



Mo Tu We Th **Fr** Sa Su

Memo No. _____

Date 10/6/24

Ideas

- battery potato
- bath bomb science - candle
- balloon powered car
- 5-second rule test
- volcano

TOP 3! ↓

- battery potato
- volcano
- 5-second rule test

FINAL 1! ↓

- 5-second rule test

(seems like something important because I use the 5-second rule alot).

Time table



Mo Tu We Th **Fr** Sa Su

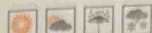
Memo No. 1

Date 10 / 6 / 24

Dates	Action
Oct. 6 th 2024	make timetable
Oct. 6 th 2024	choose project
Dec. 10 th 2024	fill out project proposal
Jan. 24 th 2025	fill out ethics & due care form
Feb. 10 th 2025	pick up tri fold & materials
Feb. 21 st 2025	prepare experiment (1st day)
Mar. 9 th 2025	have tri fold done
Mar. 11 th 2025	School science fair
~~~~~ Enter CYSF ~~~~~	
Mar. 13 th 2025	find results
Mar. 17 th 2025	fill required forms
Mar. 21 st 2025	send science fair details
Apr. 10 th 2025	Set up project
Apr. 11 th 2025	CYSF science fair
Apr. 12 th 2025	Award ceremony

↑ finish lab report

## Background Research



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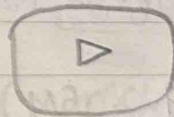
Memo No. 2

Date 10 / 6 / 24

- I want to see if the 5-second rule is real because a lot of my friends believe it, including me.
- see different experiments to see how other people do. (science news, mark rober, etc)
- read what vegetables/fruits will work best for the apple slice experiment.
- see what materials I need for the experiment & find where to get materials.
- time for 0,5 & 10 seconds

## References

- Google
- Youtube



## Experiment Details



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Memo No.

Date 10/6/24

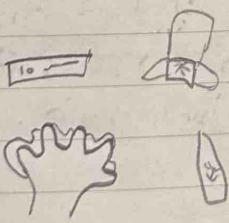
Name: is the 5 second rule safe?  
that was on the ground

Question: will there be lots of bacteria on the food after it was dropped on the ground?

Hypothesis: I think that the 10 second petri dish will have  a lot more bacteria than 5 seconds & there will not be any bacteria on 0 seconds

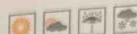
Materials:

- liquid agar
- apple slices
- hand gloves
- petri dishes
- labels
- stopwatch
- swabs



Memo No.

Date 10/6/24



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## Procedure

1. with gloves time the apple slice on the floor (0, 5, 10)
2. Swab them & put the bacteria inside the petri dishes
3. observe them for 9 days

## Variables

Controlled: type of fruit, the size of the fruit & the dirty surface.  (APPLE.)

Independent: amount of time the food touches the surface.

Dependant: the amount of bacteria that is already on the fruit. 

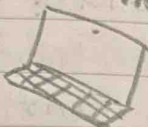


Memo No. _____  
Date 12/9/24

Fill out Forms  
(Ethics & Due care)

ETHICS

DUE CARE



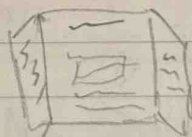
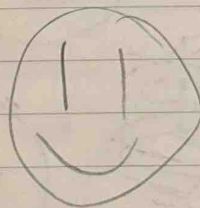
Pick up  
trifold

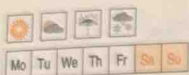
and get  
materials \$\$\$



Memo No. _____  
Date 12/10/24

- project proposal filled
- finish ethics & due care
- bought petri dishes & agar solution.
- pick up tri-fold spoon.



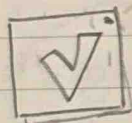


Memo No.

Date 1 / 22 / 25

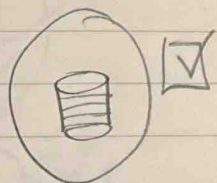
- filled out forms
- got agar solution
- ★ pick up trifold in 2-3 weeks

DONE



2-3

weeks



Petri dishes

Feb. 11th 2025

- picked up trifold

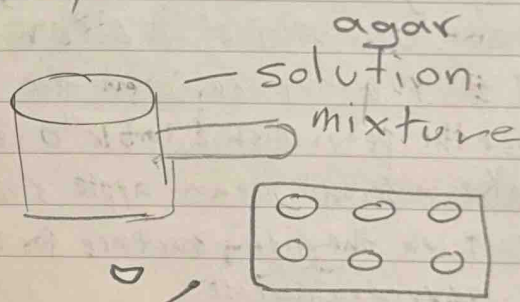


Memo No. 1

Mo Tu We Th Fr Sa Su

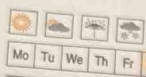
Preperation Date 2 / 23 / 25

- made agar solution
- filled 6 petri dishes (let them cool)
- swabbed & timed apple slices
- stored the petri dishes safely



Day 1 Feb. 23 2025

- exp 1: No growth
- exp 2: No growth



## updated Procedure

Memo No. 1  
Date 2 / 23 / 25

1. Make liquid agar by boiling water & dry agar.
2. Place the liquid agar solution into the petri dish & let it cool for 1-2 hours. Cover the petri dishes so it does not get contaminated.
3. wear gloves before taking swabs.
4. take a swab of a clean apple slice & rub the swab on the petri dish.
5. close the petri dish & label "0 seconds".
6. take a second clean apple slice & place it on the dirty surface for 5 seconds, time accordingly.
7. using tongs lift the apple slice immediately, swab the apple surface with a clean swab & rub it on the second petri dish.
8. close the petri dish and place label with "5 seconds".
9. take the 3rd clean apple slice and place it on the dirty surface for 10 seconds. Time accordingly.
10. using tongs pick up apple slice immediately after 10 seconds, swab the apple surface with a clean swab and rub onto petri dish. close the petri dish & name "10 seconds".



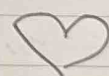
## Updated materials

Memo No. 1  
Date 2 / 23 / 25

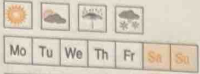
- packet of dry agar solution
- 1 Pot
- 1 ladle
- water (as required)
- 1 set of nertile gloves
- 3 petri dishes sterylized
- 3 apple slices
- 3 clean swabs
- 3 labels
- 1 set of tongs
- 1 stop watch
- 1 roll of tape
- 1 large container or tray

↓ makes

1 experiment

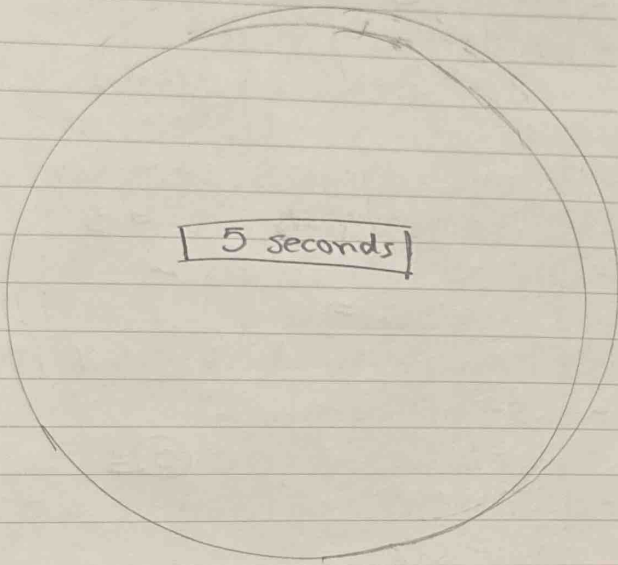


12. Discard the swabs & the apple slices in the appropriate waste / compost bin.

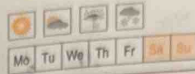


Memo No. 2  
Date 2 / 24 / 25

- No changes observed on 0.5 or 10 on either experiment

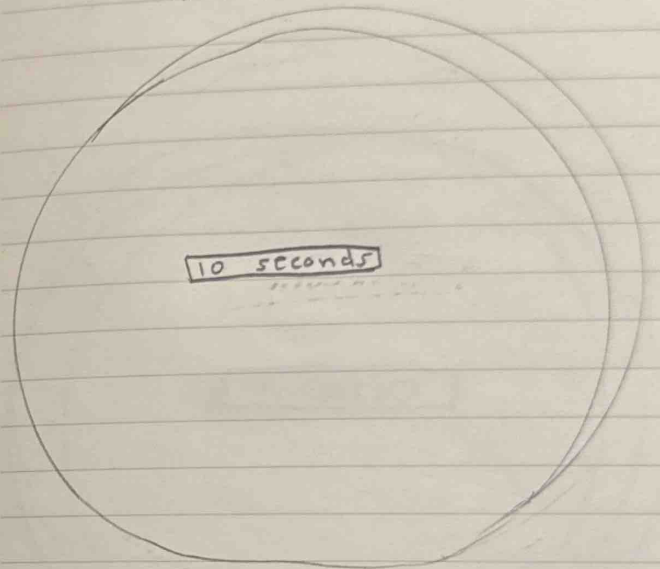


5 seconds

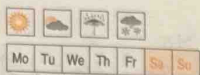


Memo No. 3  
Date 2 / 25 / 25

- No changes observed on 0.5 or 10 on either experiment

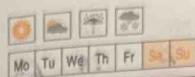
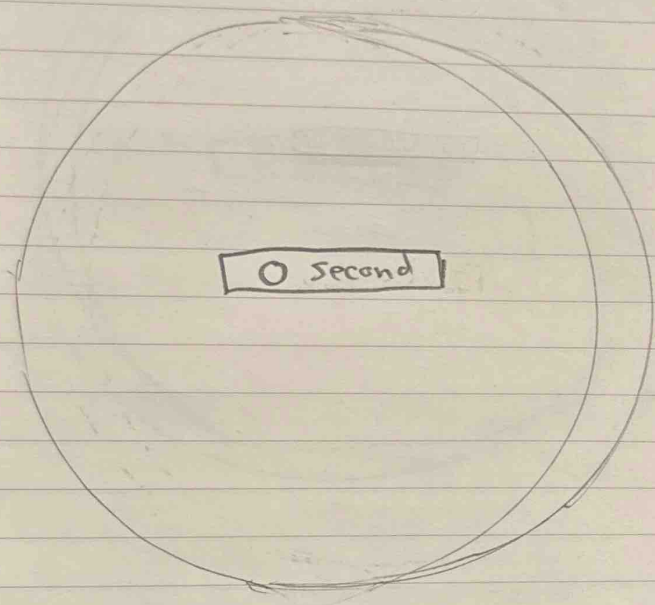


10 seconds



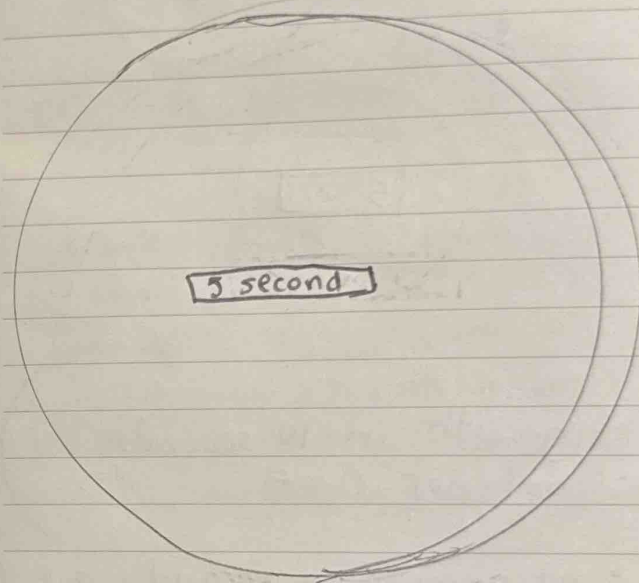
Memo No. 4  
Date 2 / 26 / 25

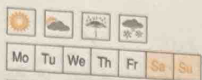
- no changes observed on 0, 5 or 10 on either experiment



Memo No. 5  
Date 2 / 27 / 25

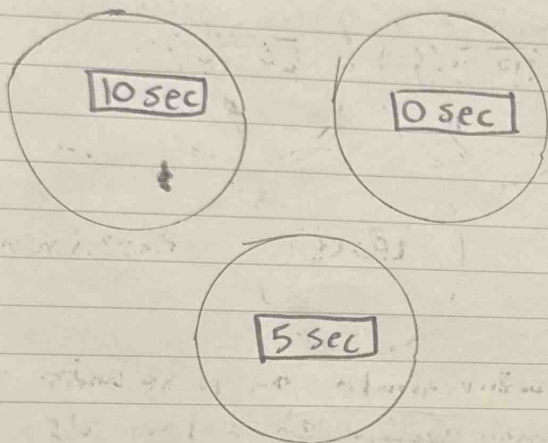
- no changes observed on 0, 5 or 10 on either experiment





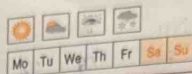
Memo No. 6  
Date 2 / 28 / 25

### Experiment 1

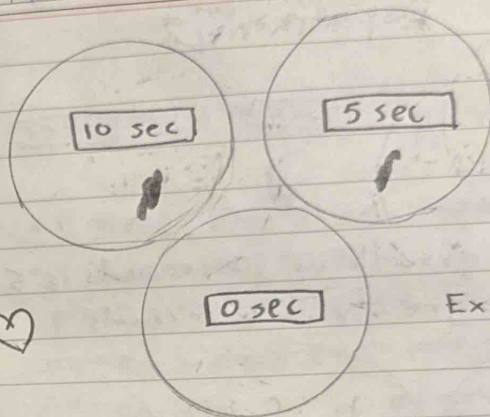


• growth in 10 seconds but not 0 & 5.

• no growth in second experiment.

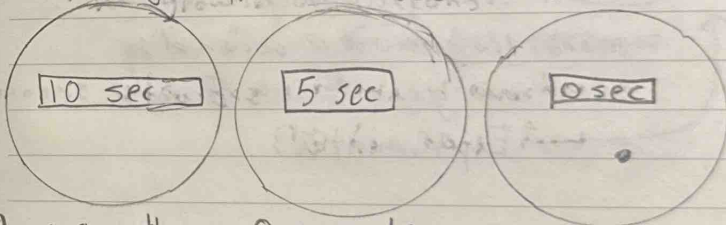


Memo No. 7  
Date 3 / 1 / 25



### Experiment 1

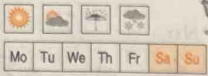
- further growth on 10 seconds.
- small growth on 5 seconds.
- no growth on 0 seconds



- growth on 0 seconds
- no growth on 10 or 5 seconds

### Experiment 2

## Final Day



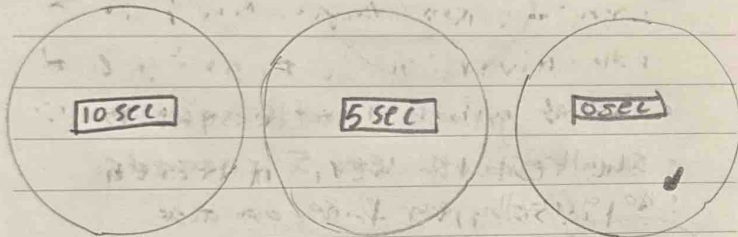
Mo Tu We Th Fr Sa Su

Memo No. 8  
Date 3 / 2 / 25

### Experiment 1

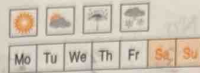


- more growth in 10 seconds & 5 seconds
- still no growth in 0 seconds



- more growth in 0 seconds
- still no growth in 5 or 10 seconds

### Experiment 2



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Memo No. 9  
Date 3 / 3 / 25

## Things I did Differently

- I made my own agar solution
- I kept experiment 1 in a place near a heater and on a tray - I kept experiment 2 in a container in a slightly colder place which might be the reason the results were different
- I also put tape on the petri dishes from the second experiment

## Conclusion

I would say my hypothesis was correct because from the first experiment the 10 second petri dish did have the most bacteria growing in it.

the results that I got from the second experiment show that there must not be any contamination and the location of where the apple slice is "dropped" is important.

## Experiment 1

## Data/Results

Day	0 sec	5 sec	10 sec
1	No Growth	No Growth	No Growth
2	No Growth	No Growth	No Growth
3	No Growth	No Growth	No Growth
4	No Growth	No Growth	No Growth
5	No Growth	No Growth	No Growth
6	No Growth	No Growth	0.5cm diameter
7	No Growth	Less than 0.5cm diameter growth	1.0cm diameter
8	No Growth	1.0cm diameter growth and second growth of less than 0.5cm. Larger one is growing upwards	2.0cm diameter growth. bacteria is growing upwards

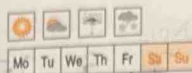


Memo No. _____  
Date 3 / 3 / 25

## Conclusion

I would say my hypothesis was correct because from the first experiment the 10 second petri dish did have the most bacteria growing in it.

the results that I got from the second experiment show that there must not be any contamination and the location of where the apple slice is "dropped" is important.



Memo No. _____  
Date 3 / 4 / 25

Experiment 1

## Data/Results

Day

Day

0 sec

5 sec

10 sec

1

No Growth

No Growth

No Growth

2

No Growth

No Growth

No Growth

3

No Growth

No Growth

No Growth

4

No Growth

No Growth

No Growth

5

No Growth

No Growth

No Growth

6

No Growth

No Growth

0.5 cm diameter

7

No Growth

Less than 0.5 cm diameter growth

1.0 cm diameter

8

No Growth

1.0 cm diameter growth and second growth of less than 0.5 cm.

Larger one is growing upwards

2.0 cm diameter growth.

bacteria is growing upwards



Memo No.

Date 3 / 4 / 25

Mo Tu We Th Fr Sa Su

## Data / Results

Day	0 sec	5 sec	10 sec
1	No Growth	No Growth	No Growth
2	No Growth	No Growth	No Growth
3	No Growth	No Growth	No Growth
4	No Growth	No Growth	No Growth
5	No Growth	No Growth	No Growth
6	No Growth	No Growth	No Growth
7	Less than 0.5cm diametre growth	No Growth	No Growth
8	Less than 0.5cm diametre growth	No Growth	No Growth



Memo No.

Date 3 / 5 / 25

Mo Tu We Th Fr Sa Su

## Aknoledgements

- My dad (for helping me with printing picture)
- My brother (for giving me advise)
- Mr. Downey (for hosting our science fair)
- My Family (for aknoleding me)

## THANK YOU!

