KS3 Science: Year 9

Introduction

Welcome to the third year of your Oxford Home Schooling Key Stage Three Science course! This Introduction will tell you what you can expect from the course, and it will remind you how to plan your science studies effectively.

The three years of the course will take you through all the material of Key Stage Three (KS3) of the National Curriculum for Science (England and Wales). You can find a full version of this at www.ool.co.uk/sc70001.

Past papers for this course (SATs tests) may be found at (e.g.) www.ool.co.uk/sc70001b.

Contents of the Introduction

Oxford Open Learning

Preliminary Notes

The course also covers the material for what used to be the UK Common Entrance (CE) Examination.

The Oxford Home Schooling Key Stage 3 (KS3) Science course is divided into three separate years, corresponding to Years 7, 8 and 9 in English secondary schools, and this file contains the Year 7 course. It has been set out in six modules, each of which contains a lesson each on Biology, Physics, Chemistry and Scientific Investigation. Each module concludes with a written Tutor-Marked Assignment (TMA) to be sent to your Tutor for marking.

After studying this course, you will have developed a good understanding of how Science works, and of many of the key ideas in Biology, Physics and Chemistry. You will be very well placed to move on to any of the GCSE or IGCSE Science courses offered by the UK examination boards. You will also, we hope, have enjoyed the course so much that you will be looking forward enthusiastically to further scientific studies!

Arrangement of Lessons

Module 1	**Variation, Reactivity and Pressure**
Lesson 1	Biology: Variation
Lesson 2	Chemistry: The Reactivity Series
Lesson 3	Physics: Pressure **TMA A**
Module 2	**Selection, Chemical Patterns and Turning Forces**
Lesson 4	Biology: Artificial Selection
Lesson 5	Chemistry: Chemical Patterns
Lesson 6	Physics: Turning Forces **TMA B**
Module 3	**Photosynthesis, Gases and Speed**

Lesson 7	Biology: Photosynthesis
Lesson 8	Chemistry: Gases
Lesson 9	Physics: Speed **TMA C**
Module 4	**Plants, Air Pollution and Magnets**
Lesson 10	Biology: Plants as Food
Lesson 11	Chemistry: Air Pollution
Lesson 12	Physics: Magnets **TMA D**
Module 5	**Plant Reproduction, Using Chemistry, and Electromagnetism**
Lesson 13	Biology: Plant Reproduction
Lesson 14	Chemistry: Using Chemistry
Lesson 15	Physics: Electromagnetism **TMA E**
Module 6	**Skeletons, Sound and Space**
Lesson 16	Biology; Skeletons and Health
Lesson 17	Physics: Sound
Lesson 18	Physics: Satellites, Stars and Galaxies **TMA F**
Appendix	

The Structure within Lessons: How to Study

Front Page

The front page of every lesson shows:

- the **title**
- **aim(s)** for the lesson. These tell you what you should have learned after having worked through the lesson.
- the **context**. This gives a brief summary of how this particular lesson relates to the rest of the course.

Lessons

You should read all sections of the lesson carefully until you have a thorough understanding of the topics. Your parent or guardian will have their own guide, and they or your tutor will be able to help you with any areas of lessons that you find particularly difficult.

Twig Resources

Alongside the course materials, you have the opportunity to watch a number of films on the internet, all produced by a company called Twig. Welcome to Twig World!

These films cover almost every aspect of science at secondary level. They are full of information and memorable pictures.

To view the films, you will need an e-mail account, internet access and a password, supplied to you on enrolment. As you work through the lessons, you will come across Twig-links quite regularly, looking like this:

Log on to Twig and look at the film titled: **Nylon**

www.ool.co.uk/1377mz

Nylon is one of the strongest polymers created by man. What makes it so durable?

To reach the film, you would either type the URL into your web-browser (here www.ool.co.uk/1377mz) or search the Twig

site (www.twig-world.co.uk) for 'Nylon'. Having watched it, you return to the lesson.

The films have been made to help you understand ideas by seeing them in the real world. Please bear in mind:

1. Some of the films, in part, will be too "advanced" for your needs, include ideas you have not yet covered, so don't worry if some bits seem a bit too hard.

2. If you find that a film is not helpful or interesting, stop watching it! It is possible to study the course successfully without watching *any* of the films.

3. Alongside each film, the Twig site offers various additional resources. You can download the words spoken in the film or tackle a quiz based on the film. These are optional extras if you have time.

Further notes on the use of the Twig films is given in the Parents' Guide.

SATs and TMAs

Self-Assessment Activities

At the end of every lesson, except those that have a TMA, you will find self-assessment activities. These are designed to test what you have learned in the lessons, and also to help you to discuss the different topics with your parent or guardian.

Suggested answers for these activities are given in the Parents' Guide to each module.

Tutor-Marked Assignments

Every module is tested with a TMA, which will give you and your parent or guardian a very good idea of how well you are progressing. **You should answer all TMAs on paper**, *not* on the pages of the folder itself, as you will need to send them to your tutor. This gives you the opportunity to develop neat, well structured answers, as well as show what you have learned. It also means you do not lose your copy of the questions!

Practical Activities

As a home student you will probably not have access to a fully equipped laboratory, but practical work is very important in Science, and is required by the National Curriculum. It is also fun!

Many practical activities are set in this course which can safely be done at home. They usually use equipment you are likely to have in the house already, but sometimes you will need to get hold of other things. At the start of each module you should look through the practical activities with a parent or guardian so that you can see exactly what equipment you will need.

In addition, there are several books on the market which describe lots of Science experiments to try out. You might think about getting one and doing the experiments that interest you. One good example is:

H J Press, *Science Experiments (A Little Giant Book)* (Sterling Publishing, 1998; ISBN: 139781402749902)

Safety

Whenever doing practical work, safety is crucial. Before starting *any* practical, you should carry out a **risk assessment**. This means thinking about possible dangers in the work, and taking steps to reduce them if necessary. *Always discuss your risk assessment with your parent or guardian before starting work.*

Major risks are noted with each practical activity in the file, but your work should be supervised by an adult where necessary. Neither Oxford Home Schooling nor the author of this course accepts any responsibility for accidents that take place while performing these activities, or accidents or damage caused by the storage of apparatus and equipment. If there are younger children at home, please note that they should not be involved in the practical work.

Guide for Parents

The Parents' Guide for this course is in two parts.

The first, which follows this Introduction, contains extra information on the use of the internet, safety issues, and other general matters.

Then each module also has its own Parents' Guide, with information about each lesson of the module and answers to the Self-Assessment Questions. These answers should also provide a starting point for discussion; so that you can let your parent or guardian know how easy or difficult you found the course material. Your parent or guardian should detach these sections before you begin the course, so that they can use it to monitor your progress on a regular basis.

Your Tutor

Your tutor is available not only to mark the appropriate TMAs, but also to offer help and advice when needed.

And finally... very good luck with your studies!

Philip West