your bread!
5. Complimentary Resources

Follow us on...

Facebook: @FarmandFoodDiscoveryCentre

Twitter& Instagram: @UMDiscoveryCtr



**University
of Manitoba**

Pre-Baking Questionnaire

1. Have you ever tried to make your own bread? If you have, did you enjoy it? If you have not, are you excited to try?
2. What ingredient do you think determines the flavour of the bread?
3. What ingredient do you think determines how much the bread will rise?
4. Do you know how yeast functions in a recipe?
5. What steps do you think you can do when cooking at home to make sure your food is safe?

Follow us on...

Facebook: @FarmandFoodDiscoveryCentre

Twitter & Instagram: @UMDiscoveryCtr



**University
of Manitoba**



FFDC's Signature Bread

Check out our video for step-by-step instructions: <https://youtu.be/-b2dENZbceo>

Ingredients

- 500g of your choice of flour (white, whole wheat, whole grain or combo) ~4 cups
Note: if you are using whole wheat or whole grain flour you may require a little bit more water to form your soft dough.
- 2 tsp fast-action yeast
- 1 tsp salt
- 2 tsp canola oil
- 1 tsp honey
- 300ml hand hot water (this is hot water than you can still run over your hand without burning your skin)

1. In a large bowl, mix together flour, yeast and salt until well combined.
2. Measure out hot water, stir in honey and oil into the hot water. Add wet ingredients to dry and stir gently to make soft dough (with no lumps of flour).
3. Lightly flour a clean, disinfected tabletop. Place the dough on the floured surface and knead dough for 5 - 10 minutes, until dough is no longer sticky. Sprinkle more flour if necessary.
4. Place dough into a bread pan lined with parchment paper and cover with cling wrap. Let the dough rise in a warm place for 1 hour. Pre heat the oven to 350° F.
5. The dough should double in size. Prior to baking the bread, use a sharp knife to cut slits into the top of the dough to allow the steam to escape. You could even get creative and cut a design in the top!
6. Bake bread for 30 minutes.
7. Let cool at least 10 minutes before slicing and enjoy!

Follow us on...

Facebook: @FarmandFoodDiscoveryCentre

Twitter & Instagram: @UMDiscoveryCentre



**University
of Manitoba**



Fun Food Science Facts – Bread Edition

1. Yeast Fermentation

- One of the most important ingredients in a bread recipe is yeast
- Yeast is a living micro-organism.
- This microbe is non-pathogenic. That means it does not make humans or animals sick. Often we think of micro-organisms as germs or bad for us. Some like yeast or the pro-biotics found in yogurt are great for us!
- In the fridge, it is inactive until woken up by warm water and given food.
- Yeast eats sugars (simple carbohydrates) and through digestion makes Carbon Dioxide (CO₂) and alcohol. In baked products, the CO₂ creates air bubbles and the alcohol is baked off.
- The yeast used in bread and beer production is called *Saccharomyces cerevisiae*. Pronounced: sack-air-oh-my-seas s-air-uh-vis-e-ay
- That means the more sugar in a dough, the more air bubbles your dough will have and the more it will rise.

2. Gluten

- Gluten is a protein found in certain grain products.
- The kernels of wheat actually have no gluten, but instead 2 precursor proteins called Glutenin and Gliadin. Gluten is formed when Glutenin and Gliadin are mixed (grinding the wheat into flour) and moisture is added (water in dough recipe)
- That's why as soon as you added the water the dough got sticky and eventually got stretchy like a rubber band
- Kneading your dough properly makes gluten stronger and more elastic allowing for gas retention and volume. This means you will have an airy/fluffy dough instead of a dense dough

3. Honey

- Honey comes from natural plant nectars and contains vitamin B6, thiamin, niacin, riboflavin, pantothenic acid and certain amino acids.
- It also is a source of essential minerals including calcium, copper, iron, magnesium, manganese, phosphorus, potassium, sodium and zinc.
- These elements occur in trace levels and will vary depending on the floral source
- Honey adds another simple sugar to the mixture for the yeast to consume and convert to CO₂ and alcohol.

Follow us on...

Facebook: @FarmandFoodDiscoveryCentre

Twitter & Instagram: @UMDiscoveryCtr



**University
of Manitoba**



Fun Farm Facts – Bread Edition

1. Wheat
 - Wheat normally planted in the spring and harvest in the fall
 - However some Manitoba farmers plant “winter wheat” are planted in the fall and harvested in summer or early fall
2. Canola
 - Invented at the University of Manitoba from a plant called rapeseed.
 - Dr. Baldur Stefansson and Dr. Keith Downey worked together to breed out an acid that humans could not digest.
 - Canola stands for “Canadian Oil Low Acid”
 - Manitoban farmers produce 17-18% of Canada’s total Canola
 - Canada produces the most Canola in the world
3. Honey
 - Honeybees are pollinators, which means they help plants that are not able to self-pollinate by transferring pollen between flowers to fertilizing them.
 - Many farmers will pay beekeepers to have hives located on their land because they help their crops.
 - Crops like canola, alfalfa, and sunflowers benefit from the presence of honeybees. Bees are an important part of the pollination system, which is part of a healthy ecosystem.

Follow us on...

Facebook: @FarmandFoodDiscoveryCentre

Twitter & Instagram: @UMDiscoveryCtr



**University
of Manitoba**

Post – Baking Questions

1. What does the bread look like? Did it rise as much as you thought it would?
2. What ingredient did we add into the bread dough for the yeast to eat?
3. What does the bread taste like? How do you think changing the type of flour would change the flavour?
4. Would you like to make another loaf of bread with a different type of flour? How do you think that would change the bread?

Follow us on...

Facebook: @FarmandFoodDiscoveryCentre

Twitter & Instagram: @UMDiscoveryCtre

Complimentary Resources:

- [FFDC's Butter in a Jar Resource](#)
- Food and Nutrition Literacy's [Food Advertisements Resource](#)

Outside Resources Consulted:

- [Food and Beverage Manitoba](#)
- [The Real Dirt on Farming](#)
- The Canadian Climate Advantage Diet by Manitoba Agri-Health Research Network
- [Beemaid Honey Limited](#)

Check out all of FFDC's At-Home Resources at:
<https://bit.ly/2zyGu9b>

Follow us on...

Facebook: @FarmandFoodDiscoveryCentre

Twitter & Instagram: @UMDiscoveryCtr