

Ocean Currents Web Quest

Name: _____

Ocean Currents

[Ocean Planet - Smithsonian](#)

1. What are five factors that affect current flow?
2. Can you think of another factor that would affect currents near coasts?
3. What causes upwelling?
4. How does deep water form?
5. Eastern boundary currents are often associated with what process?
6. Why is the Somali current unusual?

[Surface Current Properties](#)

7. What current has the greatest transport of water and what is its rate?

[Introduction to Ocean Gyres](#)

Read the Introduction to Ocean Gyres.

8. Why are oceanic gyres not symmetrical (perfect circles)?

[Gyres and Surface Currents](#)

10. At what scale do gyres circulate? What do they flow along?
11. In which direction do gyres rotate in the northern hemisphere and southern hemisphere?
12. Where do the northern and southern equatorial currents of both the Atlantic and Pacific Oceanic gyres, along with the intervening equatorial counter-current, converge?
13. How would you characterize eastern boundary currents?

Surface Current Mapping

[San Diego Coastal Ocean Observing System](#)

14. In what directions are the surface currents moving around San Diego, California?

15. Below Surface Current Mapping (left menu; available products), click on another location and describe the surface currents for that location.

16. Click on Wind Forecasts and look at the winds for San Diego/Mexico. Can you see any relationship between the wind and surface currents?

El Niño

[NOVA: The Quiet Revolution - Mapping El Niño](#)

17. How big are the typical sea surface temperature anomalies during an El Niño?

18. Look at the sea surface temperature anomaly comparison. In which year do you think the anomaly built the fastest?

[NOVA: Advance Warning](#)

19. What instrument helped scientists detect the onset of the El Niño in 1997?

[NOVA: Origins - Ground Zero](#)

20. About how much water is contained in the bulge of seawater that sloshes across the Pacific Ocean during an El Niño?

21. Is this wedge of seawater less salty than normal seawater? Explain your answer.

22. Name 4 records of evidence for El Niños.

[NOVA: Goodbye El Niño, Hello La Niña](#)

23. What is the proper name for the El Niño phenomenon?

24. What comes after an El Niño? What are of the characteristics of this phase?

[NOVA: Tracking El Niño - Across the Globe](#)

25. Click on "across the globe." Summarize the effects of El Niño for 3 areas of the world.