GCSE COMPUTER SCIENCE Curriculum Overview Key Stage 4 - Year 10 GCSE Computer Science Year 10 Autumn 1 Autumn 2 Spring 1 Spring 2 Summer 1 Summer 2 Topic/Unit to be studied Computers Programming Computers Programming Data Programming Data Programming Communication and the Internet Problem Solving Programming Subject Content Outline Students must be familiar with the hardware and software components that make up a computer system and recognise that computers take many forms from embedded microprocessors to distributed clouds. Students must be able to design, read, write and debug programs. They must be able to apply their skills to solve real problems and Students must be familiar with the hardware and software components that make up a computer system and recognise that computers take many forms from embedded microprocessors to distributed clouds. Students must be able to design, read, write and debug programs. They must be able to apply their skills to solve real problems and Students must understand how different types of data are represented in a computer. Students must be able to design, read, write and debug programs. They must be able to apply their skills to solve real problems and produce robust programs. Students must understand how different types of data are represented in a computer. Students must be able to design, read, write and debug programs. They must be able to apply their skills to solve real problems and produce robust programs. Students should understand the key principles behind the organisation and set-up of computer networks. Students should understand how computer systems work and design, implement and analyse algorithms for solving problems Students will understand the coursework requirements and will practice these by completing a scenario set by the teacher. produce robust programs. produce robust programs. Aims/Assessment Objectives To be able to identify the characteristics of different programming languages To be able to use programming techniques appropriately To be able to explain how hardware and software work together within computer systems. To be able to identify the characteristics of different programming languages To be able to use programming techniques appropriately To be able to explain how hardware and software work together within computer systems. To be able to identify the characteristics of different programming languages To be able to use programming techniques appropriately To be able to explain how data is represented in binary in computer systems. To be able to identify the characteristics of different programming languages To be able to use programming techniques appropriately To be able to explain how data is represented in binary in computer systems. To be able to develop and read simple algorithms to assist in problem solving. To understand how to set-up networks and the importance of using networks. To understand the Controlled Assessment Requirements Assessment Computers Test Programming Test Computers Test Programming Test Data Test Programming Test Data Test Programming Test Communication and the Internet Test Algorithm Test Practice Controlled Assessment Tasks Cross curricular opportunities Maths skills for solving computational problems, English writing skills to develop answers to exam style questions, history of computer science is also explored. Social, Moral, Spiritual, Cultural Opportunities to work collaboratively with other students Understanding of different types of hackers and the moral dilemmas associated. Homework As set by teacher As set by teacher As set by teacher As set by teacher As set by teacher As set by teacher

The big skills needed for GCSE: AO1 – Demonstrate knowledge and understanding of the key concepts and principles of computer science AO2 – Apply knowledge and understanding of key concepts and principles of computer science AO3 – Analyse problems in computational terms: to make reasoned judgements, to design, program, evaluate and refine solutions