Sat, Dec 20, 2025

Ideas

- water filter
- Blach holes
- Plant growth
- 5 second rule
- Building bridges
- volcanoe

what I picked:

- The 5 second rule Because I always wondered how bacteria grow's.

Timetable

Sun Dec 21, 2025

Dates	To do
Dec, 20, 2025	Make timetable.
Dec, 20, 2025	• chose project.
Dec, 21-26, 2025	•resereach metrial's needed.
Dec, 30, 2025	•Do back ground research
Jan 5, 2026	•Formulate hypothesis, •Start google slides put everything I did in.
Jan 9, 2026	•order metrial's needed for experiment.
Jan, 16, 2026	•counduct an experiment.
Jan, 22, 2026	•analyze the data.

Jan, 24, 2026	• Draw conclusion
Jan, 28, 2026	• check everything to make sure it's ready.
Feb, 3, 2026	• school science fair

Tue, Dec 23, 2025

- I researched everything I needed to conduct the experiment.

Dec, 30 - jan 5 2025

Back ground research

- The rutgers university in 2016 looked at how bacteria transfers surfaces to food, and what they found is that bacteria transfer happens immediately no matter how quick you are and the longer the food stays on the ground the more bacteria will accumulate. The researchers tested four diffrent foods (watermelon, bread, bread with butter, gummies).

The results were that the watermelon had the most contamination and the gummies had the least. also they said "transfer of bacteria from surfaces appears to be affected by the most moisture. Surprisingly the carpet had very low transfer rate compared to the cerimic tiles and stainless-steel.

Fun fact: The CFIA estimates that food poisoning affects approximately 4 million canadians every year. Of the 4 million people 11,500 hospitalize and sadly more then 230 people die.

References

- google

2026 Jan, 6

- I finalized my background research and stareted making google slides.

2026 Jan 7

Details

Name: Is 5 second rule safe?

Question: what kind of surface would have the most bacteria

Hypothesis: I think that wood will have the most bacteria then the tile and carpet because you walk with slippers on wood but they have been found the culprits for spreading bacteria between floors. up to 93% of shoes or slippers have been shown to carry fecal contamination after 3 month's of use

2026, Jan, 9

Materials:

- Pre poured agar petri dishes
  quantity: 6
- cotton swabs
  quantity: 6
- Disposable gloves
  quantity: 1 pair
- Tape
- fork
- Stopwatch
- pear
  quantity: 1

2026 Jan 9

- I ordered all of the meterials needed to conduct the experiment.

2026, Jan, 14

- All of my things I ordered have arrived and I started writing my procedure.

Procedure:

2026, Jan 14

1. wear gloves

2. Take a swab and a pear slice, place the pear on wood floor for 5 seconds.

3. using a fork pick up the pear slice after 5 seconds swab the pears surface then swab onto a clean petri dish and close lid.

4. label the petri dish Wood and tape the petri dish.

5. Take another clean swab and a pear slice, place the pear on carpet for 5 seconds.

6. Using a fork pick up the pears slice after 5 seconds swab the pear surface then swab it onto a clean petri dish and close lid.

7. label the petri dish carpet and tape the petri dish.

8. Take the third pear slice and place it on ceramic tile for 5 seconds.

9. using a fork pick up the pears slice after 5 seconds swab the pear surface then swab onto a clean petri dish and close the lid.

10. label the petri dish cerimic tile and tape the petri dish.

11. take picturs of the 3 petri dishes and put them in a warm place. for 7 days.

12. Take pictures of the petri dishs everyday for 7 days. (24 hours apart.).

Variables:

2026 Jan 14

Manipulated variables:

- The type of surface.

Controlled variables:

- Strogs of petri dishs.
- All droped for 5 seconds.
- kind of food.

Responding variables:

- Wich petri dish will have the most bacteria growth.

Observations 2026 Jan 15

Day 1: No growth on any of the petri dishes.

Jan, 16, 2026

Day 2: No growth in any of the petri dishes.

Jan, 17, 2026

Day 3: There is tiniest amount of growth in all of the petri dishes and ceramic tile has the most bacteria growth out of the others.

Jan, 18, 2026

Day 4: The bacteria has grown bigger in all of the petri dishes, the ceramic tile and wood have a orange coloured coloney growing.

Jan, 19, 2026

Day 5: All of the petri dish have bacteria, the ceramic tile has alot of small bacteria composed to wood and carpet have bigger bacteria

but less coloneys and all of the petri dishe have a orange coloured bacteria, wood and carpet have these cotton dots like bacteria growing. also there is a yellow colour bacteria growing in the ceramic tile petri dish.

Jan, 20, 2026

Day 6: There is no big change on the wood and carpet petri dishes rather then some new white bacteria that has a black spot in the middle but the ceramic tile petri dish has a new red bacteria and it's very tiny, also the ceramic tile looks like it has the most bacteria.

Jan, 21, 2026

Day 7: There is no other bacteria Just that the black spots have have been darker and the ceramic tile petri dishe's red bacteria colony has not grown bigger that I expected to grow larger.

Jan, 21, 2026

- I was done my first experiment and I dicided to do my second experiment tommrow.

Second experiment

Jan, 23, 2026

Day 1: No growth in all of the petri dishes.

Jan, 24

Day 2: still no growth in all of the petri dishes.

Jan, 25, 2026

Day 3: There is becteria growing in all of the petri dishes and the ceramic tile petri dish already has a big bacterial colony that I dindn't expect.

Jan, 26, 2026

Day 4: Further growth in all of the petri dishes also the carpet has 1 yellow colony growing.

Jan 27 2020

Day 5: No big changes observered in all of the petri dishes the wood petri dish has a orange colony, the ceramic tile has a very large colony has gotten bigger then day 3.

Jan, 28, 2020

Day 6: The wood petri dish changed colour in one colony that turned orange into red and the carpet petri dish has a yellow colony, no changes in the ceramic tile petri dish.

Jan, 29,

Day 7: No changes in all of the petri dishes.

Jan 29

- I was done my second experiment and do my analysis tomorrow

First experimet Jan, 30

Results

Day	wood	carpet	ceramic tile
1:	No growth	No growth	No growth
2:	No growth	No growth	No growth
3:	2 Colonies	6 Colonies	16 Colonies
4:	13 Colonies	19 Colonies	29 Colonies
5:	21 Colonies	36 colonies	47 colonies
6:	32 colonies	41 Colonies	65 colonies
7:	34 Colonies	50 Colonies	over 80 colonies

Second experiment Jan 31

Results

Day	wood	ceramic tile	carpet
1:	No growth	No growth	No growth
2:	No growth	No growth	No growth
3:	1 colonies	6 colonies	5 colonies
4:	13 colonies	14 colonies	9 colonies
5:	27 colonies	22 colonies	25 colonies
6:	41 colonies	26 colonies	28 colonies
7:	51 colonies	39 colonies	48 colonies

Conclusion

Feb. 1.

- Based on the data my hypothesis was not correct because in the first experiment ceramic tile had the most bacteria and wood had the least, carpet had the second most. I think I know why ceramic tile had the most bacteria because most houses have ceramic tile in the washrooms because of it being highly water resistance also washrooms are breeding gounds for bacteria, and in my case ceramic tile were in the washroom and where I droped the pear slice, so based on my data the 5 second rule is not safe.

- I wrote my conclusion and I am going to finalize everything tommrow and write my sources of error and my aknolegments and my application then ill be finished. Feb. 1.

Feb. 2.

{Application}

- I do not recommend buying pre Poured agar petri dishes because sometimes there might already have bacteria growing in them and plus there cheaper if you by the agar slution and petri dishes separately.

- Next time if I do this experiment I will run multipule experiments with different surfaces also with type of foods.

- One of the challenges I faced were that some of the petri dishes already had bacterial growth so they were not useable anymore

and that keeping the right Temperature for boath of the experiment. and I do recommend this project for further study.

Sources of error Feb, 2

- In the second experiment, ceramic tile had the least growth, and wood had the most bacterial growth. I think it could have been because I dindn't put any tape on the second experiment, so I did a mini experiment about weather tape actually affected the bacterial growth. What I found was that the petri dish with the tape on it had more bacterial growth; it could have been because it sealed all of the moisture insides providing a warm, humid enviroment for rapid bacterial mulitiplication.

Acknowledgement

Feb, 2

- My dad for ordering everything I needed to counduct the experiment.
- Mr. Abbasi for checking my work and giving me feedback.
- My family for encourging me.
- My sister for giving me tips.
- My brother for helping me.

Feb, 2,

- I was finally done my project also nervous and extied for the school sceince fair, I hope I get picked for the CYSF.