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## Dynamic Learning

This easy-to-use digital resource supports the teaching of the BTEC Level 2 Applied Science specification. It includes:

- Advice on assignments and grading criteria explaining what your students need to do to get improve their results
- Detailed teacher notes defining learning outcomes giving you extra tools on how to support to your students in improving their assignment tasks
- Answers to questions from the book so you can test your students knowledge as they proceed on the course

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## Our authors

Our experienced BTEC teachers have written the new BTEC 2010 resources so you can be confident they know exactly what you and your students need to get better results. Read on to learn more about them...

**Rebeka Hasan** is Head of Science at Selsdon High School and is an experienced BTEC teacher. She has taught for over 12 years and has an excellent record of understanding and delivering BTECs.

**Michelle Moran** is an experienced teacher who has set up BTEC courses in five schools, including Oak Farm Community School where she currently teaches.

**BTEC Level 2**  
*Building Better Results*

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### *Building Better Results by...*

- Ensuring teachers get the **very best support** from an outstanding team of BTEC experts
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Book 2  
publishing  
Dec 2010

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# Are you looking for flexible and time-saving resources to help you teach the new BTECs?

Level 2 BTEC Applied Science Book 1 and Book 2



Book 2 publishing Dec 2010

Then look no further than our BTEC teacher and student resources!

Written by experienced teachers who have a proven success rate teaching BTEC plus a clear understanding of how the new syllabus will be taught, these Student's Books include exactly what you need to administrate the new Level 2 BTEC course.

Task-based and broken down into manageable chunks with practical tips, these resources offer your students a simplified route to developing their assignments so they understand exactly what to do to get the results they want.

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## How will these books help your students get better results?

- **'Background knowledge'** of Key Stage 3 Science reminds students of the key elements of each topic they need to learn to move onto the next level
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Clear indication of grading criteria shows students what they need to learn and understand for each level

Enquiry questions extend learning and stimulates classroom discussion

Detailed instructions for 'Tasks' provides students with a clear step-by-step guide on how to complete the task successfully and the grade achieved

**BTEC Level 2**  
Building Better Results

Unit 3 Chapter 11 Species and classification

**Identification keys**  
Over 1.5 million different organisms have been described, and many millions of organisms have not yet been discovered. With so many different animals, plants, viruses, bacteria, fungi and protists, scientists need good ways to name, identify and classify them.

Figure 11.1 The variety of life

**Protists:** single-cell organisms; can show plant or animal characteristics.

**Grading criteria for Species and classification**

|  |  |
|--|--|
| <b>P2</b> construct simple identification keys to show how variation between species can be classified | <b>M2</b> explain how organisms within an ecosystem interact over time |
|--|--|

**Questions**

- 1 Look at the organisms in Figure 11.2. What type of organism is each one?
- 2 How could you split the organisms in Figure 11.3 into two groups?

**Keeping it local**

- Try and visit your local Natural History museum and look at the exhibits of animals and plants. How many different species are there in the museum?
- Do a survey of your school field. How many different types of plants can you spot? How many different animals can you spot? How many of these are insects?

**Scenario**

You are a trainee keeper in a small local zoo. Your job is Assistant Education officer. Your task is to devise and deliver a series of short talks in the zoo to primary age schoolchildren about how to tell the difference between similar looking animals and how animals feed when they are in the wild.

**Scenario**

The Ocean Aquarium has given you a holiday job. You don't know a lot about sea life so you are going to write yourself a self-help guide to sea creatures. In particular, you need to know how to recognise sea animals from their features, which sea creatures are related to each other and what the sea creatures feed on.

**Career**

- Biologist
- Botanist
- Curator
- Marine biologist
- Ornithologist
- Taxidermist

'Scenarios' enable students to see the type of scientific situations they will encounter in real-life job situations

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Unit 3 Biology and Our Environment Chapter 11 Species and classification

**Feeding relationships**  
**Essential science for P3**  
A habitat is the area where a plant or animal lives. In any habitat there are many types of organisms (producers, consumers and decomposers). These organisms interact with each other and also interact with all sorts of physical conditions such as temperature, humidity and rainfall. All of this interaction makes up what biologists call the ecosystem.

**Producers:** Green plants – they are able to produce their own food by a process called photosynthesis.

**Consumers:** Organisms that feed on other organisms (animals or plants).

**Key words:** biomass, decomposition, food chain, food web, food production, parasite, photosynthesis.

Figure 11.9

**Food chains:** Producers (green plants) are eaten by consumers. The first consumer is called the primary consumer, the second is called the secondary consumer and the third is called the tertiary consumer. Decomposers feed on the decaying material from dead plants and animals.

Figure 11.10

**Food webs:** Lots of different food chains within a particular ecosystem can be drawn together as a food web like this grassland food web.

**Questions**

- 1 a) Write the names of five producers.  
b) What do they have in common?
- 2 a) What is a parasite?  
b) Find out what a parasite-host relationship is.  
c) Why are decomposers important in an ecosystem?  
d) Name three examples of decomposers.
- 3 a) Write the names of five producers.  
b) What do they have in common?
- 4 Write out three food chains from the food web on page 10.

**Task**

You are an environmental officer. Part of your project is to survey an area and find out which plant and animal species live there. You will use various techniques to analyse the area. You will look at specific food chains and build them into a food web. You will describe how some of these organisms are adapted to their environment. Finally, you will present your findings to the local ecological trust.

**Your task:**

- Step 1: choose an ecosystem**  
Choose an ecosystem to study. This could be a local area or it could be an ecosystem that you have studied using DVDs and the internet (such as the Amazon rainforest in South America).
- Step 2: food chains**  
Select 10-15 different organisms that live in your ecosystem (you will need animals and plants). Find out or observe what the animals eat. Construct five separate food chains using these organisms. Write these out clearly, showing the direction of energy flow.
- Step 3: food web**  
Using your five food chains, construct a food web to show the interdependence of the organisms that live in your ecosystem. Annotate your food web to describe what it shows.
- Step 4: adaptations**  
Choose two organisms from your food web. Produce a poster for each organism. Show how the organism is adapted to living in this particular environment.

Once you have completed Steps 2 to 4 show your teacher.

**Congratulations!**  
If your answers are correct you have achieved P3.

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