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Sea world

The **SESAME-BOUM** project invites you aboard its IFREMER research vessel **ATALANTE** to follow life and discoveries on the cruise in real time! Come on board with us for this oceanographic expedition through the Mediterranean Sea, and discover the scientists' life on board. How will they assess the changes in marine ecosystems? What kind of equipment will they use for their experiments? Discover how small planktonic plants and animals adapt to some particular marine environments

What is Sesame?

SESAME is an international research project that incorporates a variety of disciplines to explore and study the ecosystem changes of the Mediterranean and the Black Seas as well as their surrounding environments. The multidisciplinary nature of the project, supported by the European Commission, means that it will bring together scientists with expertise in marine biology, biodiversity, physical and chemical oceanography, and socio-economics, in order to better understand past and future ecosystem changes.

The contents:

- Description of one of our experiments;
- The plankton;
- The "Photo of the day";
- Scientist interview;
- A message from us to the scientist at sea;
- How we imagine the seashore in 50 years?;
- Ocean & Climate
- News flash about the daily life onboard the Research Vessel;
- Menu of the day at the mess;
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The experiment

We study two big groups of marine bacteria.

The one we are interested in live in the sun-lit layer of the sea and their life is directly influenced by sunlight.

To study these micro-organisms we can use several techniques. We try to cultivate them . We can also use a molecular biology approach .These methods, are quite similar to those used by forensic scientists. We isolate the DNA and we study its genes. Moreover we will take an interest in specific genes of the groups we study to identify the specific gene sequences of the species we can not cultivate yet. These samples will allow us to understand the effect of the marine environment on the diversity of marine bacteria .

The plankton

Plankton consist of any drifting organisms. They provide a crucial source of food to more familiar aquatic organisms such as fish.

Some forms of plankton are capable of independent movement and can swim

up to several hundreds of meters vertically in a single day. By definition, organisms classified as plankton are unable to resist ocean currents. Plankton abundance and distribution are strongly dependent on factors such as ambient nutrients concentrations, the physical state of the water column, and the abundance of other plankton.



A sunny day is announcing on our ship...the workers are ready to start a new day!

Creatures of The Deep Sea

Dr Ron Douglas, City University, London

Chris - Tell us about your research.

Ron - I'm interested in what animals are down there and what it is they do. The problem is that it's very difficult to make observations on living animals in the deep ocean. Mainly I'm interested in fish. If you say the average depth of the ocean is about 4000 metres and you want to fish there, you have to let out fifteen kilometres of cable. The alternative is to go down in a submersible, but a submersible also has problems because it's noisy, it has lights and you're going to scare things away. So really all we see in the deep sea in submersibles are the dumb, the deaf, the stupid and the dead.

Chris - Anybody who's been underwater will notice how **blue** - dominated the underwater environment is because, I think I'm right in saying, water scatters and gets rid of red light and only blue light comes down.

Ron - Absolutely right. If you go diving even off the coast of Britain, if you cut yourself you don't bleed red but you bleed this alarming green gooey stuff. Almost all the animals down there have eyes that are only sensitive to blue because that's the stuff that's transmitted furthest.

Chris - What about the deep sea and the trenches? They're about seven kilometres down some of them and when was the last time that someone went there? How do we know what's down there?

Ron - Everything happens within a few metres of the ground. But as I said, the average depth of the ocean is 4000 metres, so the volume of habitat available is absolutely enormous. We know incredibly little about it. To answer your question, the only two people that have ever been to the bottom of the ocean at 11000 metres are Don Walsh and Picard in 1960, and nobody has ever been back since.

Chris - Thank you very much for the interview you accorded.

We care too....

The sea is unique. It was always close to us, showing us her hidden beauties. Now is our turn to be close to it. We thank the people that are truly dedicated to exploring the oceans and seas for all for everything they have done, they do and will do for us, our future and for seas. Through this message we transit them that we'll do all we can to make the people of the planet to appreciate the seas and oceans to their true value.

In 50 years...



From our point of view over 50 years the beach area will decrease and even no longer exist. One essential factor is the construction of hundreds of hotels by the sea. Everything culminates with the fact that pollution becomes increasingly obvious, especially in terms of damage to the sea and the plants and animals that live in it. The best thing to do would be to try to reduce as much as possible the pollution and its effects and to support the researchers how we can because because they are the only ones who have studied the phenomena of the sea and they know how to proceed in the future for the shore to remain at least as extended as today.

Ocean & Climate

“The Earth’s ocean and atmosphere are locked in an embrace-as one changes so does the other.”

by David Herring

There is clear evidence that Earth's surface temperature has risen by about 0.5°C over the last 100 years. Predictive computer models indicate that given a steady rise in levels of greenhouse gases, such as carbon dioxide, there will be a corresponding increase in surface temperatures. .

The Earth's ocean and atmosphere are locked in such an intricate embrace--as one changes so changes the other. If scientists could learn to better interpret the "dialogue" between ocean and atmosphere, they could do a better job of predicting regional and global climate change.

The menu of the day

Breakfast: Mixed Cereal with Fresh Milk
Lunch: Fish Fingers & Roasted Sweet Potato Wedges
Tomato Ketchup with Little Cucumber Triangles
Dinner: Poached Fish in Fermented Soya Bean Sauce with Tofu
White Fluffy Rice

Weather forecast for the day

On Thursday we'll see partly cloudy skies through the day with rain showers possible late. Highs in the mid 50s. Southwest winds 5 to 10 mph...Becoming southeast in the afternoon. Chance of rain 70 percent. Water temps hang in the mid to upper 50's.

TIDES:

4.4' HIGH 9:58AM
0.7' LOW 3:35PM
5.7' HIGH 9:49PM

News

Hello everybody,

After a few busy days with few moments of sleep, we now have time to rest and relax before we reach the next station. It is really pleasant to sleep in, swim in the swimming pool on the deck and to talk about this and that with the rest of the team. Even if this mission is led by the French, the team on-board comes from all around the world, and several nationalities are represented. There are two Greeks, a Czech, an Italian living in the US, an American, a Spanish girl, a Japanese (who speaks Japanese, English, French ... and Norwegian!) and me, I am Romanian

Even if our instruments are really sensitive, the signal measured in the Mediterranean is very low. Indeed this sea is poor in plankton, particles and dissolved matter, and the sea water is crystal clear with a deep blue colour. This event is clearly visible to the naked eye, and even to the satellites in orbit around our planet. Thank to satellite images we can study these tiny organisms present in every sea of the Earth.

One of my favorite parts about working on a boat is the amazing view! The best view, in my opinion, is from the front deck, where you can see the waves rolling by as we sail across the water and you can feel the wind rushing past. It's an amazing sight to be able to look all the way around you and see nothing but water, and to think how much there is to learn about that water! Whether standing out on the bow at night watching the stars, or during the day watching the waves, it definitely makes me feel lucky to be out here studying the ocean!

Name and address of the class: 9B2, "Ovidius" Highschool
Constanta, Romania, 2, Basarabi street, 900710

Age—15-16 years old

Number of students: 14

Coordinating teacher: Carmen Bucovala

Sources:

www.sesame-ip.eu

<http://www.thenakedscientists.com>

www.eoearth.org/article/Plankton

<http://earthobservatory.nasa.gov/Features/OceanClimate/>

<http://littlegastronomy.blogspot.com/2009/02/daily-menu-10-feb-2009.html>