

INTRODUCTION

Downloadable material on the NMA Distance Learning Project has been designed specifically to support science teaching. Consistent with the educational remit of the Aquarium, the material sets out to inform about issues in the marine environment. However, at the same time, we have ensured that material is consistent with the National Curriculum, and that it can be used in teaching core elements of the science syllabus.

The material on the project consists of 'front-of-class' teaching materials and activities for students. The teaching materials are all in the form of PowerPoint™ slide sets, using high quality photographs and graphics along with explanatory text. You can find out more about the slides, and other parts of the material, in a separate *Users' Guide*.

Activities for students consist of on-screen quizzes, printable worksheets. All of these are designed to complement the slides, although some of the activities could be used on their own. Quizzes are interactive, using animation techniques to reinforce knowledge.

All of these resources are provided free for educational use. Finally, please note that the NMA Distance Learning Project has a place for your ideas and resources. The Reference Material section is there to receive input from schools, in the form of new material, web-links, or anything else (within reason!)

WHAT'S IN THE DLP MATERIAL FOR KEY STAGE 4?

The science content on the DLP site is divided into three modules. There is a detailed description of what is presented in each module in separate Teachers' Notes for each module. What follows is simply an overview and provides an opportunity to identify the cross-linkage between modules.

Throughout the design of this material, we have sought to challenge students. This means that we often work close to the edges of Key Stages in the National Curriculum, providing material that takes ideas a little bit further than you might find in textbooks and other resources. At Key Stage 4, we have provided material at an advanced level on plant growth, the global carbon cycle, and fisheries. The material contains information on both marine and terrestrial environments. This enables the resources to be used at the core of curriculum teaching. Throughout the material, we try to highlight both similarities and differences between the land and ocean. It is often the differences that help us to understand both environments.

Module 1: Biodiversity & Adaptations

This module is concerned with the variety of living things in the oceans, and how they are fitted to their environment. At Key Stage 4 we have concentrated on the biology of plants in the ocean, especially its relationship to environmental controls. This ties in with aspects of the carbon cycle covered in Module 2 at this Key Stage. We have also included material on the classification of animals. Although the classification material uses marine animals as examples, these have been selected so that they are generally applicable to National Curriculum teaching.

Module 2: Ecosystems & Food Webs

This module is concerned with the structure and dynamics of ecosystems. It concentrates on the dynamics of food webs, especially the losses that occur as food is transferred from one level in a food chain to the next. Comparison is made between land and ocean ecosystems. Some of these concepts are extended to a description of the carbon cycle.

Module 3: Exploitation & Conservation

This module is concerned with the uses of the marine environment and the effects of marine exploitation. At Key Stage 4, we have concentrated on fisheries, introducing quantitative aspects of population biology used in fishery management. We have also provided material on toxic material in marine food chains.

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