

LOGBOOK FOR A

scientific

RESEARCH



BY

Maïlle and

Connor

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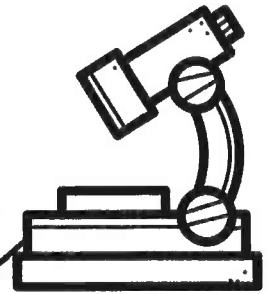
BY

Maelle Zuvie

and Connor Bourdon

STEPS OF THE

Scientific



METHOD

1. Ask a question.

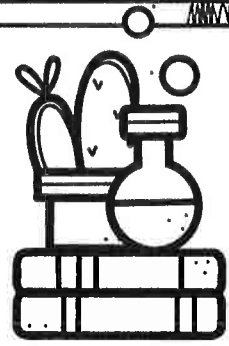
How to create yogurt with a
good pop to it
Does the gel layer get thicker and
more chewy the longer yogurt is in
sodium alginate.

2. Do your research. Has your question been asked before? Research similar questions and write down your information. Don't forget your references (3 websites).

INFORMATION	REFERENCE
Molecular gastronomy with yogurt spheres	Science buddies .org
Elana's experiments Molecular gastronomy	RGET News YouTube
Adventures in molecular cooking	mylastbite.com

YOUR

Research



& REFERENCES

1. Use the space below to glue copies of books or website with valuable information about your topic.

MyLastBite.com Adventures in Molecular Cooking



December 22, 2009

Science buddies.org

Making yogurt Spheres using Molecular Gastronomy

The Science of Spherification

Cap Crystal Brands.com

Elaine's Experiments

Molecular Gastronomy
YouTube

KGET NEWS

2. Use the space below to write 3 titles of books with important information about your topic.

3. Form a hypothesis. Make sure your hypothesis includes all of the elements below this box.

If we leave

The gel layer will get thicker around
a yogurt ball if we leave it in the
sodium alginate solution longer



ANSWER THE FOLLOWING QUESTIONS TO HELP YOU FORM A HYPOTHESIS.

- Is your hypothesis specific and testable?
- Does it include the relevant variables?
- Does it include the predicted outcome?
- Does it include the specific group being studied?
- Is your hypothesis phrased in 1 of the 3 possible ways?

If... then

Correlation / effect

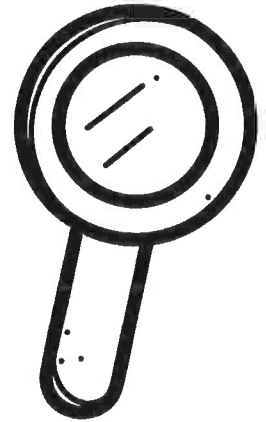
Comparison

YOU CAN USE THE PREVIOUS PAGES TO READ ABOUT VARIABLES AGAIN.



YOUR

Variables



Write the variables of your experiment and explain each one.

Controlled variable

① The brand of yogurt

It has to be the same brand or else it could be the brand that it forms a better

② The amount of sodium alginate
If you use more it could cause more gel

③ The amount of water
If you don't use the same, it could be too weak or too strong

Independent variable

The time we leave the yogurt in the sodium alginate solution

That is what we will keep changing

Dependent variable

The amount of gel that forms around the yogurt sphere

It will depend on how long we leave it in the sodium alginate solution.



DEFINITIONS

Controlled experiment	
Control group	
Repetition	

4. Test your hypothesis. Use the the box to draw or write things that will help you design your experiment.

Yogurt
measured in a teaspoon

Same yogurt for all
* the tests

Timer for leaving
it in for each
of the minutes

Weigh the yogurt
before putting it into
the sodium alginate
solution.

Put the
Sodium alginate
in water

* Slotted spoon to
let water drain
off

* Gram
Scale to
weigh before
+ after being
in sodium
alginate

Collect your DATA



Perform your experiment carefully. Don't forget to record your data.

Date	Observations	Possible errors
January 20 2024	8 grams to start 2 mins in solution 8 grams after 2 minutes	extra water on yogurt ball

Date	Observations	Possible errors
January 25, 2024	8 grams to start 4 mins in solution 9 grams after 4 mins	extra water

Date	Observations	Possible errors
January 25, 2024	8 grams to start 6 mins in solution 9 grams after 6 mins	scale isn't exact enough

Date	Observations	Possible errors
January 25, 2024	8 grams to start 8 mins. in solution 10 grams after 8 mins	extra water

Date	Observations	Possible errors
January 25, 2024	8 grams to start 10 mins. in solution 10 grams after 10 mins	and scale is n't exact enough

Date	Observations	Possible errors
Jan. 24/24	7.8g. to start 8.3g. after 2 mins. 7.8g. to start 8.9g. after 4 mins.	

Date	Observations	Possible errors
Jan. 24/24	7.8g. to start 9.5g. after 6 mins. 7.8g. to start 10.0g. after 8 mins.	

7.8g. to start
10.4g. after 10 mins.

Date	Observations	Possible errors
January 28/24	7.9g to start 8.2g after 2 mins. 7.9g. to start 9.1g after 4 mins.	

Date	Observations	Possible errors
Jan 28, 2024	7.9g to start 9.7g after 6 mins. 7.9g. to start 10.2g after 8 mins.	

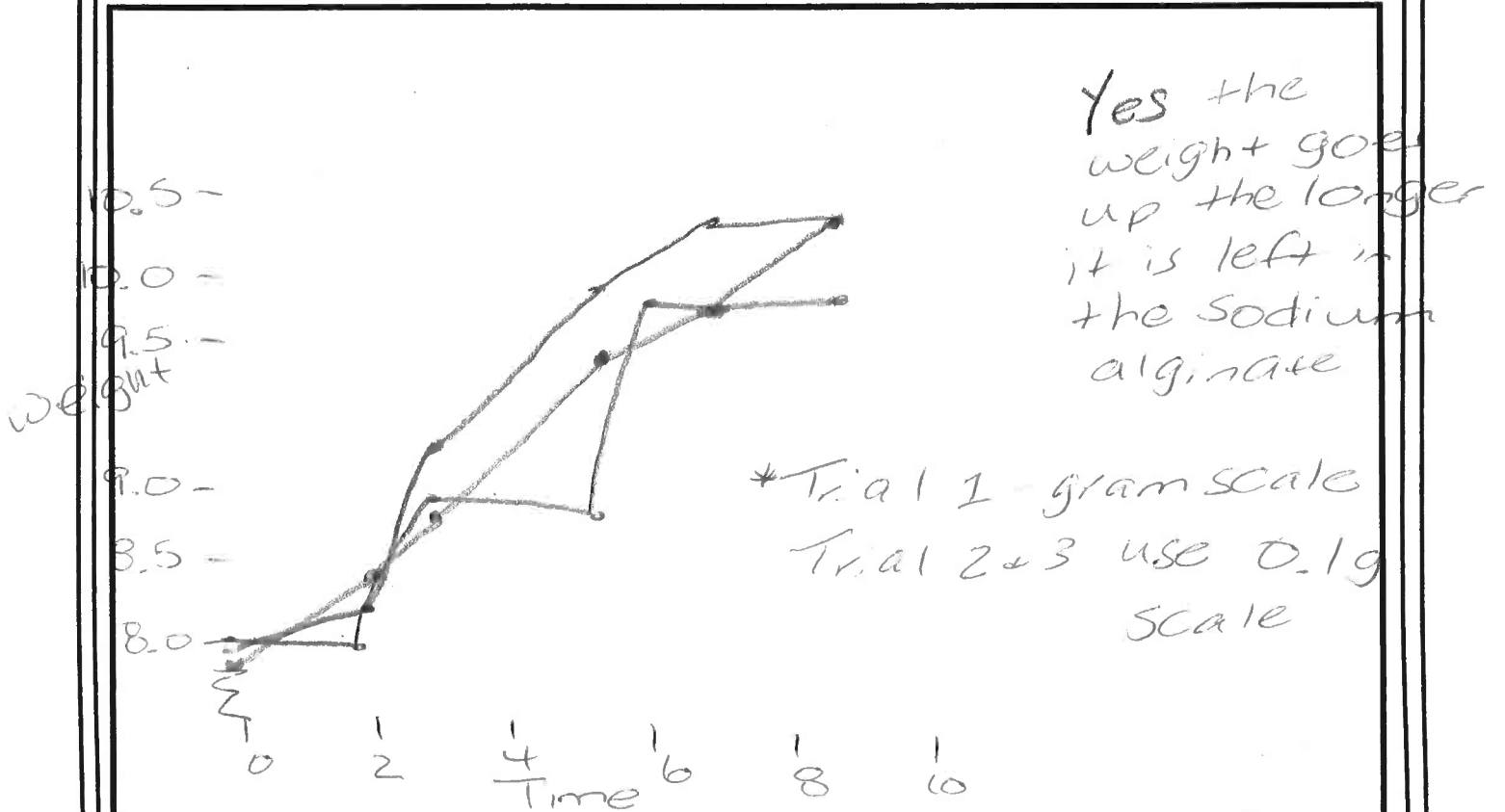
Date	Observations	Possible errors
Jan 28, 2024	7.9g. to start 10.5g. after 10 mins. 2.6g. increase	

Date	Observations	Possible errors

5. Analyze your data.

Use the space below to make rough charts or graphs that represent your data. Does your data fit your hypothesis? Why or why not?

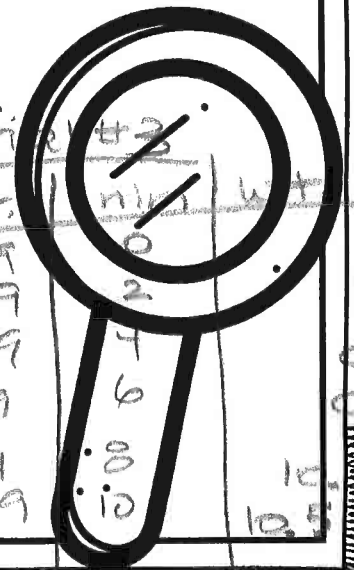
You can also use this space to compare your data to others' researches.



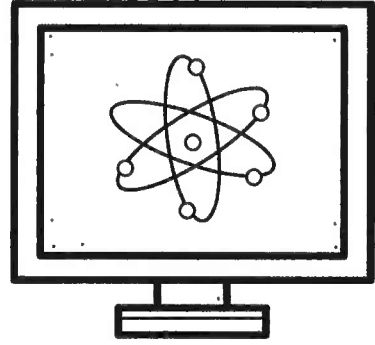
Trial #1		
start	mins.	weight
8.0	0	8.0
8.0	2	8.4
8.0	4	9.2
8.0	6	9.8
8.0	8	10.0
8.0	10	10.4

Trial #2		
start	min	weight
7.8	0	7.8
7.8	2	8.3
7.8	4	8.9
7.8	6	9.5
7.8	8	10.0
7.8	10	10.4

Trial #3		
st.	min	wt
7.9	0	7.9
7.9	2	8.2
7.9	4	8.7
7.9	6	9.1
7.9	8	9.5
7.9	10	10.2



YOUR Data



Glue your graphs here.

6. Draw conclusions.

What did you learn from the experiment? Was your hypothesis correct? What questions do you have now?

We learned that the yogurt balls do get heavier the longer we leave them in sodium alginate solution. The gel layer gets thicker.

What would happen if we left the solution in the fridge?

What would happen if we used yogurt with more calcium?

Would it be better if we used a blender and not a whisk?

We could try Spherification?
Freezing juice?

Would adding more sodium alginate

change it?

Use the space below to design your display board.

