Shape of Life
The Story of the Animal Kingdom

Name_____ Period/Class_____ Date_____

Claim-Evidence-Reasoning-Page 1
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Question: How does climate change (lower pH and higher temperatures) affect feeding, growth and interaction between species in the intertidal?

Claim (answers the question)	
Evidence (scientific data that supports the claim)	Crabs Whelks Abalone Other
Reasoning (describes why the evidence supports the claim)	

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Claims-Evidence-Reasoning-Page 2
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Question: How does climate change (lower pH and higher temperatures) affect feeding, growth and interaction between species in the intertidal?

	4	3	2	1	0
Claim – a conclusion that answers the original question	• Scientifically accurate • Completely answers the question • Common inaccurate claim(s) are clearly addressed.	• Scientifically accurate • Nearly completely answers the question • Inaccurate claim(s) are only generally addressed, no specifics	• Partially scientifically accurate • Partially answers the question • Inaccurate claim(s) are not addressed	• Is not scientifically accurate overall • Does not adequately answer the question	No claim
Evidence – scientific data that supports the claim	• The data are scientifically appropriate to support the claim. • The data are thorough and convincing – enough details and evidence provided. • Proper units are used in data • Shows with evidence why alternate claims do not work	• The data are scientifically appropriate to support the claim • The data are basically sufficient and convincing, but tend to be more general and not as specific and in depth • Does not address why alternate claims do not work • Evidence may be repetitive	• The data relate to the claim, but are not entirely scientifically appropriate • The data are not sufficient, though generally support the claim	• There is some evidence provided, but it is not logically linked to the claim or scientifically appropriate	No evidence provided
Reasoning – describes why the evidence supports the claim	• Reasoning clearly links evidence to claim • Shows why the data count as evidence by using appropriate scientific principles • There are sufficient scientific principles to make links clear between claim and evidence	• Reasoning adequately links claim to evidence • Includes related scientific principles, but only passably clarifies why this data count as evidence • Reasoning tends to be more general and shows only partial depth of content understanding	• Reasoning does not adequately link claim to evidence, or clarify why data count as evidence • Includes related and non-related scientific principles, and shows little depth of content understanding	• Reasoning is clearly insufficient and relates only tangentially to question and claim at hand • Scientific understanding is very limited	Does not provide reasoning

Rubric adapted from one by Kevin J. B. Anderson from K. McNeill and J. Krajcik, NSTA, and SBAC Argumentative Writing Rubric for grades 6-11
https://dpi.wi.gov/sites/default/files/imce/science/CER%20Rubric.docx

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Identify and Interpret (I^2)-Page 1
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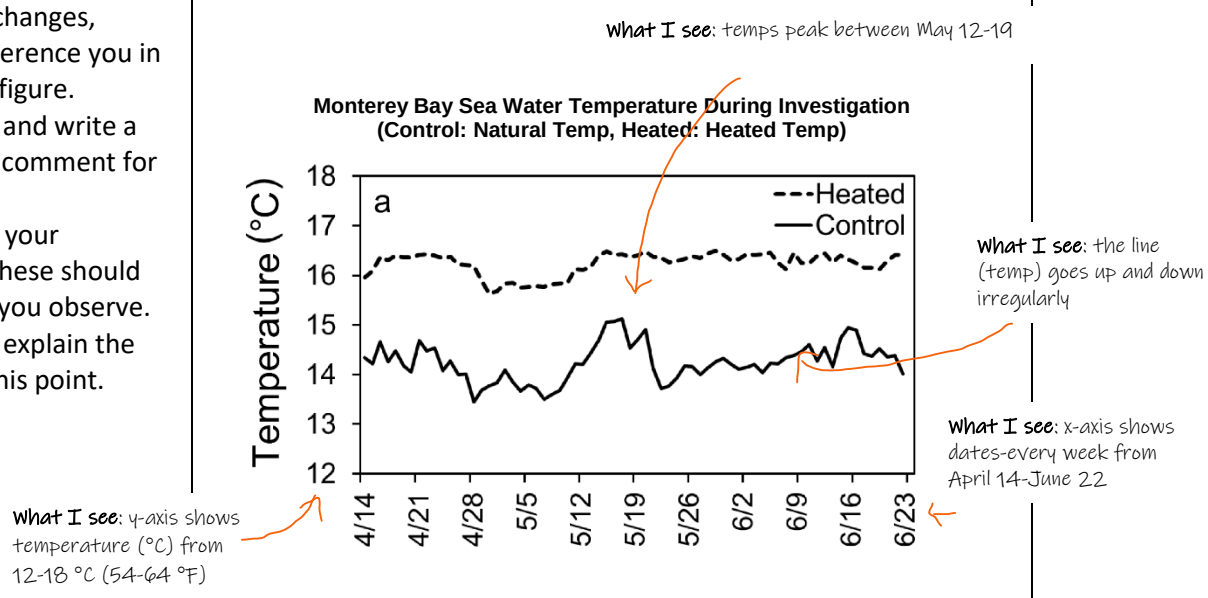
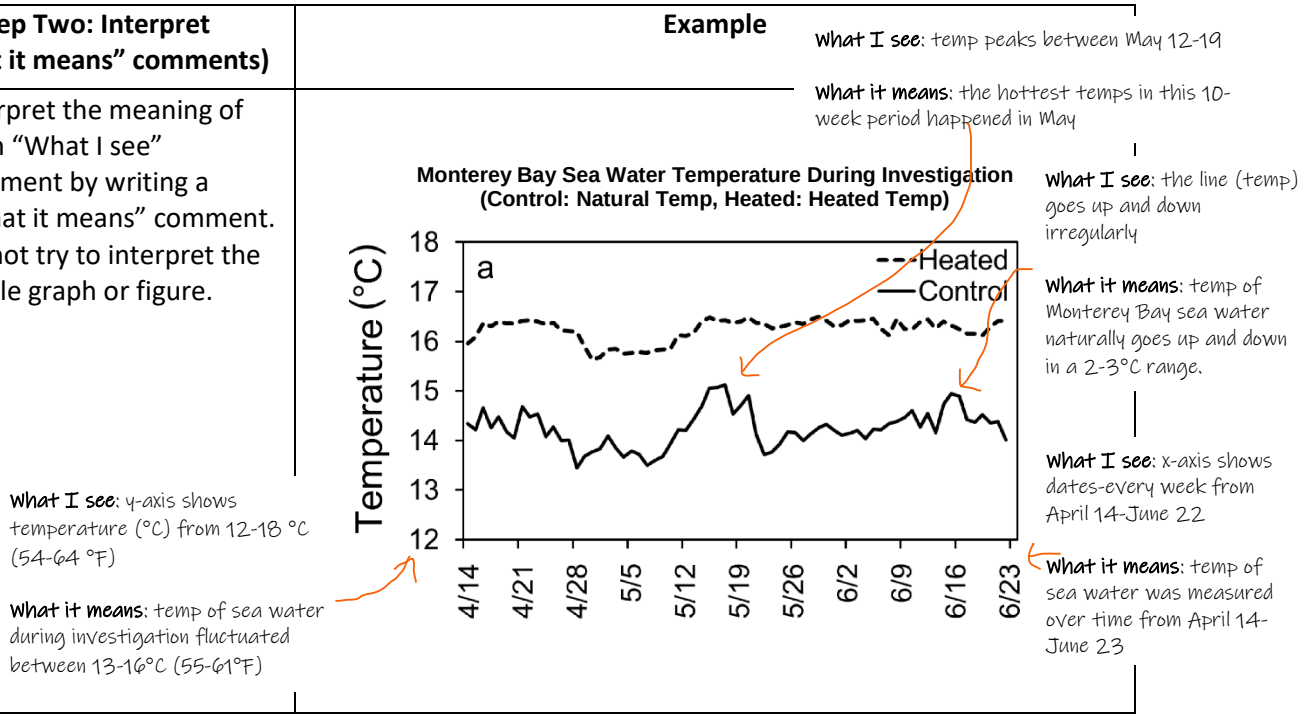
Step One: Identify ("What I see" comments)	Example
• Identify any changes, trends or difference you in the graph or figure. • Draw arrows and write a "What I see" comment for each arrow. • Be concise in your comments. These should just be what you observe. • Do not try to explain the meaning at this point.	

Step Two: Interpret ("What it means" comments)	Example
• Interpret the meaning of each "What I see" comment by writing a "What it means" comment. • Do not try to interpret the whole graph or figure.	

Identify and Interpret (I^2)-Page 2
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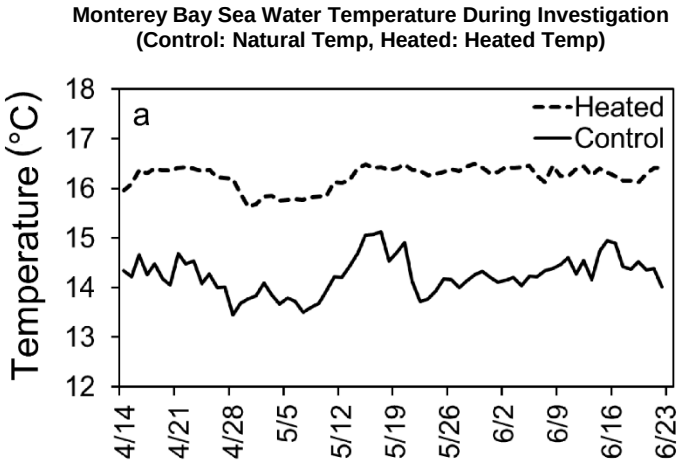
Step Three: Caption and Questions	Example
• Write a caption for the graph or figure. • Start with a topic sentence that describes what the graph of figure shows. • Then join each "What I see" comment with its "What it means" comment to make a sentence. • Build a coherent paragraph out of your sentences.	

Caption: This line graph shows the temperature of Monterey Bay sea water over the 10-weeks of the investigation. The x-axis shows that temperature was measured over time between April 14 and June 23. The y-axis shows temperature from 12-18 °C (54-64 °F) which the natural temperature of the sea water fluctuated between. There was one peak of warm water between May 12-19. The temperature of the water naturally goes up and down in 2-3°C range.

Questions I have: Why does the temperature of the bay naturally go up and down so much? Why was the water so warm between May 12-19?

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Identify and Interpret (I^2)-Page 3
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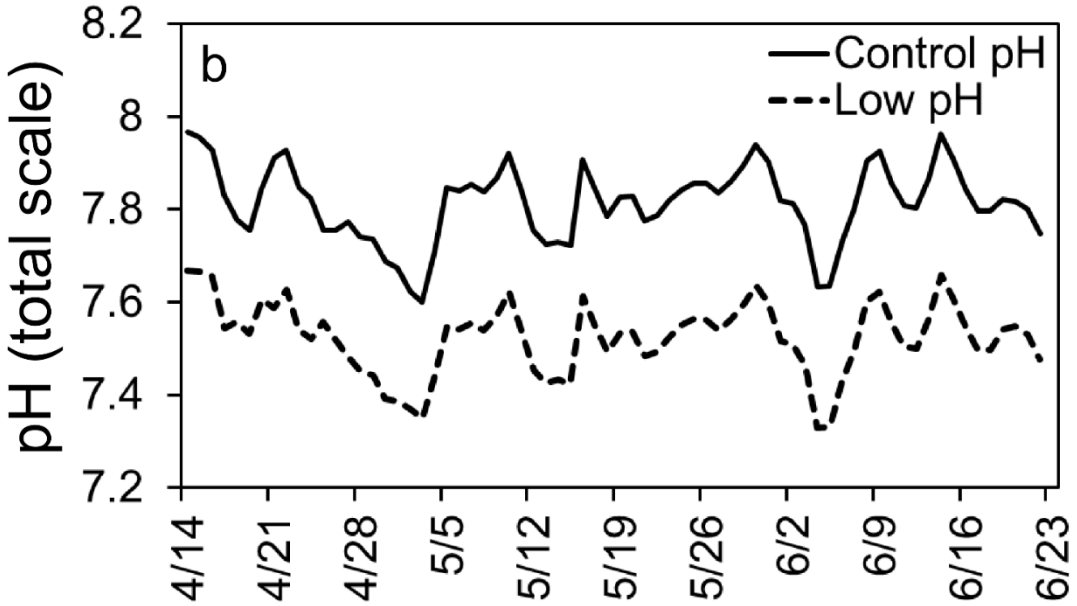

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Data Sheet: Effects on Crabs-Page 1

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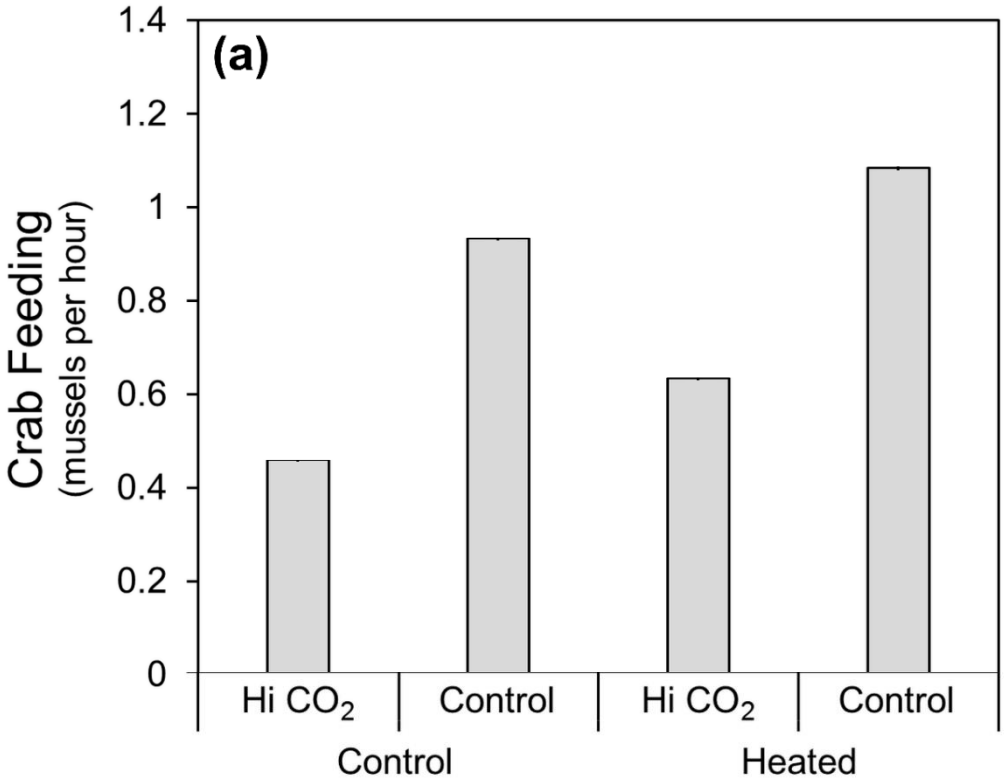

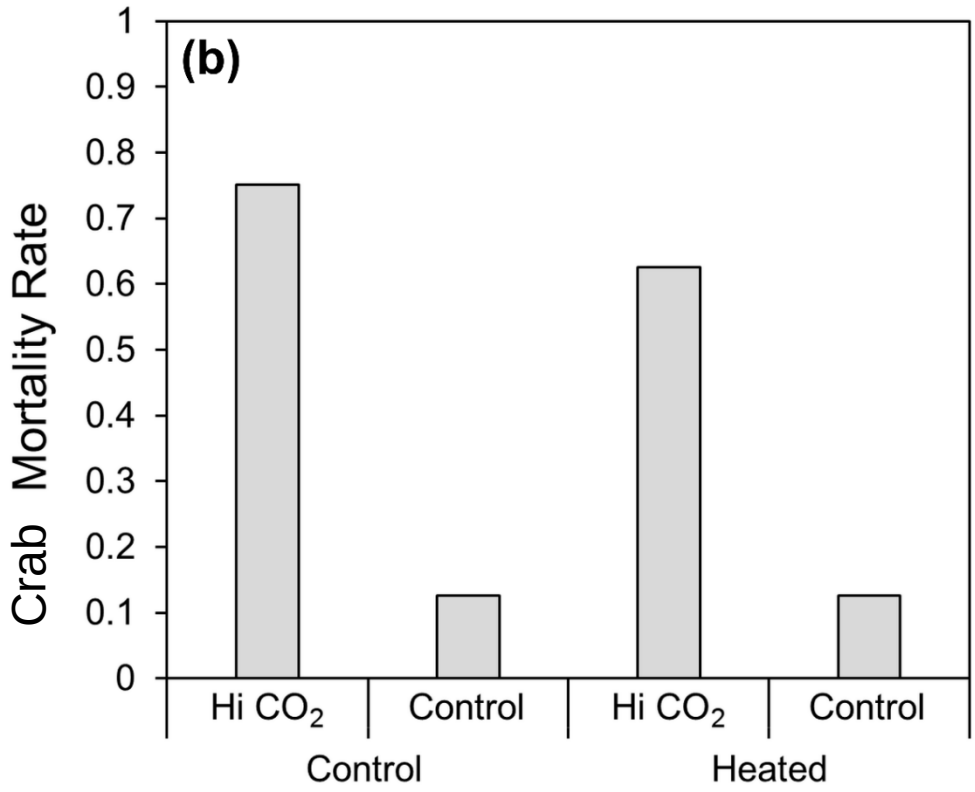

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Data Sheet: Effects on Whelk Feeding-Page 1
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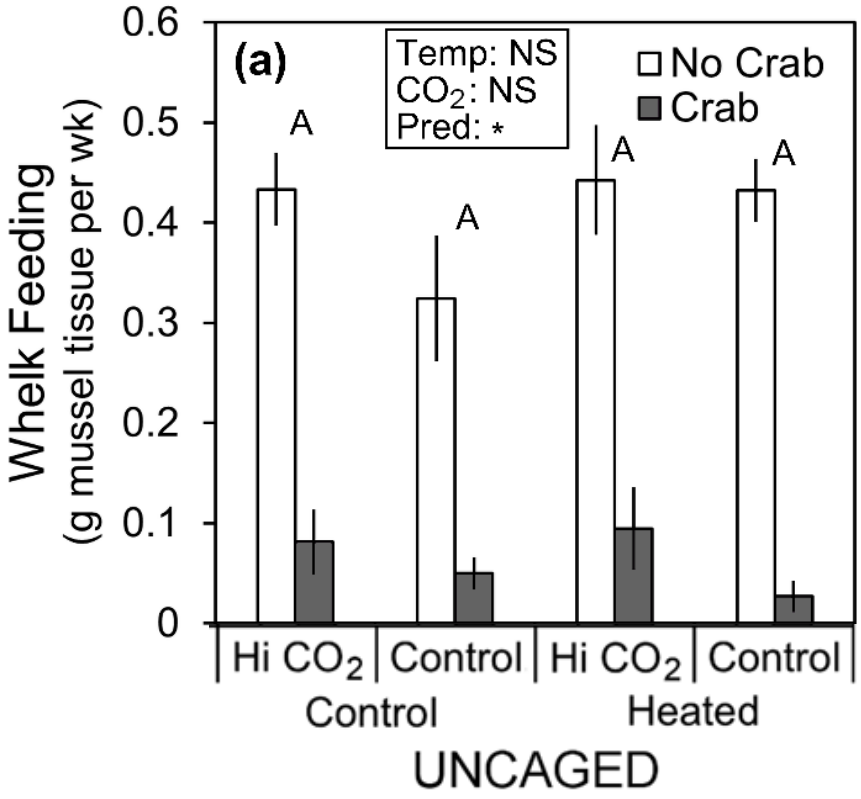

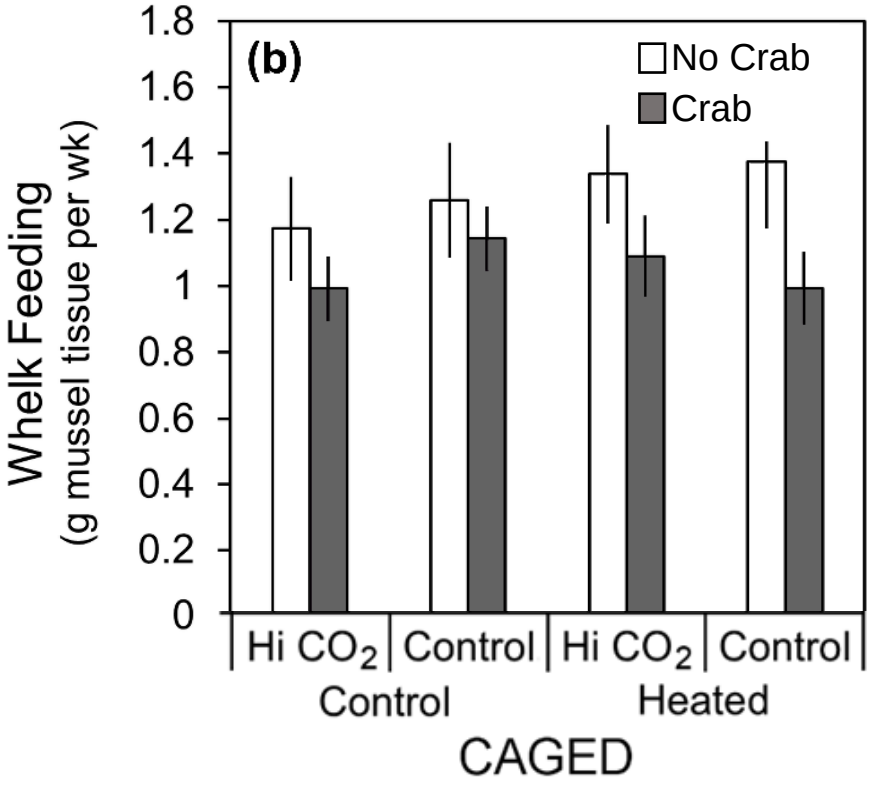

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Data Sheet: Effects on Whelk Shell Growth-Page 1

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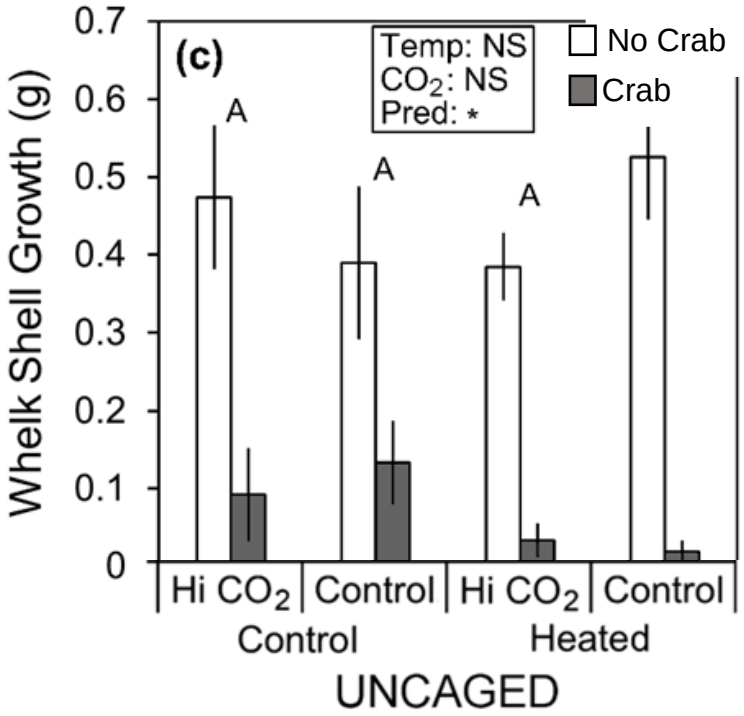

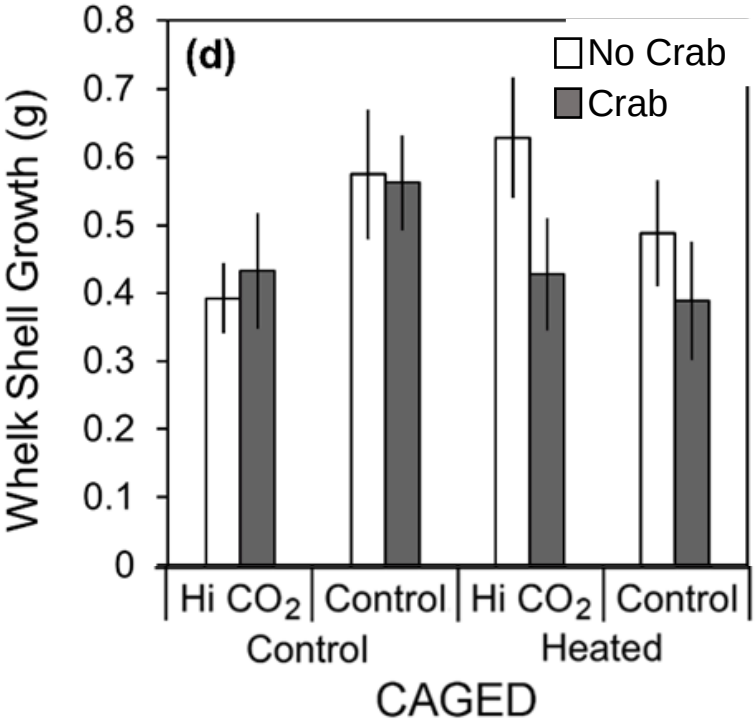

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Data Sheet: Effects on Abalone Feeding-Page 1

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