Introduction

This teacher's resource provides a range of teaching and reference materials which have been developed to aid the teaching of the Cambridge International Examinations IGCSE® Computer Science syllabus (0478).

These resources support the *Cambridge IGCSE Computer Science* textbook (by Watson and Williams), which has been endorsed by Cambridge International Examinations.

Scheme of work

The scheme of work has been devised to follow a logical route through the new IGCSE® Computer Science textbook. Its aim is to complete the course by the end of the second term in the second year of study; this will then allow adequate time for revision and exam practice. It is assumed that students will have 3½ hours per week study time in this topic (total study time over 5 terms: 245 hours, comprising 145 hours for section 1 and 100 hours for section 2). To ensure a good balance, it is also assumed that sections 1 and 2 of the Cambridge syllabus will be taught side by side; the scheme of work will therefore assume 2 hours per week on section 1 of the syllabus (theory) and 1½ hours per week on section 2 of the syllabus (practical). Naturally this can be modified depending on resource allocation and other factors.

The relevant chapter and pages in the textbook and the syllabus references are detailed, as well as activities from the textbook; additional lesson notes are also included.

Answers

Answers to the end-of-chapter questions and (where relevant) the activities in the textbook are provided.

Examination-style questions

The Paper 1 examination-style questions with answers will be especially useful for teachers. They are based on the chapters in section 1 of the textbook. Teachers can select questions or question parts to make their own tests, or use the questions as provided. In general the level of difficulty of a question increases as the students work their way through the question. For example, all students should be able to tackle part a (shown with a green dot 🟢); most students should be able to tackle part b (shown with an orange dot 🟠); and those students aiming for the top grades should be able to tackle part c (shown with a purple dot 🟣). Answers for all questions have been provided, using this same colour coding. Sometimes there is additional commentary on the answers.

Program files

The Python and Java program files are for use with the activities and end-of-chapter questions.

Additional content in the textbook

Whilst asymmetric encryption is not in the present syllabus it was included in the textbook for two reasons:

1 to give a more complete picture on how encryption works (since student discussions may involve ways of improving the security of data by this method)
2 it is helpful to include asymmetric encryption when studying security systems on the internet such as SSL and TLS.