PUTTING THE FUN BACK INTO LEARNING!

Computing Curriculum Guide

October 2017

Dear Parents and Guardians,

Welcome to the ICT and Computing October Curriculum Guide. We are delighted to welcome Mr Roger Wilson to our Computing team. He will be teaching G6 to 10 and is looking forward to getting to know the children in lessons this week and meeting parents later this month at parent's evening.

Our aim to make all students computer literate and to do this we provide a curriculum which is challenging, progressive and relevant. Our high-quality computing education equips our students with computational thinking and creativity to understand and change the world.

The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. By continually building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that our students become digitally literate at a level suitable for the future workplace and as active participants in a digital world.

KS4 –

All Grade 9 students are doing ICT as a double lesson each week. Students in Grade 10 who have not chosen Physics continue to study ICT for a double lesson a week. Those KS4 students who have selected Computer Science at grade 9 and 10 as an optional subject are attending an additional 5 lessons a week to cover the Computing course.

KS2 and KS3 –

Grade 5, 6, 7 and 8 are attending a double lesson every week. In each lesson, students are learning theory topics along with practical skills.

The Core Topics:

This term

Grade 5:

Students will cover the topic of programming using Scratch to learn basic computational thinking skills. Students will create their own games using scratch.

Grade 6

Students will cover the topics of E-safety, Security and Ethics. Students will design and create their own E-Safety websites using HTML codes.

Grade 7

Students will learn about Digital Literacy and Multimedia, this is to ensure students are confident using most common applications and are able to digitally edit images using different editing tools.

Grade 8

Students will learn about Digital Literacy and Multimedia, this is to ensure students are confident using most common applications and are able to digitally edit images using different editing tools. Student will be learning about advanced spreadsheets and databases.

Grade 9

In ICT lessons Grade 9 students will be learning the basics of ICT Systems and will also work on the impact of ICT Systems on society along with some project work on the basic components of a computer and generations of computers.

In computer science lessons Grade 9 students who have chosen this option will be covering theory topics on data representation in computers and practical topics like computational thinking and programming. Students will learn and apply the fundamental principles and concepts of computer science, including decomposition (breaking a problem into smaller components), abstraction (removing unnecessary details), logic building, algorithms (flowchart and Pseudocode) and data representation.

Grade 10

In ICT lessons Grade 10 students will be revising the topic on ICT Systems and will also work on the impact of ICT Systems on society during the term along with some project work on the basic components of a computer and generations of computers.

In computing lessons Grade 10 students will be revising the theory topics on data representation in computers and communication and internet technology. Students will learn and apply the fundamental principles and concepts of computer science, including decomposition (breaking a problem into smaller components), abstraction (removing unnecessary details), logic building, algorithms (flowchart and Pseudocode) and data representation.

How Can You Help? Encourage your child to enjoy working on their Scratch accounts to build their logic skills and their skill in programming.

Homework: All assigned homework will be available on the BRIC system as well as being explained to students in class.

Useful Website:

Grade 5: https://scratch.mit.edu/

Grade 6: https://codecombat.com/

Grade 7: www.bbc.co.uk/education/subjects/zvc9q6f

Grade 8: www.bbc.co.uk/education/subjects/z8mtsbk

Grade 9 (ICT): http://www.bbc.co.uk/education/subjects/zqmtsbk

Grade 9 (Computing): http://www.bbc.co.uk/education/subjects/z34k7ty

Grade 10 (ICT): http://www.bbc.co.uk/education/subjects/zqmtsbk

Grade 10 (Computing): http://www.bbc.co.uk/education/subjects/z34k7ty

Curriculum Content for Oct 2017:

Grade 5: Scratch - programming

Session Name	Description	Learning Intention
Programming Skills	Project 1: Monster's feeling	● To explain the interface of Scratch ● To explain difference between bitmap image and vector image. ● To explain using Sprites, applying backgrounds, adding and deleting sprites. ● To learn and practice switching between costumes and customizing costumes. ● To learn about events and different control structures. ● To apply techniques learned in different assigned projects.
	Project 2: Introduction to Storyboards	
	Project 3: Side Scroller	
	Project 4: Parallax	
	Project 5: Create your own game	

Grade 6: Network

Session Name	Description	Learning Intention
Network, Security and Ethics	Secure Websites- How to check	● To understand which kinds of websites have privacy policies, and why. ● To practice checking websites they visit for privacy policies and privacy seals of approvals ● To learn which information they should avoid sharing online because it is private. ● To learn that they have a digital footprint and that information from it can be
	Cyber Footprint	

	Cyber Ethics	searched; copied and passed on; seen by a large, invisible audience, and can be persistent. ● To recognize that people's online information can be helpful or harmful to their reputation and image. ● To consider their own digital footprints and what they want those footprints to be like in the future.
	Networks	

Grade 7: Spreadsheet and Databases

Session Name	Description	Learning Intention
Page Layout	Students will learn methods to create basic document and will learn difference between different layouts.	To learn and practice following skills: ● Set page size, orientation, margins, gutter margins ● Set number of columns in a page. ● Set column width and spacing between columns ● Defining the term widow and orphan ● Explaining why it is necessary to use page, section and column break to adjust pagination and avoid widows and orphans ● Set and remove page section and column break. ● Set line spacing, paragraph indentation, hanging paragraphs ● Formatting text: bold, italic, bulleted, lists ● Inserting, formatting and editing a table structure ● Mail merge a document with a data source.
Formatting documents	Students will learn different formatting techniques for document production	
Header/ Footer	Students will learn to insert automated header footer and benefits.	
Inserting and formatting Table	Students will learn to insert table, formatting the tables, applying design, merging cells and adding images in the table.	
Mail Merge	Students will learn mail merging a document with a data source.	

Grade 8: Document Production and Databases

Session Name	Description	Learning Intention
Inserting and formatting Table	Students will learn to insert table, formatting the tables, applying design, merging cells and adding images in the table.	To learn and practice following skills: ● Set page size, orientation, margins, gutter margins ● Set number of columns in a page. ● Set column width and spacing between columns ● Defining the term widow and orphan ● Explaining why it is necessary to use page, section and column break to adjust
Mail Merge	Students will learn mail merging a document with a data source.	

Databases	Students will learn how to create a databases and input data.	pagination and avoid widows and orphans ● Set and remove page section and column break. ● Set line spacing, paragraph indentation, hanging paragraphs ● Formatting text: bold, italic, bulleted, lists ● Inserting, formatting and editing a table structure ● Mail merge a document with a data source. ● Creating database column ● Creating database rows ● Inserting data into the appropriate columns and rows

Grade 9&10 ICT:

Session Name	Description	Learning Intention
ICT System	Understand that an ICT system is made up hardware and software	**Hardware:** - Input devices: for example keyboard, mouse, tracker ball, joystick, graphics tablet, scanner, digital camera, webcam, microphone, touch screen, OMR, OCR, bar code scanner, biometric scanner, magnetic stripe reader, chip and pin, sensors -Processing: processor, memory, ROM, RAM -Storage: for example hard disks, optical discs, flash memory, magnetic tape -Output devices: for example monitor, printer, plotter, data projector, speakers, control devices **Software Systems:** -software: for example operating system, system software tools. -Applications software: for example office productivity tools, web authoring, image and sound editing, presentation software, control software, project management software.

Grade 9&10 Computing:

Session Name	Description	Learning Intention
Memory, storage devices and media	Memory Primary storage	● show understanding of the difference between: primary, secondary and off-line storage and provide examples of each, such as: primary: Read Only Memory (ROM), and Random Access Memory (RAM) secondary: hard disk drive (HDD) and Solid State Drive (SSD); off-line: Digital

	Secondary Storage Storage Devices	Versatile Disc (DVD), Compact Disc (CD), Blu-ray disc, USB flash memory and removable HDD ● describe the principles of operation of a range of types of storage device and media including magnetic, optical and solid state ● describe how these principles are applied to currently available storage solutions, such as SSDs, HDDs, USB flash memory, DVDs, CDs and Blu-ray discs ● calculate the storage requirement of a file

Best Regards,

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