

Ecology Lab: Albatross Bolus
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This is an introductory laboratory experience to introduce students to the effect of marine debris on albatross.

After this engaging activity, students can do an on campus trash lab, where students collect trash in different parts of the campus and they collect data about the type and numbers of trash. Students question the effect of local trash on organisms. This leads to students questioning, developing hypothesis, and designing controlled experiments on the effects of marine debris on daphnia. Students perform their independent daphnia experiment in the classroom, collect data, work collaboratively and make a power point presentation on their experimental results which they present to the class.

Albatross Bolus Procedure

- 1. Students dissect an Albatross bolus with a lab group.**
- 2. Students collect data in a data table they construct.**
- 3. The bolus dissection will be organized into natural and un-natural debris data. Students will find many types of plastics in the bolus.**
- 4. After students work in a lab group dissecting the bolus, students share their data with all lab groups in their class, and also share their data with other period classes data.**
- 5. Work with students in the computer lab to teach them how to use Excel to produce data tables and graphs.**
- 6. Students work with their lab partners to discuss the data and form a conclusion about marine debris effect on Albatross.**
- 7. Lab groups write their conclusion and print out their data tables and graphs and do an oral presentation of their analysis in front of the class.**

Here is a link to the Tagging Of Pacific Predators website where you can see the flight paths of tagged juvenile black-footed albatross in the Pacific. Show the students this and tell them how to access it if they want to check out other open ocean predator tracks

http://www.topp.org/species/black_footed_albatross

Vreeburg class graphing exercise

14-Sep-10

Step 1: Organize your data!

Were there more pieces of Natural or Non-natural prey items in our boluses on August 31?

Period	Natural	Non-Natural		These data were
	6	51		41
	6	22		84
	1	15		93
	1	32		58
	1	50		39
	1	39		50
	2	54		32
	2	26		39
Total				
Average				
Standard deviation				

Step 2: Prepare your data for graph.

This is the easiest way to prepare your data so that excel can make the graph you want.

TOTALS	
Prey item	Total # pieces
Natural	
Non-Natural	

Step 3: Think about other ways to represent your data.

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Our Question Was: Were there more pieces of Natural or Non-natural prey items in our boluses on August 31?

Period	Natural	Non-Natural
6	51	41
6	22	84
1	15	93
1	32	58
1	50	39
1	39	50
2	54	32
2	26	39
Total	289	436
Average	36.125	54.5
Standard deviation	14.67200931	22.53251619

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TOTALS	
Prey item	Total # pieces
Natural	289
Non-Natural	436

Step 3: Think about other ways to represent your data.

Scientists most often use averages and standard error to describe data. An average or mean is a measure of Central Tendency and standard error is a measure of Variance.

AVERAGES			
Prey item	Average # pieces	Standard deviation	Standard Error
Natural	36.125	14.67200931	1.834001164
Non-Natural	54.5	22.53251619	2.816564523