



Highly Commended

Science Investigation

Year 3 - 4

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**Southern Vales Christian
College - Morphett Vale**



5 Second Rule

Amber Prunty / Oliphant Awards / ID: 0603-004 / Southern Vales Christian College



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Introduction

We've all heard about the 5 second rule when food accidentally falls on the floor, but how true is this?

I'm going to be exploring this idea on how true this is and how much growth actually grows on the food you eat. There are some very deadly bacteria that you should not eat.

Below are the items used for the experiment.



Method

Things I need:

6 Agar plates

1 apple (cut into slices)

1 piece of bread (cut into smaller pieces)

Camera

Timer

Method:

First I'm going to grab three Agar plates. Then I'm going to cut up an apple into thin slices. I'm going to use one Agar plate with one of the apple slices before it touches the floor, one Agar plate and an apple slice after it's been on the floor for 5 seconds, then one Agar plate and an apple slice after it's been on the floor for 30 seconds, all using a timer as well.

After 3 days, I'm going to check the growth on each plate and record them down. Then I will look at them again on day 7, I will put all my findings together. I will then repeat this again with some bread.

Theory

Apple

Control plate – no growth

5 second plate – a little growth

30 seconds – a lot of growth

**I think the apple will have the most growth as it is wet **

Bread

Control plate – no growth

5 second plate – a little growth

30 seconds – a lot of growth

Results

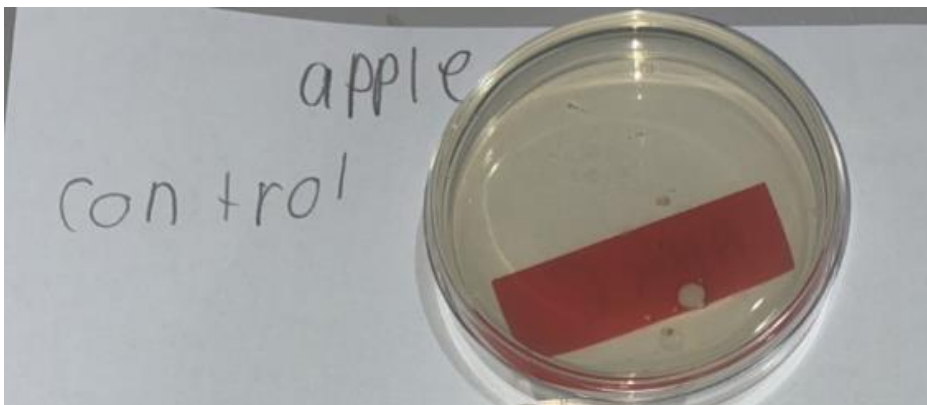
Apple slices

Apple – Control – 3 days growth



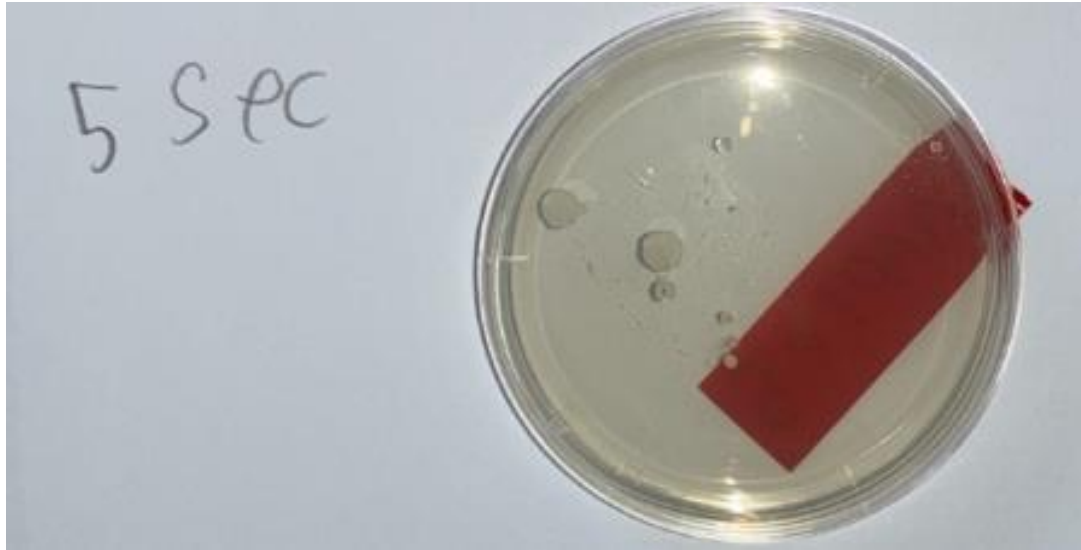
My observation – a little growth

Apple – Control – 7 days growth



My observation – a little growth

Apple – 5 Seconds – 3 days growth



My observation – patchy growth

Apple – 5 Seconds – 7 days growth



My observation – spread growth

Apple – 30 Seconds – 3 days growth



My observation – a little growth

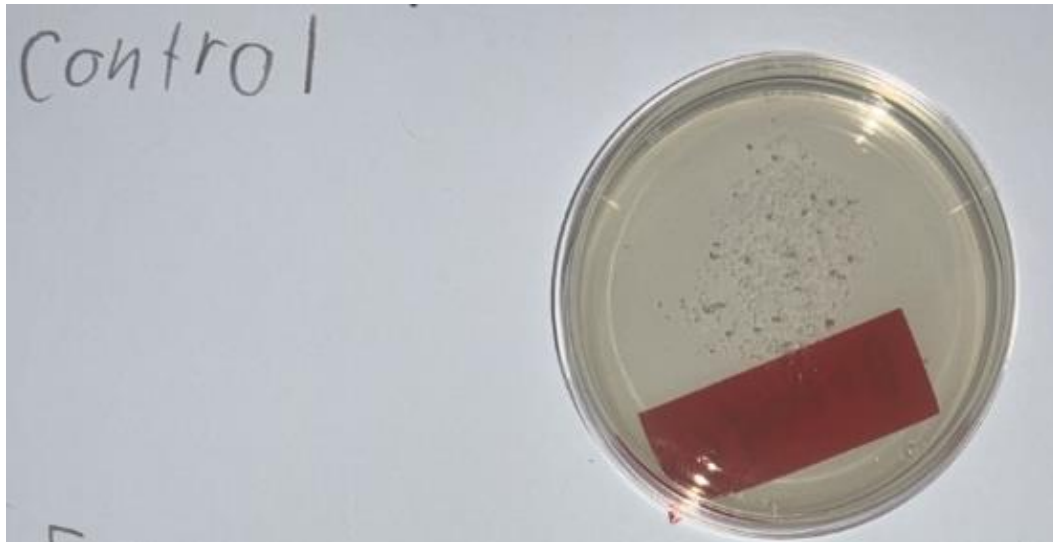
Apple – 30 Seconds – 7 days growth



My observation – spread growth

Bread slices

Bread – Control – 3 days growth



My observation – no growth

Bread – Control – 7 days growth



My observation – more confined growth

Bread – 5 seconds – 3 days growth



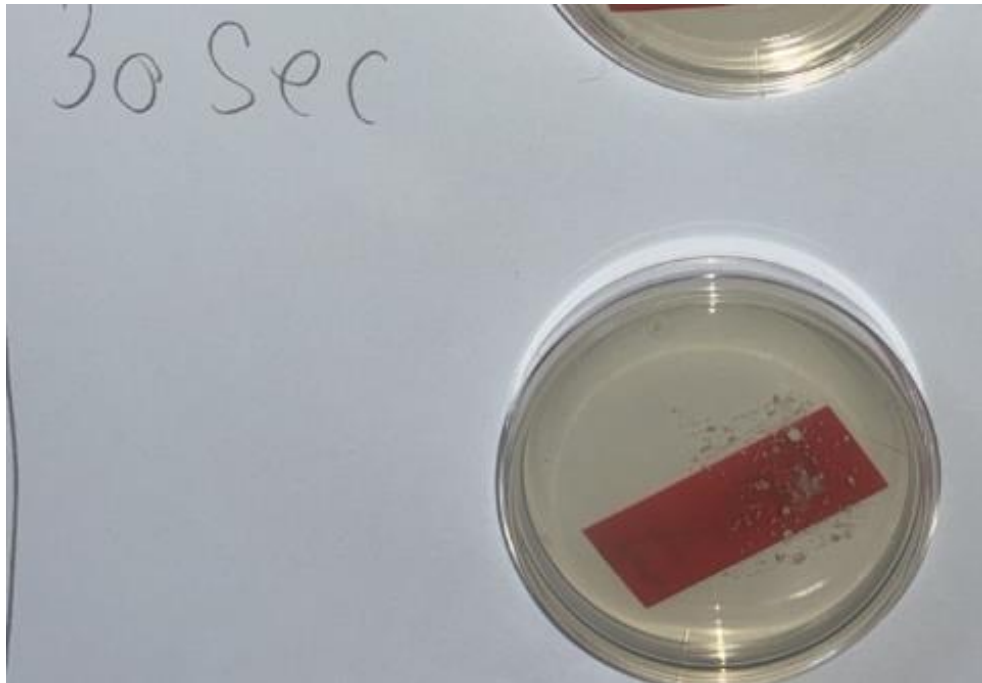
My observation – a little growth

Bread – 5 seconds – 7 days growth



My observation – more growth, little dots

Bread – 30 seconds – 3 days growth

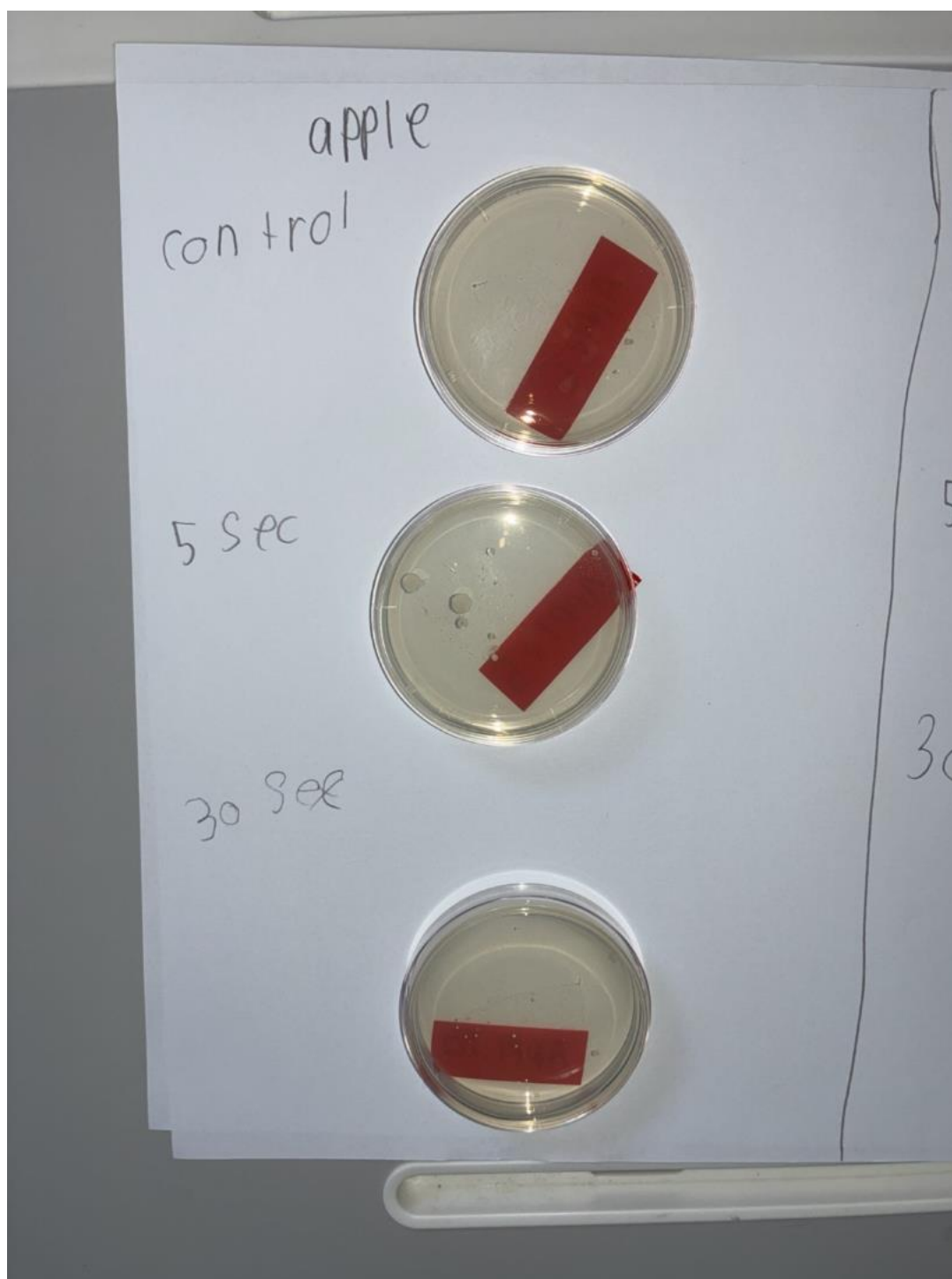


My observation – more growth compared to 5 seconds

Bread – 30 seconds – 7 days growth



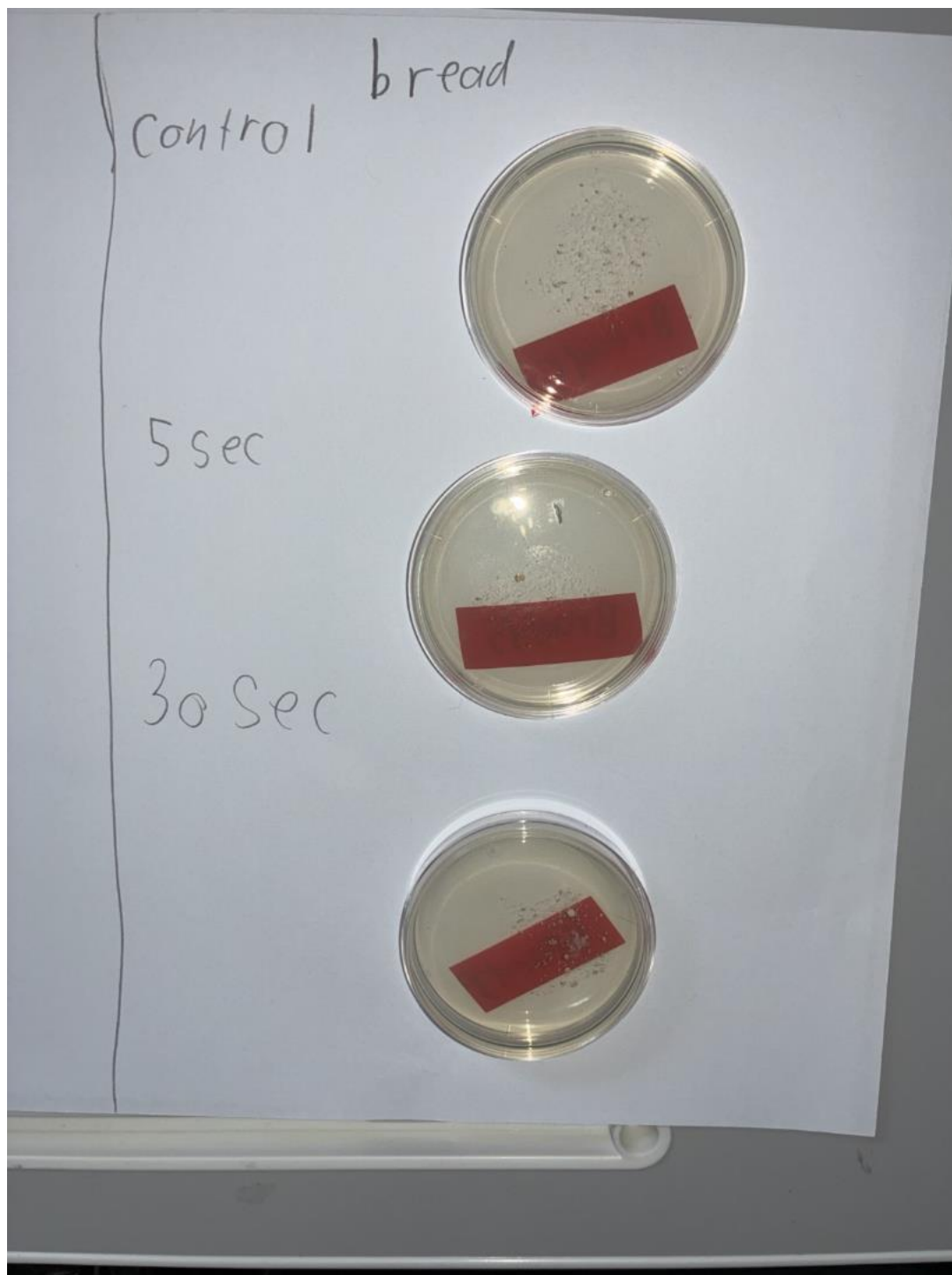
My observation – lots of growth expanding



Apple Slices – 3-day observation at a glance.



Apple Slices – 7-day observation at a glance.



Bread Slices – 3-day observation at a glance.



Apple Slices – 7-day observation at a glance.

Conclusion

Some things that I noticed during my observations are that bread growth seems to grow more than the apple slices. This is different to my original theory on the apple slices because they were wet.

I noticed with the results after 7 days, that although the control still had some growth to it, it was better than having the food dropped on the floor for 5 or 30 seconds. However, if I was to drop my food on the floor, it would be far better to pick it up quickly than to leave it there for more time.

If I was to repeat the experiment, I would maybe try dropping a piece of food in different areas of the house to see if the growth pattern was any different.

References

Images

- Images on pages 1 and 2 are stock images from Microsoft Word
- All remaining images are photos of my experiment

Acknowledgements

- Acknowledgement to my mum for helping me format my project on the computer.

OSA RISK ASSESSMENT FORM

for all entries in (✓) ☐ Models & Inventions and ☒ Scientific Inquiry

This must be included with your report, log book or entry. One form per entry.

STUDENT(S) NAME: Amber Prunty ID: _____

SCHOOL: Southern Vales Christian College

Activity: Give a brief outline of what you are planning to do.

Test the theory of food being on the
floor for 5 seconds using Agar
plates to see how much grows

Are there possible risks? Consider the following:

- Chemical risks: Are you using chemicals? If so, check with your teacher that any chemicals to be used are on the approved list for schools. Check the safety requirements for their use, such as eye protection and eyewash facilities, availability of running water, use of gloves, a well-ventilated area or fume cupboard.
- Thermal risks: Are you heating things? Could you be burnt?
- Biological risks: Are you working with micro-organisms such as mould and bacteria?
- Sharps risks: Are you cutting things, and is there a risk of injury from sharp objects?
- Electrical risks: Are you using mains (240 volt) electricity? How will you make sure that this is safe? Could you use a battery instead?
- Radiation risks: Does your entry use potentially harmful radiation such as UV or lasers?
- Other hazards.

Also, if you are using other people as subjects in an investigation you must get them to sign a note consenting to be part of your experiment.

Risks	How I will control/manage the risk
None Biological Risk	The mould/bacteria will be contained in the Agar plates/containers and stored safely during the experiment

(Attach another sheet if needed.)

Risk Assessment indicates that this activity can be safely carried out

RISK ASSESSMENT COMPLETED BY (student name(s)): Amber Prunty

SIGNATURE(S): Ach

☒ By ticking this box, I/we state that my/our project adheres to the listed criteria for this Category.

TEACHER'S NAME: Donna Smith

SIGNATURE: A Smith DATE: 24-6-26

5 Sec rule planning

- introduction
- method
- discussion
- results

we've all heard about the 5 second rule when food accidentally falls on the floor ~~but~~ how true is this?

I'm going to be exploring this idea on how true this is and how much

growth actually grows on the

food you eat. There are some very bad bacteria to as not that bad.

method

things I need

- 6 agar plates
- 1 apple
- 1 slice of bread
- Camera
- timer

Method Continued(1)

First, I'm gonna grab three Agar plates. Then I'm going to cut up an apple in thin slices. I'm going to use one agar plate to use one of the slices on then one agar plate to use when I place apple slices on the floor for five seconds and one for 30 seconds, using a timer to help. After three days, I'm going to check the growth on each plate and record them down. Then I will look at them again after two more

Method Continued (2)

days after this period
I will put all my findings
together. I will then repeat
this again with some bread.

theory

apple

- plate 1 no growth
- plate 2 a little growth
- plate 3 a lot of growth

bread

- plate 1 no growth
- plate 2 a little growth
- plate 3 a lot of growth

I think that apple

will have more growth
because it is wet.

Observations

7 days

Apple

Bread

Control

little
growth

Control

more
continued
growth

5 Sec

dig

growth

2 bacteria?

55 Sec

more

growth

little
dots

30 Sec

spread
growth

30 Sec

lots of

growth

expanding

Observations

7/3 days

Apple

Control

little
growth

5 Sec

patchy
growth

30 Sec

little
growth

Bread

Control

no
growth

5 Sec

little
growth

30 Sec

more
growth