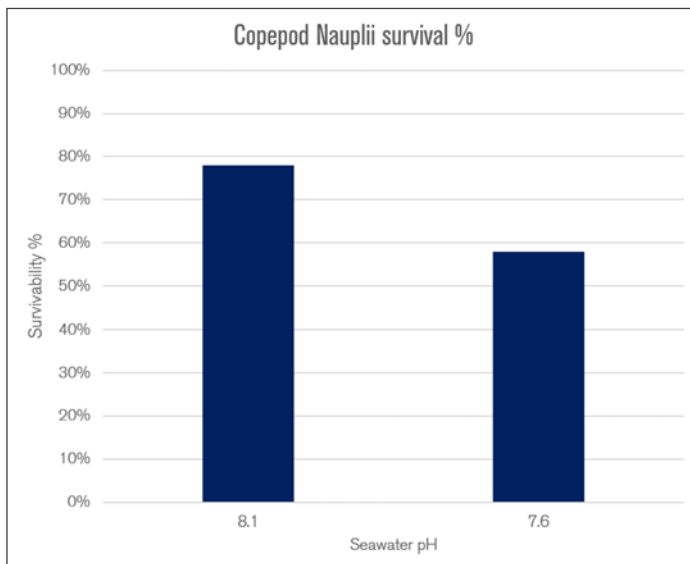
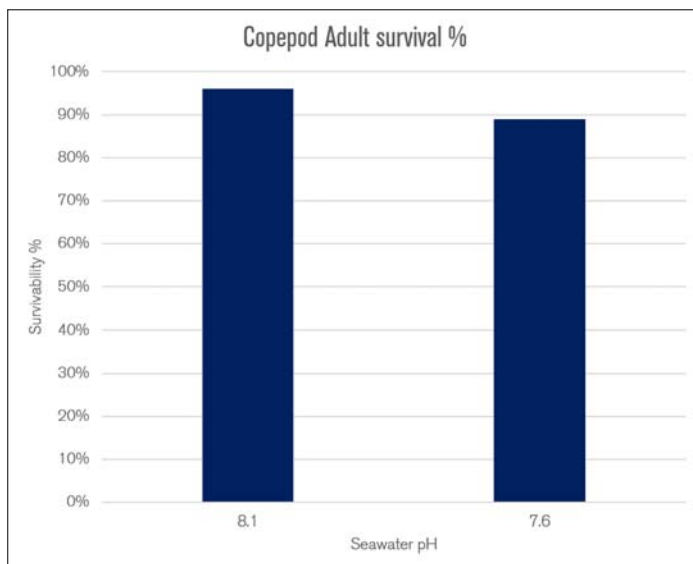


STUDENT SHEET 4c

Copepod survival data



Simplified data set from Catlin Arctic Survey

The charts above show the survival rate of the adult copepods and copepod nauplii (larvae) when exposed to current seawater pH (8.1) and then with a second set exposed to seawater pH (7.6) predicted for the future.

For the adult copepods, 15 *Calanus* copepods were counted into each exposure at the start. Experiments ran for 7 days and alive adults were counted at the end of the experiment to see how many survived.

For the copepod nauplii (larvae) 30-50 *Calanus* copepods were counted into each exposure at the start. Experiments ran for 7 days and alive nauplii were counted to see how many survived.

Answer all questions:

1. What percentage of adult copepods survived when exposed to current levels of pH?
2. What percentage of adult copepods survived when exposed to future levels of pH?
3. What is the difference in percentage of adult copepods that survive in current levels compared to future levels?
4. What percentage of copepod nauplii survived when exposed to current levels of pH?
5. What percentage of copepod nauplii survived when exposed to future levels of pH?
6. What is the difference in percentage of copepod nauplii that survive in current levels compared to future levels?
7. Why do you think there might be a difference in survival percentage between adult copepods and copepod nauplii?
8. Based on this data explain what you think might happen to the copepod population if the pH of the ocean continues to decrease.
9. Given that copepods are primary consumers, what impact might this have on the arctic ecosystem as a whole?