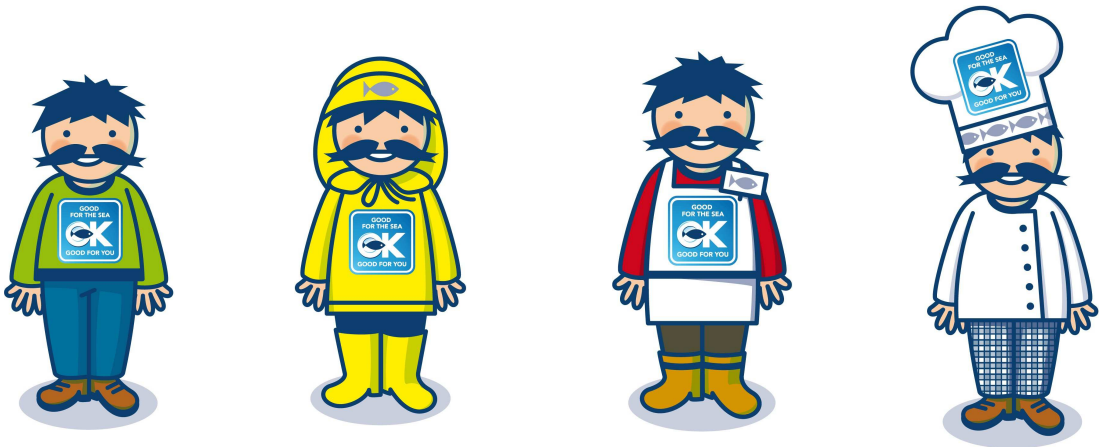
EDUCATIONAL KIT

WHICH FISH?



world ocean network

ACQUARIO DI GENOVA
Ti emoziona per natura.

AQUARIUM FINISTERRAE

Nausicaá
La Mer est sur Terre

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INTRODUCTION

Introduction

This kit, which has been adopted and adapted by the Which fish campaign, was realized as part of Mr.Goodfish: a campaign on the responsible consumption of fishing resources promoted by the **World Ocean Network** and realized by three European Aquariums: **Acquario di Genova, in Italy,** Nausicaa - **Centre National de la Mer,** in France and **Aquarium Finisterrae,** in Spain.
This educational kit arose from the need to inform and train the new generations, the future adults, on a **responsible consumption of fishing resources** with the aim to mitigate the environmental impacts caused by the current consumer habits and fishing practices.

The market distortion, which increasingly requires only a few species due to the simplification of the distribution chains and the simplistic consumer orientation, does not take into account the large variety of fishing resources that the marine environment offers every day to the fishermen's nets. This is causing an unbearable pressure on a number of species of high commercial interest, with direct consequences on the stocks caught.

And thus, a potential source of food and money is turned into a huge waste of resources and a useless impact on fishing resources.
The crises, occurred in a rapid sequence, of stocks of herring, salmon, codfish and eel, besides the reduction in average sizes of lots of species (hakes, red breams, snappers, sea breams, swordfish, etc.), are clear and alarming warnings, which dictate a change in habits.

In order to avoid squandering and depletion of fishing stocks, not only the fishing shall become more selective, but all of us shall learn to know, appreciate and purchase species at the moment rarely considered.

The campaigns have a **positive attitude**. Indeed, they do not forbid the consumption of some species, but rather suggest those whose stocks are in good conservation status and hence can be purchased and consumed without running the risk of jeopardising their survival.

There exist a wide range of local and seasonal species, which can be an "alternative" to the most known and overexploited ones.

The close future virtuous circle shall inevitably entail that the consumer shall require to the market more species, knowing how to cook them, the retailer shall purchase more species, knowing that could find customers asking for them; the wholesalers shall ask the fishermen for more species, knowing that the retailers will have no problem to resell them and, finally, the fishermen can avoid to discard some species, knowing that, at last, the wholesalers will buy them, the retailers will resell them and the end users will appreciate them.
Only in this way the pressure on the most commercial species can be reduced, while our food practices will be enriched by new tastes and flavours.

Considerations on the use of our educational kit
The Environmental Education projects entail a rather complex articulation of topics and activities, intersecting and completing one another during the entire school cycle. That is why we have chosen to structure the **Units** of our "Educational kit Choose the right fish" by topics, in order to help the teacher to plan the development of the entire project as a whole, giving the chance to choose year on year the activities that better adapt to the learning capacity of the students.
Each and every topic can be also examined in depth at various levels and in different years, allowing the students to acquire new elements at every step, as well as to elaborate increasingly complex and articulated information and considerations. Hence, by increasing the complexity of information in parallel with the various topics raised, the connections among them become more "natural" and easier to understand.
Being the entire plan of the project clear since the beginning, the teacher can organize all the activities in one or more school years, without prejudice to the need to constantly adapt and reshape said organization, according to the response of the class and each student during the learning path.

Finally, the educational challenge (undoubtedly not easy) is that to monitor the change not only in knowledge, but also of all those values, behaviours and attitudes contributing to train our youth today, or better, the future adults.

Instructions for use

Our educational kit is structured by **UNITS**, organized according to the following diagram:

<table>
<tr><td colspan="3">UNIT</td></tr>
<tr><td colspan="2">TECHERS' GUIDELINE</td><td rowspan="2">DIDACTIC FACTSHEETS</td></tr>
<tr><td>Unit Map
&
Educational path</td><td>Inserts</td></tr>
</table>

The "**TEACHERS' GUIDELINES**" available for the teaching staff, provides the tools to develop various educational paths and activities with the students, to whom the didactic factsheets are dedicated.

More specifically:

- "**Unit Map & Educational path**" explains purposes, goals, contents and strategies, which in particular constitute the educational part of the path.
Furthermore, as usually done in teaching, the problematic and crucial aspects of every topic raised are highlighted: for instance, reference is made to something developed before or to the daily reality of the student.

- The "**Inserts**" introduce some technical and scientific aspects related to the reference unit. Anyway, the insert shall not be deemed exhaustive about the topic raised, but just a tool for the teacher to collect some useful information and sparks to better develop the activities.
For any further detailed study, specific texts and references indicated in the "Bibliography" can be used.

The "**DIDACTIC FACTSHEETS**", available for students, can be photocopied and used by students during the various activities proposed. In particular, for each unit, there are the following types of didactic factsheets, entitled as follows:

- **S (Survey)**, didactic factsheets to verify knowledge/pre-knowledge, by interviewing the students.

- **R (Research),** didactic factsheets of data collection, through various research activities (on the internet/in the library or during field outings) from time to time explained in the teachers' guidelines.

- **E (Experience/processing),** didactic factsheets of experience/data processing through the various activities from time to time explained in the teachers' guidelines.

- **V (Test),** didactic factsheets for evaluation of learning.

Methodology and educational goals

The methodology used results really important for the achievement of the educational goals of this project. **The construction by the students of their knowledge through direct experiments and firsthand data processing, represents the philosophy behind the entire project: often we learn more by reflecting than by studying!**

After all, these principles are the essential cornerstones for the **development of conscious and responsible behaviours towards the environment** and represent the essential purpose of the Environmental Education. It results clear how to understand the effects on the environment of the anthropic species, in this case fishing and

aquaculture, first of all, the capacity of "reading" complex systems shall be developed, initially by discerning each elements of the ecosystem and then by identifying their mutual relationships.

Hence, the **constructivist approach** given to the whole work is realized with a "stratification" of concepts by gradual passages, starting from sharing the terminology, from research of information, to formulation of hypotheses and identification of correlations by each and every student.
In order to make the construction of knowledge possible, various activities (to which reference is made by the didactic factsheets) are proposed and allow, on the one side, the teacher to assess before the "pre-knowledge" and then the learning of students, on the other side, the students to learn through multiple, different direct and field experiences.
In particular, the activities envisaged by this project are listed below and shall be performed in the following order.

Assessment of pre-knowledge
At the beginning of every unit, the students are invited to answer some general questions, whose answers will give to the teachers an idea of their previous knowledge and preconceptions in respect of the various topics raised for the purpose to call them into question.

Research
The students are asked to actively look for information, through various tools or experiences in order to find in a direct way the information on which build their knowledge.

Experience/processing
Through various experiences the students are led to re-process the data collected earlier and to formulate questions and hypotheses with a subsequent development of their powers of deduction.

Test
At the end of every unit, in order to assess the learning of the students, various types of testing activities are proposed.

For the development of the activities we suggest to **invite (and support) your students to use, besides the traditional ones, also more modern means of information and communication.**
We also invite you to create at the end of every activity, **moments of comparison and dialogue between the students**; indeed, we consider this aspect of essential importance as element of growth and occasion of further learning for the students.
This project has an interdisciplinary approach, because it entails connections between multiple contexts such as biology, zoology, ecology, geography, history, literature, law, food education, mathematics, etc.

Finally, we remind you to not disregard your students' behaviours, attitudes and approach to organisms and environment on which they are working. Keep observing which value, which importance and which respect are attributed, by your students, to the organisms and in general to the topics gradually met and discussed.
Indeed, we deem that these elements are essential for the purposes of the educational process and

that it is important to persist in monitoring said aspects: starting to understand which interventions by Humans, positive or negative, affect the environment means, first of all, starting from ourselves and our relationship with everything around us.
The students shall understand that any of their actions affects the environment and can have unpredictable effects. The awareness of being integral part of the environment is essential to start a correct approach to a process of Environmental Education.

Overview of contents

More detailed and specific information about methods, educational goals and didactic experiences are reported at the beginning of every unit, in the teachers' guidelines, indicated as "unit map".

The topics discussed in every Units and their didactic goals are listed here below:

Unit 1
The sea as a food resource for Humans.
Goal: understanding the nutritional importance of the fishing resources and of changes that the consumers shall necessarily make to their habits in relation to these resources.

Unit 2
The exploitation of the fishing resources: fishing and aquaculture
Goal: understanding the various procedures for exploitation, production and management of the fishing resources and their impacts on the environment.

Unit 3
The fishing resources as a cheap product
Goal: understanding the importance of the fishing industry at world level.

……HAVE FUN!