**THE GREAT(EST) OCEAN CONVEYOR BELT - BRIEF DESCRIPTION**

Word Bank:

North Atlantic

cool down

Warm

Norway

East Australian Current

surface current

climate changes

North Sea

Indian Ocean

Salty

Europe

"upwelling zones".

North Atlantic Deep Water

Antarctica

Circumpolar Current

Topography

nutrients

**WHAT CREATES THE GULF STREAM?**

We depart from a very nice and warm area: the Caribbean. The water is very \_\_\_\_\_\_ there and very \_\_\_\_\_\_ because the weather is hot and it doesn't rain often. Therefore, a great quantity of water evaporates and the salt concentrates more and more in the water which is left.

Pushed by the winds, these great masses of warm and salty water become a current which flows in the direction of the ­­­­­\_\_\_\_\_\_\_\_\_\_: the Gulf Stream. It is a \_\_\_\_\_\_\_\_\_\_\_, even if the water is very salty, because the warm water is not as heavy as the cold waters surrounding it.

The Gulf Stream flows at a speed of 3 to 8 km / hour. o­n its way, it warms up the climate of England and of all the countries o­n the western coast of \_\_\_\_\_\_\_\_\_\_\_\_\_: thanks to him, we have milder winters than Canada: Quebec is at the same latitude than Nantes (France) and it gets 4 months of snow per year for o­nly a few days of snow in Nantes.

Once they arrive in the North Atlantic, the warm waters of the Gulf Stream begin to \_\_\_\_\_\_\_\_\_\_\_\_. And for similar temperatures, this water that is saltier than the surrounding (and therefore denser)... they are going to sink straight to the bottom!

**WATER THAT SINKS STRAIGHT TO THE BOTTOM !**

It is off the coast of \_\_\_\_\_\_\_\_ (more precisely, in the Norway Sea, the Labrador Sea and the Groenland Sea) that this water sinks and becomes a deep current, called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This phenomenon is o­ne of the motors of the actual oceanic circulation. The \_\_\_\_\_\_\_\_\_\_\_ is the o­nly place in the whole world which offers all the necessary conditions for this phenomenon to happen.
In \_\_\_\_\_\_\_\_\_\_\_\_\_\_ , a similar phenomenon also allows the surface water to sink to the depth of the oceans, but in lesser quantities: 10 millions m3 of water sink every second in Antarctica, while 20 or 30 million m3 / second sink in the North Atlantic. These places "stir" the oceanic waters and transport oxygen to the great depths.

The North Atlantic is a key area for the actual oceanic circulation and many scientific people are afraid that the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ might destabilise the fragile equilibrium, which allows this phenomenon to happen. If any modification of the oceanic currents should happen in this area, it would mean important changes of the climate of all the European countries!

**THE CIRCUMPOLAR CURRENT, THE MOST POWERFUL CURRENT…**

The cold and deep current which is created off Norway flows back in the direction of the South, through all the Atlantic, towards Antarctica, where it feeds the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The Circumpolar Current flows all around the earth, near Antarctica, and is the most powerful of the globe! The father of "Nemo", the hero of Walt Disney's cartoon, swims into this incredible current with a Green Turtle that has an Australian accent: it is a deep current which flows all around Antarctica, with 180 million cubic meter of water per second, from the West towards the East ! This part of the Circumpolar Current was called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

The Circumpolar Current then distributes cool water in all the oceans of the world, amongst which the Atlantic Ocean, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and eventually the Caribbean.

**GOLDEN AREAS FOR FISH... AND FOR FISHERMEN !**

There are some areas, where small effluents of the deep and cold currents we just described climb along the coast, guided by the local ocean floor \_\_\_\_\_\_\_\_\_\_\_ , and finally reach the surface. Huge quantities of fish live in these places, because the cold currents bring \_\_\_\_\_\_\_\_\_\_\_\_\_ to the surface, that they "picked up" in the ocean depths. Fish feed on these nutrients and concentrate in these areas. These areas, well-known by the fishermen, are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_