

PUPCYCLE II LOG CHALLENGE QUESTIONS

Today's Certificate Challenge	Challenge Answer	Log Day
1. Who was Sally Ride?		Em Barka-tion Day
2. How many different research institutions are represented on the PUPCYCLE II research cruise.		
3. Identify two (2) key variables scientists analyze to locate regions of upwelling.		Day 1
4. How do upwelling cycles support the aquatic food web?		
5. Identify the color used to indicate cold water influence on the Sea Surface Temperature (SST).		Day 2
6. Which color is used to indicate high levels of Chlorophyll-A (CHLA) at the ocean's surface?		
7. What two (2) pieces of equipment are attached to the drifter buoy to assist scientists in tracking the buoy at sea?		Day 3
8. Why do scientists use drifter buoys during the research cruise?		
9. How do viruses reproduce?		Day 4
10. When does Chana think viruses will become more prevalent in her seawater samples?		
11. What two (2) toxins is Will investigating in his seawater samples?		Day 5
12. How do these toxins affect phytoplankton and, subsequently, humans?		
13. What three (3) types of phytoplankton are the "Nitrogen Team" scientists investigating during the research cruise?		Day 6
14. What two (2) forms of nitrogen are being investigated by the team?		
15. How is the "UBC Team" identifying different phytoplankton communities as the upwelling cycle ages?		Day 7
16. Why is the "Trace Metal Team" isolated in a separate and enclosed lab space during the research cruise?		Day 8
17. How does an upwelling event affect iron concentrations in the aquatic food web?		
18. How do ligands assist phytoplankton in acquiring the iron they need for survival?		Day 9
19. What other trace metals (besides iron) can ligands combine with in seawater?		
20. Do trace metals increase or decrease toward the end of an upwelling cycle?		
21. Phytoplankton are autotrophs and classified as producers. Zooplankton are heterotrophs and classified consumers. How are Mixotrophs classified?		Day 10
22. What is Claire trying to determine in her research with Mixotrophs?		
23. Why does Rickie suspect a delayed response to the upwelling cycle in Mixotrophs?		
24. Why do cooler SST values indicate the presence of upwelling?		Day 11
25. Why do higher Chlorophyll-A levels indicate the presence of upwelling?		
26. What can the scientists determine about diatoms from their DNA analysis?		Day 12
27. How does the RNA analysis differ from the DNA analysis?		
28. What chemicals will Emily measure to determine the level of productivity in the phytoplankton population?		

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29. Are phytoplankton genes turned "On" or "Off" at the start of an upwelling cycle?		Day 13
30. Why does our (i.e., humans) physical appearance change we get older?		
31. How many Fresh Upwelling Cycles were observed during the 2-week research cruise?		Day 14
32. How do the scientists simulate the various ocean depths where the samples were collected?		
33. Name three vital contributions that phytoplankton play in the health of our planet.		Day 15
Complete the Google Form to receive the link to your Official PUPCYCLE II Certificate.	<u>PUPCYCLE Google Form</u>	Dis-embark-ation Day

*Videos can be accessed here: [Research Vessels & Ocean Exploration](#)