



ARCTIC OCEAN
SCIENTIFIC ADVENTURES

EDUCATIONAL
PACKAGE

NO.03

General concepts
of the Arctic Ocean



Hints

Don't write too big or
you will not have
enough space to clearly
identify all of the
elements.

TRAFFIC IN OCEAN
CIRCULATION

1. What is meant by thermo-
haline?

thermo : heat
haline : salinity

2. What controls ocean
circulation?

As sea ice forms in the North Atlantic, the surrounding water gets saltier and denser and sinks towards the bottom of the ocean. Surface water moves in to replace the sinking water, creating a current. As the deep water moves through the Southern Oceans, it slowly warms and rises back to the surface, eventually returning to the North Atlantic, where the cycle begins again.

3. Complete the sentences by
inserting the following terms at
the appropriate places:

currents - phytoplankton -
food chain - exchange -
oceanographers - nutrients -
stratification

Oceanographers and climatologists are interested in ocean stratification because currents supply necessary nutrients to phytoplankton. The food web depends on the mixing and exchange between strata in the water column.

4. Why is the Arctic Ocean
more stratified than the
Atlantic Ocean?

Water from melting ice and
river inputs is less salty than
seawater. Due to its lower
density, fresher water stays at
the surface.

5. Imagine that the following
diagram is a jar containing
different types of water:

-warm freshwater (red)
-cold saltwater (green)
-warm saltwater (yellow)
-cold freshwater (blue)

Color areas with the appropriate color.



5.

