COMPUTING work for students NOT attending school

Monday 2 November – Friday 13 November

SUBJECT	Computing
Year Group	7
Fortnight beginning	2nd November – 13th November
Remote Classroom work	Continuing with the Dragons unit, all about how data is represented by a computer using Binary ASCII and Logic Gates, we have 2 tasks to complete. **Task 1** Start by reading the following presentation on the subject of representing numbers using Hexadecimal: • S:\ICT\Key Stage 3\Year 7\7.2 - Dragons\Lesson 6 - Hexadecimal (Extension)\Worksheet 6 - Hexadecimal.docx Open the following worksheet and try and complete the tasks: • S:\ICT\Key Stage 3\Year 7\7.2 - Dragons\Lesson 6 - Hexadecimal (Extension)\Worksheet 6 - Hexadecimal.docx Here is a short video that explains how to convert between Denary and hexadecimal: https://youtu.be/FyFG0AhEAJk **Task 2** Soon, you'll have to do a small assessment to see if you can remember all of the skills that you have learned on the subject of data and logic in computers. Open the following Presentation and read through it to help you prepare for the assessment: • S:\ICT\Key Stage 3\Year 7\7.2 - Dragons\Lesson 7 - Assessment\ Dragons - Revision Presentation.pptx Have a go at completing the following task as a revision exercise: • S:\ICT\Key Stage 3\Year 7\7.2 - Dragons\Lesson 7 - Assessment\ Worksheet 7 - Revision.docx

SUBJECT	Computing

Year Group	8
Fortnight beginning	2nd November – 13th November
Remote Classroom work	We are continuing with the Interactive ICT Quiz. **Task 1** This lesson, we are going to learn about some influential people in the history of computing Open the presentation on the subject of People in Computing, Located here: • S:\ICT\Key Stage 3\Year 8\8.1 Interactive Quiz\Lesson 6\People in Computing - No Computer Lesson.pptx Read through the presentation and think about all of the developments that have been made in the Computing and the people who made them. Try to come up with 5 questions about these people. For example: • Which programmer popularised the term "Software Engineer" • What was Charles Babbage's first computer called? • When was the Google search engine first launched? Try and create 5 questions on the subject of people in Computing and put them into your quiz. If you complete this task. Try and do some research of your own into famous people in computing and write a short report on some of them. Pick someone interesting and write a short biography on them, including images that represent them and their work: • Who are they • What did they do • How has it affected us? **Task 2** This task requires you to link all of the slides in your presentation to make sure that they work properly. If you click on the correct answer, you should go to the next questions but, if you click on the incorrect slide, you should go to an "incorrect" slide which tells you to go back and try again. Watch the following video that talks you through the process and try and link all of your own questions together properly: https://youtu.be/IyqPof8gXGk **Task 3** This lesson we will look at the presentations that we have made and see how we can make improvements to it. Testing to make sure things work as we expect is one of the most important things in computing. Try to find some issues with your work and we will A presentation is located here that should help you to evaluate the work that you have done so far: • S:\ICT\Key Stage 3\Year 8\8.1 Interactive Quiz\Lesson 7\Interactive Quiz - Making Improvements.pptx You need to: • Pick one of the improvements that was identified last lesson and take a screenshot of the problem • Explain what is wrong with the slide at the moment

	• Make the Improvement and take another screenshot of it • Explain how you made the improvement • You must Print your work before the end of the lesson

SUBJECT	Computing
Year Group	9
Fortnight beginning	2nd November – 13th November
Remote Classroom work	This lesson will look into another computer based numbering system called Hexadecimal **Task 1&2** This is a two part task that will look at Hexadecimal: How and why it is used in computer systems. Watch the following video that talks you through Hexadecimal and explains how to convert between the different numbering systems https://youtu.be/FyFG0AhEAJk The tasks can be found here: • S:\ICT\Key Stage 3\Year 9\Computer Science\Unit 1 - Numbering Systems\ 6 - Hexadecimal.pptx • S:\ICT\Key Stage 3\Year 9\Computer Science\Unit 1 - Numbering Systems\ 6 – Hexadecimal (Part 2).pptx

SUBJECT	GCSE Computer Science
Year Group	10
Fortnight beginning	12th October – 23rd October
Remote Classroom work	As we are nearing the end of this unit of work students should now have a good understanding of the basic Python commands and syntax as well as knowledge of the use of variables, loops (while and for), selection (if, elif, else) and lists. In the upcoming lessons students will learn about how to use external files, libraries, functions and procedures within their programs. · Students should read through the presentations for the following lessons and complete the relevant worksheets, ensuring they add in screenshots of their completed code for each question: • Lesson 9 - Reading and Writing • Lesson 10 – Libraries • Lessons 11 and 12 - Functions and Procedures Python IDLE can be downloaded here • https://www.python.org/downloads/ Alternatively an online IDE can be used here: • https://repl.it/languages/python3 · All resources can be found at the following location: • S:\ICT\Mr Murphy\Key Stage 4\Computer Science\6 - Python

SUBJECT	GCSE Computer Science
Year Group	11
Fortnight beginning	2nd November – 13th November
Remote Classroom work	The following tasks continue to discuss the different Search and Sort Algorithms used by computers as well as discussing the advantages and disadvantages of each. **Task 1** Access the following presentation about the Insertion Sort. • S:\ICT\Computer Science\GCSE Computer Science 9-1\6. Algorithms\4 - Algorithms (Insertion Sort).pptx When you have been through the presentation, answer the exam questions at the end and try to create a sort algorithm in Python that works in the same way **Task 2** Open the following presentation about the Merge Sort. • S:\ICT\Computer Science\GCSE Computer Science 9-1\6. Algorithms \ 5 - Algorithms (Merge Sort).pptx.pptx When you have been through the presentation: • Try to create the Merge Sort algorithm in python • answer the questions at the end and explain the advantages and the disadvantages of using this algorithm **Task 3** Carry out the exercises designed to help you prepare for the end of unit assessment on Algorithms. There are questions on the subjects of Linear and Binary Search, as well as Bubble Sort, Insertion Sort and Merge Sort. • S:\ICT\Computer Science\GCSE Computer Science 9-1\6. Algorithms\ 6 - Algorithms (Exercises).pptx

SUBJECT	BTEC Computing
Year Group	12
Fortnight beginning	2nd November – 13th November
Remote Classroom work	**Mr Allan**: We are looking at how Computing Logic can be applied to scenarios **Task 1:** Go through the following presentation and investigate how you would apply Boolean algebra to represent each situation. • S:\ICT\Computer Science\BTEC Computing\Unit 2 - Fundamentals of Computer Systems\F – Logic\4 - Applying Boolean Algebra to Scenarios.pptx **Task 2:** Look at how Karnaugh Maps can be used to simplify Boolean expressions There are two presentations that go through this topic and then there are a set of challenges to be completed to see how well you have mastered the topic. The tasks can be found here: • S:\ICT\Computer Science\BTEC Computing\Unit 2 - Fundamentals of Computer Systems\F – Logic\5 - Karnaugh Maps (part 1).pptx • S:\ICT\Computer Science\BTEC Computing\Unit 2 - Fundamentals of Computer Systems\F – Logic\5 - Karnaugh Maps (part 2).pptx

	The challenges are here: • S:\ICT\Computer Science\BTEC Computing\Unit 2 - Fundamentals of Computer Systems\F – Logic\7 - Karnaugh Maps (Questions).pptx Task 3 Investigate DeMorgans laws and discover how he created a logic system to represent situations. • S:\ICT\Computer Science\BTEC Computing\Unit 2 - Fundamentals of Computer Systems\F – Logic\9 - DeMorgan's Laws.pptx **Mr Murphy** Students to ensure they have completed: • The write-up for section 1 - Social Trends in Computer Gaming (using worksheet 1 and the accompanying presentation as guidance) • Students to then use presentation title Section2a – A Brief history of Video Gaming, to complete worksheet 2a. Students should use the video links which are available in the notes pane of slide 7 to aid their research. The presentation can be found at the following location • S:\ICT\Mr Murphy\Key Stage 5\BTEC Computing\Unit 14 - Computer Games Development\Presentations Mr Rigby: Students should see Class Charts for specific Instructions

SUBJECT	BTEC Computing
Year Group	13
Fortnight beginning	2nd November – 13th November
Remote Classroom work	**Mr Allan:** We're working through the Encryption part of the new Network Security and Encryption unit, so it encompasses P4 and M2. They are two separate tasks. All of my presentations are located in here, and I'll be adding to them as we work through each part of the task: S:\ICT\Computer Science\BTEC Computing\Unit 7 - Network Security and Encryption For P4, there are three presentations: • 1.Encryption - 1 Symmetric Encryption (P4).pptx • 1. Encryption - 2 Asymmetric Encryption (P4) .pptx • 1. Encryption - 3 - How Encryption Works (P4) .pptx The first presentation looks at Symmetric encryption, such as a Caesar cipher, and explains how it uses one single key to encrypt and decrypt The Second presentation goes through the Asymmetric RSA algorithm, and discusses how you need two separate keys, one to encrypt and another to decrypt. The third presentation gives a recap to these and then discusses how you could set out a task explaining how they each work. I ask you to write programs in Python that demonstrate each, but don't worry if you have difficulty with this, as long as you can explain the details properly without using code. For M2, there are several tasks that we will be looking at and explaining how

	they work: • Hashing • Internet Transmissions (RSA, AES, DES) • Website Digital Certificates • Virtual Private Networks • Wi-Fi (WEP, WPA) • Two Factor Authentication • One time Pad There are presentations on every subject. Go through each one and use the information to add to your report on the subject of Encryption: • 1. Encryption - 4 Uses of Cryptography - Hashing (M2).pptx • 1. Encryption - 5 Uses of Cryptography - Transmitting Data (M2).pptx • 1. Encryption - 6 Uses of Cryptography - Digital Certificates (M2) - Copy.pptx • 1. Encryption - 7 Uses of Cryptography - VPN (M2).pptx • 1. Encryption - 8 Uses of Cryptography - WEP and WPA (M2).pptx The last page in each presentation shows the task you need to accomplish where you are working for a computer game design company and you have to investigate all of the encryption methods being used and discussing how they work and how secure they are. This completed task (P4 and M2) should be submitted for assessment at the end 13th November **Mr Murphy** Students to read through the lesson presentation for P1 – Security Threats and use the information in slide 16 to complete the write up for this section ensuring that they cover the following topics under Internal Threats: <u>Intentional Threats</u> • Employee Actions • Data Theft • Users Overriding Security Controls <u>Unintentional Threats</u> • Accidental Loss or Damage to Data • Unintentional Disclosure • Unsafe Practices Once this section is complete students should then begin the write up for the section on External Threats using the information contained in the lesson PowerPoint as guidance. All word processed documents should be in a standard font size (10/12) **Mr Rigby** See Class charts for more specific Information regarding the current task