Controlling Crumbly Cornbread

PROBLEM!

I chose this project because I love baking. One of the things I bake is cornbread. My project is about stopping **CRUMBS** from falling off the cornbread. It tastes good but makes a **HUGE MESS!**

RESEARCH

HISTORY

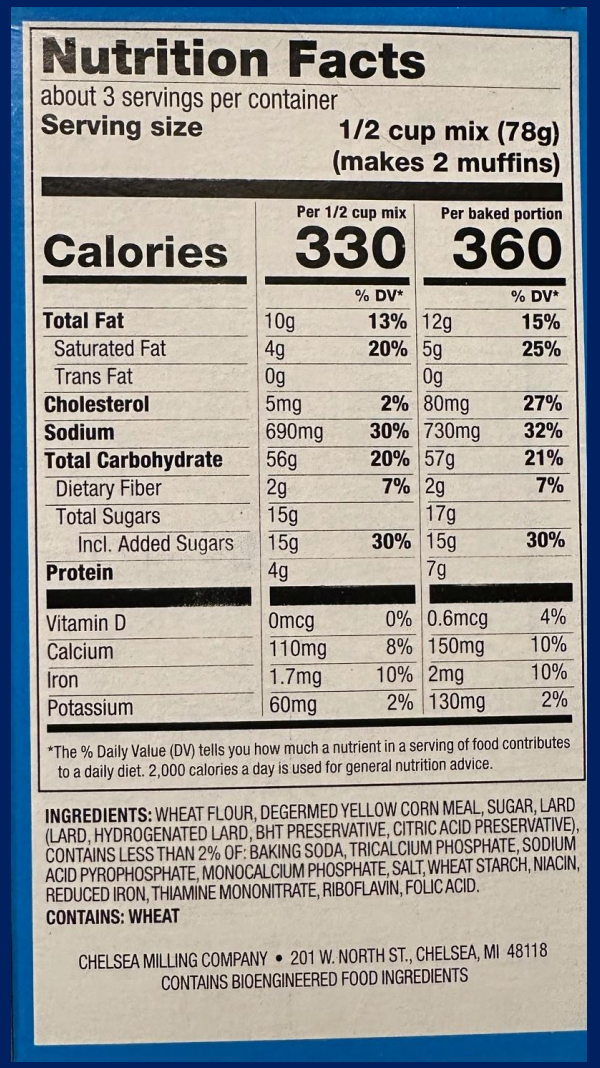
Mable White Holmes invented Jiffy biscuit mix in 1930 to help people struggling in The Great Depression. This led to cornbread mix. The mixes were fast, easy, and didn't cost much. This is why I like to use it too.

RESEARCH – Ingredient Science

- Before getting started with my experiment, I studied kitchen safety, the ingredients, and how to read food labels.
- I wrote down everything I learned in my notebook.
- I made a plan to stay safe in the kitchen and filled out a scientific review form.

Safety

Nutrition and Ingredients



Nutrition Facts

about 3 servings per container

Serving size **1/2 cup mix (78g) (makes 2 muffins)**

	Per 1/2 cup mix		Per baked portion	
Calories	**330**		**360**	
		% DV*		% DV*
Total Fat	10g	**13%**	12g	**15%**
Saturated Fat	4g	**20%**	5g	**25%**
Trans Fat	0g		0g	
Cholesterol	5mg	**2%**	80mg	**27%**
Sodium	690mg	**30%**	730mg	**32%**
Total Carbohydrate	56g	**20%**	57g	**21%**
Dietary Fiber	2g	**7%**	2g	**7%**
Total Sugars	15g		17g	
Incl. Added Sugars	15g	**30%**	15g	**30%**
Protein	4g		7g	
Vitamin D	0mcg	0%	0.6mcg	4%
Calcium	110mg	8%	150mg	10%
Iron	1.7mg	10%	2mg	10%
Potassium	60mg	2%	130mg	2%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

INGREDIENTS: WHEAT FLOUR, DEGERMED YELLOW CORN MEAL, SUGAR, LARD (LARD, HYDROGENATED LARD, BHT PRESERVATIVE, CITRIC ACID PRESERVATIVE), CONTAINS LESS THAN 2% OF: BAKING SODA, TRICALCIUM PHOSPHATE, SODIUM ACID PYROPHOSPHATE, MONOCALCIUM PHOSPHATE, SALT, WHEAT STARCH, NIACIN, REDUCED IRON, THIAMINE MONONITRATE, RIBOFLAVIN, FOLIC ACID.

CONTAINS: WHEAT

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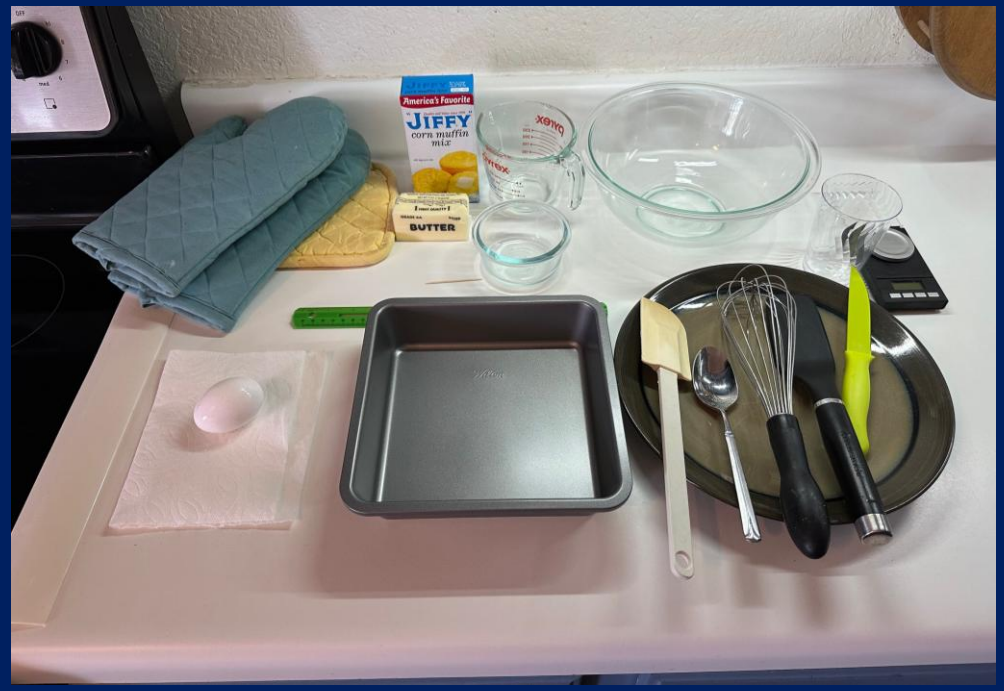
CONTAINS BIOENGINEERED FOOD INGREDIENTS

HYPOTHESIS

If I test different types of milk in the Jiffy Cornbread recipe, some pans of Cornbread will have less crumbs than others. I think the cornbread made with heavy whipping cream will have the least amount of crumbs.

MATERIALS

- Box of Jiffy cornbread mix
- Milk
- Eggs
- Salted butter
- Oven heated to 400°F and oven timer
- 8in x 8 baking pan.
- Oven mitts
- Hot pad
- Bowl
- Whisk
- Spoon
- Rubber spatula
- Knife
- Mini saptula
- Measuring cup
- 6 types of milk
- Small glass bowl
- Mini Scale
- Tooth pick
- Ruler
- Plate/Platter
- Small plastic cup
- Measuring spoons



PROCEDURES

1. Set the Oven to 400°F.
2. Wash hands with soap and water.
3. Open the box of Jiffy mix and pour into large glass bowl.
4. Crack the egg into a small glass bowl. Throw away egg shells. Clean area and hands
5. Pour 1/3 cup of milk into glass measuring cup.
6. Use whisk to get rid of clumps of mix.
7. Add egg and milk into the mix.
8. Use a spoon to mix it all together.
9. Use butter to grease 8in x 8in pan.
10. Pour mixed batter into 8in x 8in pan. Use spatula to help.
11. Use oven mitts to put the pan in the oven. (bake for 16 minutes each time)
12. Remove pan from oven when timer goes off (use oven mitts) place on hot pad.
13. Set timer for 30 mins wait for cornbread to cool check with tooth pick.
14. Use ruler to decide how to cut the cornbread (equal pieces)
15. Remove pieces of cornbread with the small spatula and gently jiggle crumbs off. (10 times)
16. Collect the crumbs that are left in the pan and plate.
17. Measure the amount of crumbs.
18. Weigh the crumbs on the scale in a plastic cup Subtract the weight of the empty cup.
19. Repeat steps for each type of milk.

CORNBREAD (JOHNNY CAKE)

Preheat oven to 400°F.
Prepare as directed for Corn Muffins except pour batter into greased 8" square pan.
Bake **16 – 20 minutes.**

Do Not Eat Raw Batter, Dough or Mix.

corn muffins

Yield 6 Muffins

1 pkg. **JIFFY** Corn Muffin Mix
1 egg
1/3 cup milk

Preheat oven to 400°F.
Grease muffin pan or use paper baking cups.

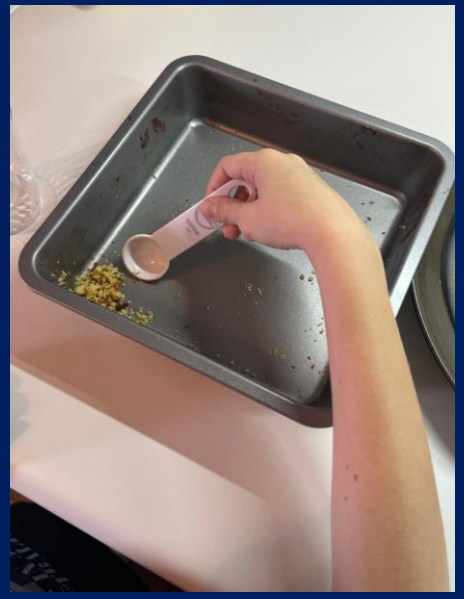
STIR ingredients together. Batter will be slightly lumpy. (For maximum crown on muffins let batter rest for 3 or 4 minutes, stir lightly before filling cups.)

FILL muffin cups 2/3 full.

BAKE 15 – 20 minutes or until golden brown.

PROCEDURE SUMMARY

- Variable: milk type
- Control: everything including bake time, other ingredients, oven temperature
- After baking the Johnny Cakes Cornbread for 16 minutes, I let each pan cool for exactly 30 minutes.
- I cut each pan into 9 equal pieces.
- I carefully removed each piece with the same small spatula in the same order each time.
- I jiggled each piece exactly 10 times over a crumb collection plate. This was more than enough times. No crumbs were falling off after 10 shakes.
- I collected each crumb with a spoon from both the pan and the collection plate.
- I weighed the crumbs in a plastic cup on a small scale. I subtracted the weight of the cup to find out the crumb weight.



WHICH MILK TYPE WILL PRODUCE THE LEAST CRUMBS?

2%
Milk

Skim
Milk

Whole
Milk

Half
and
Half

Almond
Milk

Heavy
Whipping
Cream

RESULTS!

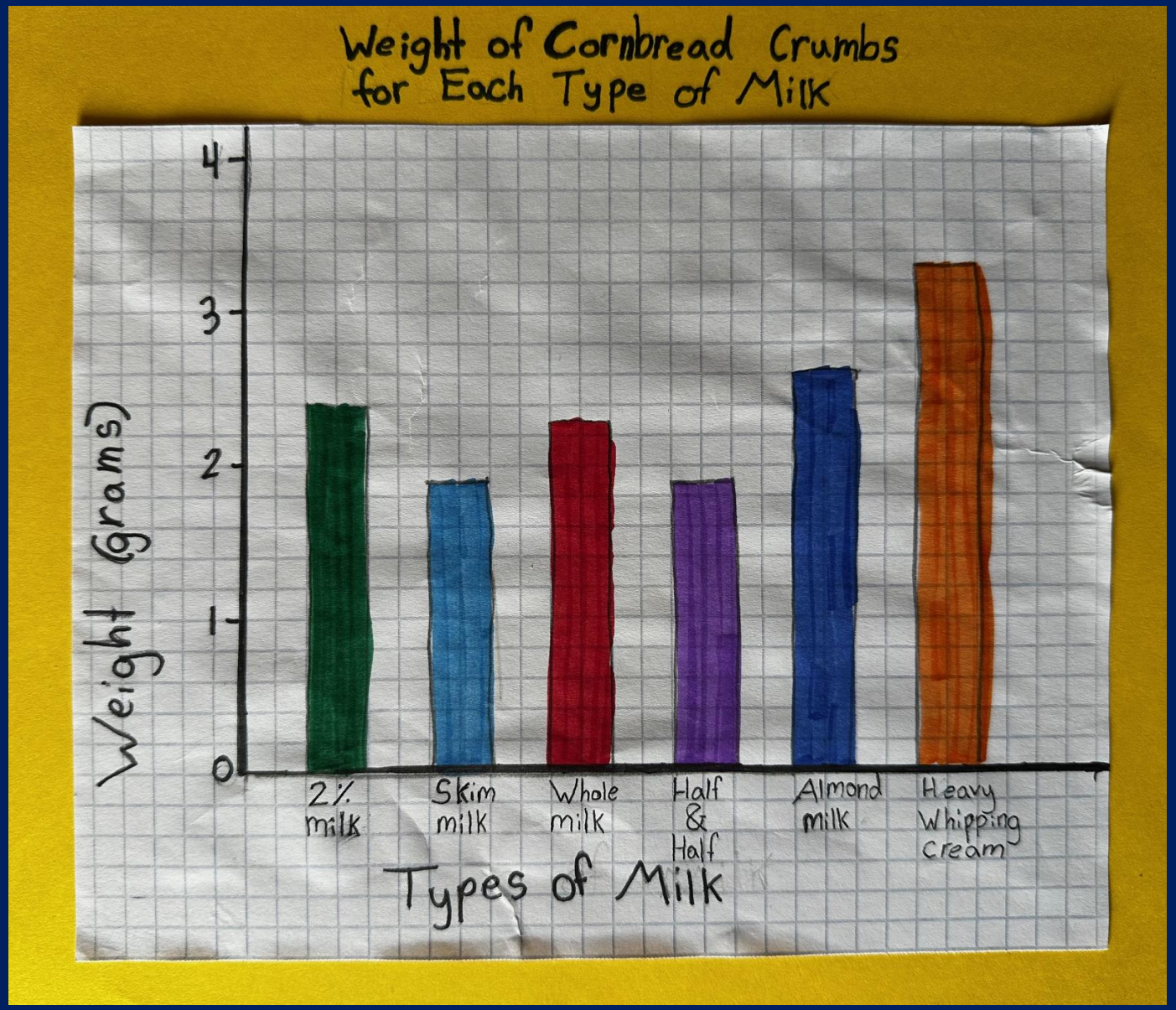
Winners!

Skim

Half and Half

The pans of cornbread made with skim milk and half and half tied for having the least crumbs!

There was no pattern for the amount of crumbs based on fat amount in the type of milk.



CONCLUSION

My hypothesis was wrong. I thought the cornbread made with heavy whipping cream would have the least amount of crumbs but it did not. It had the most crumbs but tasted super good! I will use Skim or half and half when I don't want crumbs. I will use heavy whipping cream for great taste.

CHALLENGES

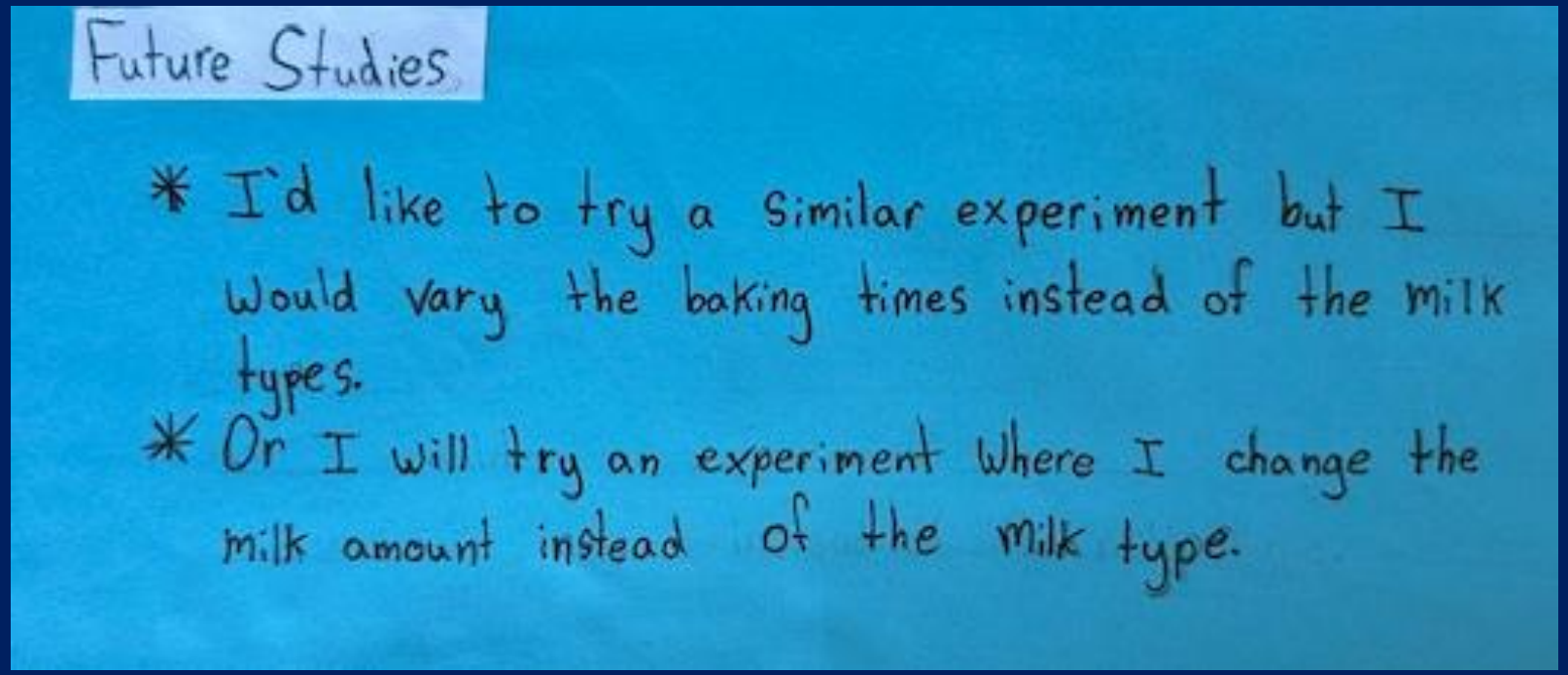
* I didn't expect that changing the milk type would change the taste. I did not like the one made with half and half.
* It was harder to collect each crumb than I thought it would be. It took a lot of patience.
* When crumbs are scattered on a plate it looks like so MANY crumbs. When I collected each crumb and put it together it didn't look like much.

IMPACT

My project is important because crumbs make a mess. Families are busy and most people would like to enjoy eating without having crumbs all over the place to clean up especially if they have kids.

If I can control crumbs, it would also help with other types of baking other than cornbread.

Future Plans for Controlling Crumbly Cornbread!



REFERENCES

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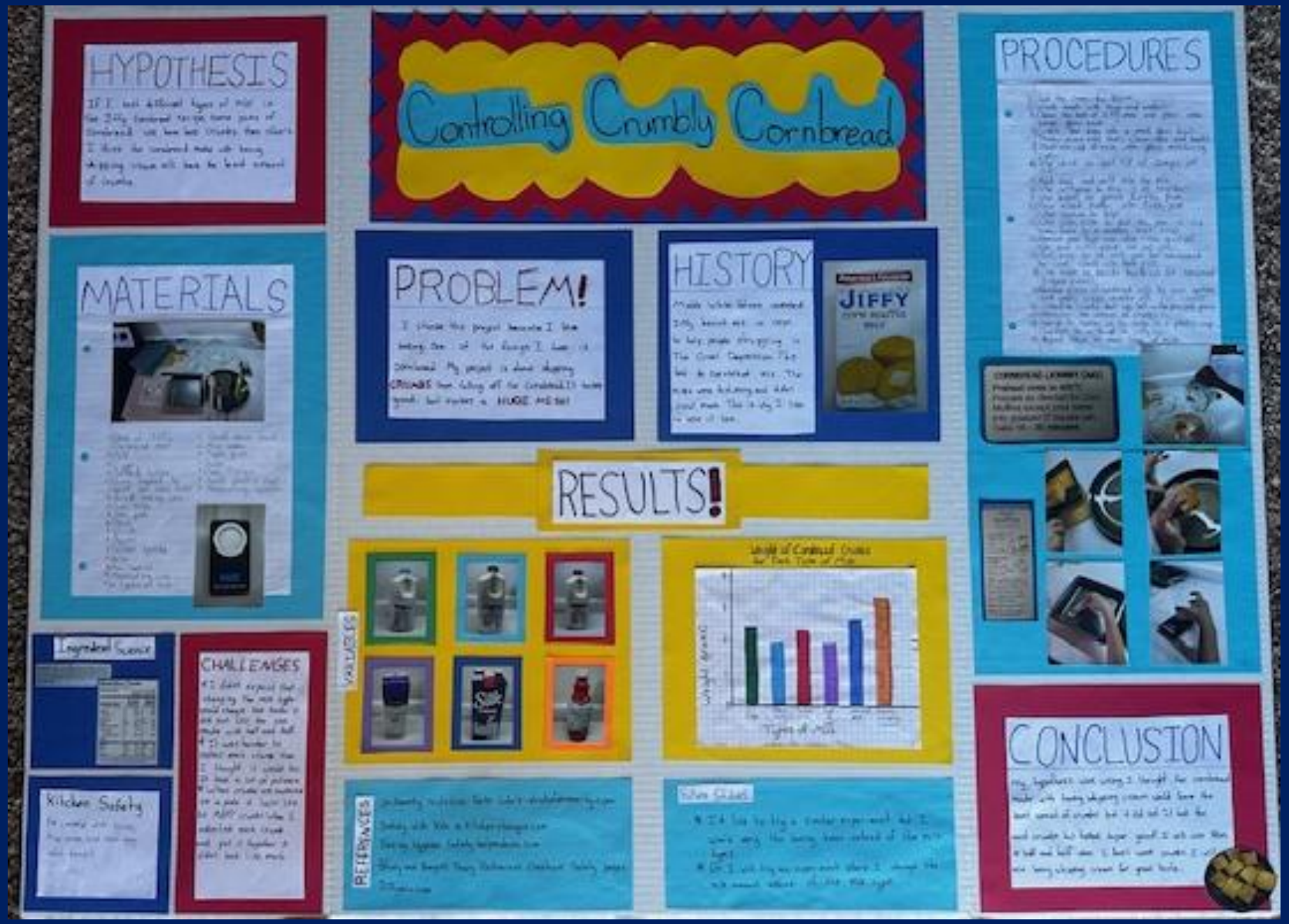
Safety With Kids in Kitchen - chsugar.com

Baking Hygeine Safety - helpmebake.com

Bluey and Bingo's Fancy Restaurant Cookbook Safety pages

Jiffymix.com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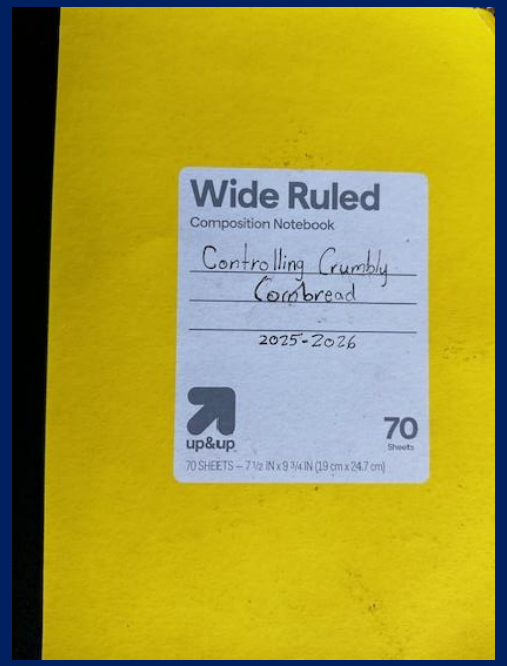
Wide Ruled
Composition Notebook
Controlling Crumbly Cornbread
2025-2026
up&up
70
Sheets
70 SHEETS – 7 1/2 IN x 9 3/4 IN (19 cm x 24.7 cm)