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Relationships between nitrate,  
plankton levels and the  
distance from shore



Developing curiosity and confidence through student-led  
scientific research on the waters of the Salish Sea

# NITRATE AND PLANKTON LEVELS

Relationships Between Nitrate, Plankton Levels and the  
distance from shore:

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# Our Problem

- We wanted to know how the plankton levels would effect the nitrate levels at varying distances from shore.



# Our Hypothesis

- If: We measure plankton levels at varying distances from shore
- Then: The nitrate levels will differ with the plankton levels
- Because: There is a relationship between plankton and nitrate levels

# Procedure

- ④ Our first step of our procedure was to chart a location to do our deployments.
- ④ Then we would tell the sailing crew where to go for our deployments.
- ④ On our way to the area we prepared the niskin bottle and the plankton net for deploying.
- ④ When arrived to the area we would deploy the devices.

# Procedure (cont.)

- After our deployments we would collect samples.
- We would test to see the nitrate levels with colorimeter and we would measure how much plankton was in the water.
- We repeated this procedure several times but in different places.

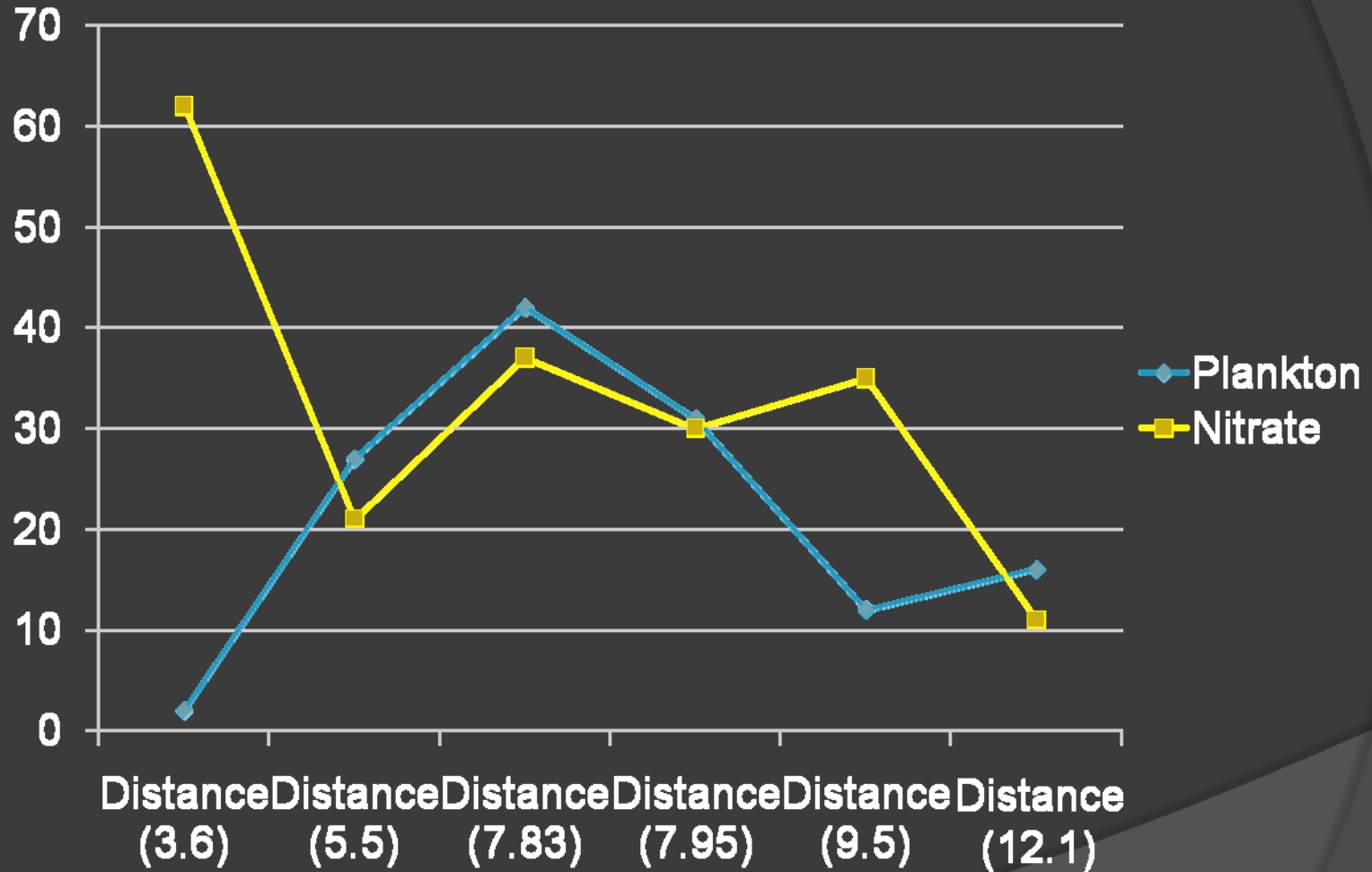


# Quantitative Data

Distance from Seattle (nautical miles)	3.6	5.5	7.83	7.95	9.5	12.1
Plankton (ml)	2	12	27	42	31	16
Nitrates (ppm)	.62	.3	.21	.37	.3	.11

- We found that Nitrates did not have a direct relation with distance from Seattle
- We think that nitrate levels did not have a direct relationship with the distance from Seattle
- They probably had a relationship with the distance from shore.

# Our Total Data



# Experimental Errors

- ⦿ We could have put the niskin bottle and plankton net at different depths and we also could have left the plankton net in the water for longer or shorter than we wanted.
- ⦿ We could have also measured nitrate and plankton amounts inaccurately.

# Conclusion

- Our conclusion is that our hypothesis was supported. The nitrate levels and plankton levels both spiked at one point, but with too many nitrates, the plankton level would be low. With the right amount of nitrates, the plankton level would become higher.
- The Plankton levels decreased as we got farther away from Seattle.