

CHEMISTRY OF CAKE

CABOT TRAIL Creative Expression



THE ADVENTURE:

What makes a cake bake? Learn about the importance of each ingredient in a cake. Take the ultimate taste test to discover how ingredients affect the taste and texture of a cake.

PLAN:

- Do you know a baker who can help your Troop with this Adventure?
- How do you want to bake your cakes? In a conventional oven, on a camp stove, in a cardboard oven or over a campfire?
- What cake recipe do you want to use?
- Do you want to make full size cakes, or scale down the recipe to make something smaller like cupcakes?
- How many cakes will you bake? How will you form your groups?

DO:

Ingredient Talk

- With your Troop, talk about the ingredients necessary to bake a cake. Do you know what role each ingredient plays? What would happen if you left one of these ingredients out? What would it taste like? What would it look like?

Bake the Cake!

- Prepare batter for one cake that is not missing any ingredients. This will be the control cake. All other cakes will be compared to this one to identify the effect of each ingredient.
- With your group, choose one ingredient to leave out of your cake. Each group should leave out a different ingredient.
- Predict what you think the cake will taste and look like without that ingredient.
- Follow the recipe, leaving out your chosen ingredient.
- While the cakes are baking in the oven, clean up your workstations and wash any dishes.

Comparing the results

- When the cakes are ready, it is time for a taste test!
- Keep track of which cakes are missing which ingredients, and compare them to your control cake.



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REVIEW:

- What do you know now that you did not know before?
- What did you learn about working with others?
- Take note of any differences in taste and texture between the cakes, and try to figure out which ingredients are missing.
- What was the role of each ingredient?
- What did you learn about baking? What other questions do you have?
- What elements of STEM were in this Adventure? Science? Technology? Engineering? Mathematics?
- What did you like about this Adventure? What did you not like?
- How would you do it differently?

SAFETY TIP:

- Never leave a hot oven unattended.
- Take proper precautions to prevent burns. Roll up sleeves, tie back long hair and use oven mitts.
- Familiarize yourself with burn treatment.
- Make sure you know where to find a fire extinguisher.

ONLINE RESOURCES:

- How Baking Works
- Baking Ingredient Science
- Ingredients and Their Uses

MATERIALS:

Prepare enough material for one big cake and for each group of three to four to make its own batter to experiment with different ingredients.

- A copy of the recipe for each group.
- Ingredients for one whole cake. This will be the Troop's control cake.
- Enough ingredients for each group to make one cake with a missing ingredient
- Oven(s)
- Cake pans
- Large bowls
- Whisk
- Measuring cups and spoon

