Investigate the medicinal use of plants by Australian Aboriginal and Torres Strait Islander Peoples in infection control

Name: **Date:**

Aim/Question What do you want to find out?	To investigate the medicinal use of plants by Australian Aboriginal and Torres Strait Islander Peoples in controlling bacterial infection
Prediction **INDIVIDUAL**	I **predict** the agent that will inhibit bacterial growth the best will be: ☐ Tea Tree oil ☐ Eucalyptus oil ☐ Manuka honey ☐ Salt water ☐ Rubbing Alcohol
Independent variable What will you change?	
Dependent variable What will you measure?	I will measure: | I will measure this using:
Controlled variables What will you keep the same?	
Hypothesis	If _____ then _____ because _____ _____ _____ _____

Materials

(list all the equipment you will need - use the variables to help you)

Non-pathogenic bacteria	Gloves	Permanent marker	
petri dishes & nutrient Agar		Sticky tape	Bunsen burner
cotton buds	Scissors	Incubator	Matches
Tea Tree oil	Filter paper	Salt water	Heat proof mat
Eucalyptus oil	Tweezers	Manuka honey	
Rubbing Alcohol			

Risk assessment

What risks can you identify in this investigation? What measures can be taken to minimise the risks?

Risk	**How will I manage the risk**

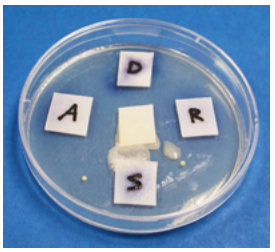
Method

1. Collect your equipment and set up the Bunsen Burner.

NOTE: Do not remove the lid of the Petri dish until you are ready to inoculate it

2. On the lid of the Petri dish write your name, group members names and the sample you are testing around the edge of the lid
3. Using a sterile cotton bud collect some bacterial sample, remove the lid of the Petri dish and LIGHTLY rub the cotton bud on the agar in a zigzag pattern across the whole plate and put the lid back on. Dispose of the cotton bud.

4. IF YOU ARE MAKING THE CONTROL GO TO STEP 8
5. Light the Bunsen Burner and turn to blue flame.
6. Wave the tweezers in the flame to kill any bacteria that may be on them, DO NOT overheat them
7. Pick up a piece of filter paper that has been soaking in your sample and place it at 12 o'clock, repeat this so there is a piece of sample at 3 o'clock, 6 o'clock and 9 o'clock. Put the lid back on the Petri dish.



8. Wrap sticky tape around the edge of the Petri dish securing the lid to the base to prevent the lid from being removed again.
9. Place the Petri dish in the incubator with the lid down to prevent any water droplets from falling on the agar and culture
10. Leave for 24 - 48 hours
11. Record observations and the number of colonies growing on your dish. Share the results with the class. Take photos of the results.

Data collection TABLE

Antibacterial agent	Number of colonies				
	Test 1	Test 2	Test 3	Test 4	Average
Control					
Tea tree oil					
Eucalyptus Oil					
Manuka honey					
Salt water					
Rubbing Alcohol					

Observations

Antibacterial agent	Observations	Diagram / Photo
Control		
Tea tree Oil		
Eucalyptus Oil		
Manuka honey		
Salt water		
Rubbing Alcohol		

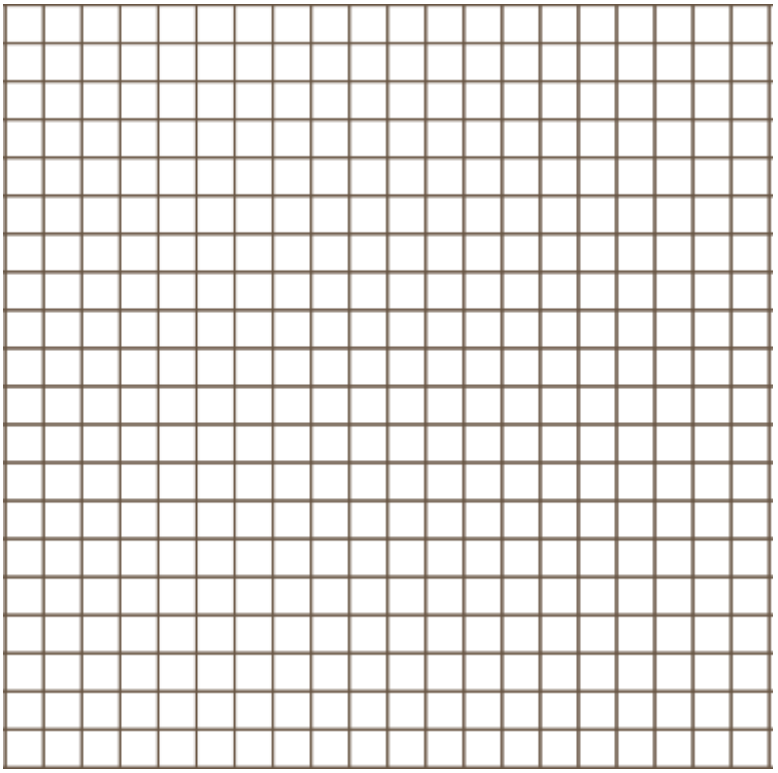
GRAPH

Graph your results using a line graph.

The vertical axis is the average number of colonies.

The horizontal axis is the antibacterial agent

INDIVIDUAL



Discussion

Data

What does your data tell you?

1. Is the investigation an example of a fair test? **Explain** by referring to the variables in the experiment.

_____

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_____

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2. **State** which antibacterial agent was the best and which was the worst in this experiment.

_____

_____

3. Did the results support or refute your hypothesis. **Justify** your response using specific data from the results.

4. **Conclude** which antibacterial agent performed the best. **Explain** your answer using your results to support your answer.

5. **Describe** any problems you and the class had with this experiment. **Explain** what changes would you make if you were to repeat it.

Conclusion

4 sentences summarising the experiment.

1-aim
2-method
3-results
4-hypothesis

	_____ _____