

8. Ocean Circulation

Worksheet 1

A What are the factors that affect ocean currents?

B What is a tsunami? How is it caused?

C Mention at least three major effects of ocean currents.

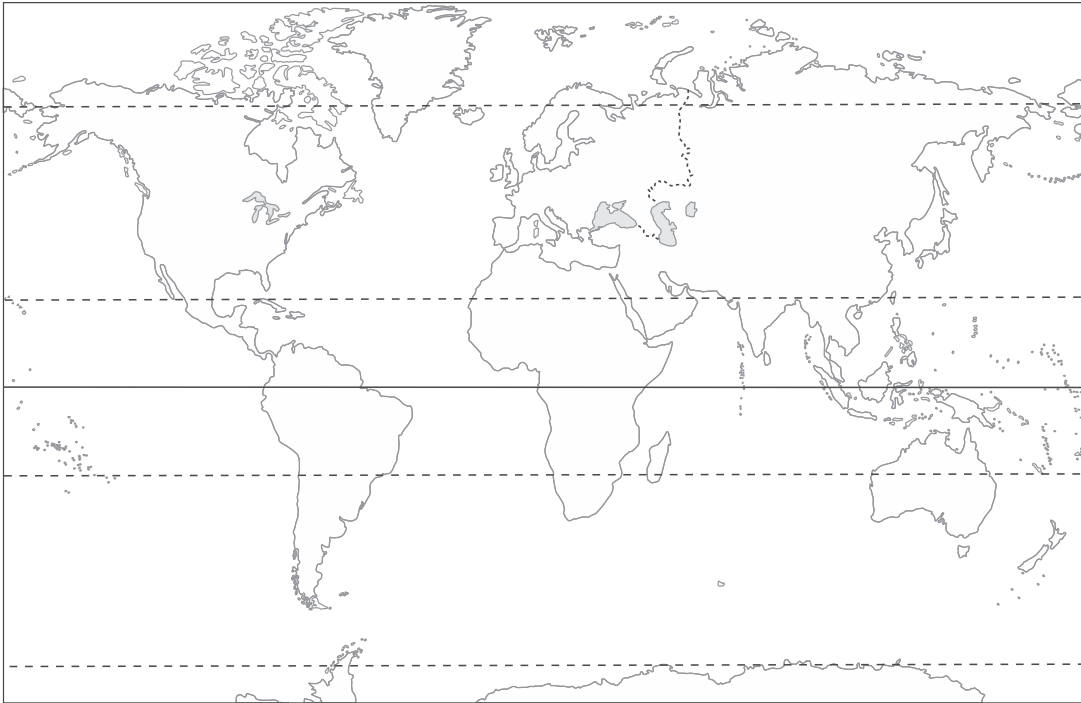
ANSWERS TO WORKSHEET 1

- A. The factors that affect ocean currents are: the difference in temperature of ocean water; the difference in salinity of ocean water; the direction of winds; the rotation of the Earth and the shape of the coastline.
- B. A tsunami [derived from Japanese: tsu–harbour; nami–water] is usually caused by an undersea earthquake or volcanic eruption which sets off massive waves. These waves travel in all directions from the focus of the earthquake at speeds of 600 km to 1000 km an hour. As they approach the coast and enter shallow water, the wavelength decreases and height increases to about 25 metres. The wall of water causes immense destruction to life and property up to 3 km inland, even pushing ships inland.
- C. Mention any three of the following:
- (i) Ocean currents affect the temperature, atmospheric pressure, winds, level of humidity, precipitation in adjoining areas and warm currents increase the capacity of the wind to carry more moisture; cold currents lower it.
 - (ii) In some areas the cold and warm currents meet, creating dense fog that result in navigational problems.
 - (iii) Large fishing areas are found where warm and cold currents meet, as in Japan, Newfoundland and the west coast of North America.
 - (iv) Warm currents help to keep harbours open in winter, thus facilitating navigation and trade.
 - (v) Icebergs move with cold currents from Polar regions and are dangerous for they can damage ships.

Worksheet 2

A On a map of the world, mark the currents given below. Mark the warm currents in red and the cold currents in blue.

- (i) Labrador Current (ii) West Wind Drift (iii) Gulf Stream
(iv) Peru Current (v) North Pacific Current (vi) Brazil Current
(vii) East Australian Current (viii) South-west Monsoon Drift



B Explain the occurrence of spring tides and neap tides, with the help of a diagram.



