



PUTTING THE FUN BACK  
INTO LEARNING!

Dear Parents and Guardians,

Welcome to the ICT and Computing February Curriculum Guide. Our aim is 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.

## **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.

## **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.

## **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 visual programming to create different types of programs such as games.

### **Grade 6:**

Students will cover the topics on visual based programming, students will be using Kodu game lab to learn how to code games. Students will learn how to design a game background, create characters and program the character to carry out different actions.

**Grade 7:**

Students will learn how to use multiple tools in Photoshop to edit images to create a portfolio of images to be used in their digital multimedia portfolio. Students will be making spoof images, a magazine cover and movie poster.

**Grade 8:**

Students will learn how to use multiple tools in Photoshop to edit images to create a portfolio of images to be used in their digital multimedia portfolio. Students will be making spoof images, a magazine cover and movie poster.

**Grade 9:**

In ICT lessons Grade 9 students will be learning about personal digital devices, their uses, functions and features. Students will learn how to select appropriate digital devices to meet the needs of different users and justify their selections.

In Computer Science lessons Grade 9 students who have chosen this option will be covering theory topics on the need to keep data safe and the methods employed to ensure this. They will also be doing practical work on programming concepts, designing and writing programs in Python using the online Python editor at Code academy. This is to ensure that students are able to learn independently in class and at home.

**Grade 10:**

In ICT lessons Grade 10 students will be learning how to select and use software applications to meet needs and solve problems; and how to enter, organise, develop, refine and format information, applying editing techniques to meet user needs.

In computer science lessons Grade 10 students who have chosen this option will be covering theory topics on input devices / output devices and sensors and how they are used to aid processing in a computer system. They will also be doing practical work on programming concepts, designing and writing programs in Python.

**How Can You Help?** Encourage your child to enjoy working on their skills developed by practising at home using the websites recommended below.

**Homework:** All assigned homework will be either paper based or electronic. Students will require USB to backup work and take electronic copies of homework when required.

**Useful Website:**

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

Grade 6: <https://codecombat.com/>

Grade 7: [www.bbc.co.uk/education/subjects/zvc9q6f](http://www.bbc.co.uk/education/subjects/zvc9q6f)

Grade 8: [www.bbc.co.uk/education/subjects/z8mtsbk](http://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 February 2018:**

### **Grade 5:** Scratch - programming

Session Name	Description	Learning Intention
Programming Skills	Introduction to Story boards	<ul style="list-style-type: none"><li>• To explain using Sprites, applying backgrounds, adding and deleting sprites.</li><li>• To learn and practise switching between costumes and customising costumes.</li><li>• To learn about events and different control structures.</li><li>• To apply techniques learned in different assigned projects.</li></ul>
	Side Scroller	
	Parallax	

### **Grade 6:** Computer Networks and security

Session Name	Description	Learning Intention
<b>Kodu Game Lab</b>	Creating a new world	<ul style="list-style-type: none"><li>• To understand how to add characters and change their visual and behavior properties.</li><li>• Be able to make a character move and follow a predetermined pathway.</li><li>• Understand how to make a character fire a missile and keep score.</li><li>• Understand how a character can interact with different objects in a game world.</li></ul>
	Creating and making a character move	
	Designing a complex game background	
	Creating a game that shoots character	

## Grade 7: Digital Multimedia

Session Name	Description	Learning Intention
<b>Teacher Makeover</b>	Students will learn how to use the burn, dodge and spot healing tool.	<ul style="list-style-type: none"><li>• Understand how to combine the dodge and burn tools along with spot removal in Photoshop.</li><li>• Understand how to combine layers to create new images</li><li>• Be able to merge images together using the clone tool in Photoshop</li><li>• To be able to create a magazine cover for a movie by combining multiple Photoshop tools</li></ul>
<b>Spoof Stories</b>	Students will learn how to combine layers to create one seamless image	
<b>Creating a New Animal</b>	Students will learn how to clone different features of different layers to create a new animal	
<b>Designing a Movie Magazine Cover</b>	Students create their own magazine cover for their movie	

## Grade 8: Digital Multimedia

Session Name	Description	Learning Intention
<b>Teacher Makeover</b>	Students will learn how to use the burn, dodge and spot healing tool.	<ul style="list-style-type: none"><li>• Understand how to combine the dodge and burn tools along with spot removal in Photoshop.</li><li>• Understand how to combine layers to create new images</li><li>• Be able to merge images together using the clone tool in Photoshop</li><li>• To be able to create a magazine cover for a movie by combining multiple Photoshop tools</li></ul>
<b>Spoof Stories</b>	Students will learn how to combine layers to create one seamless image	
<b>Creating a New Animal</b>	Students will learn how to clone different features of different layers to create a new animal	
<b>Designing a Movie Magazine Cover</b>	Students create their own magazine cover for their movie	

## Grade 9 ICT:

Session Name	Description	Learning Intention
<b>Types of digital devices</b>	Students need to know about computers and other digital devices. They need to understand how each type of device is used but not the technology behind their operation.	<ul style="list-style-type: none"><li>• Know about types of mobile phones; smartphones and specialist phones and how they connect to the network (SIM).</li><li>• Know about navigation aids and how they are used.</li><li>• Understand the terms 'multifunctional' (e.g. mobile phones that include a</li></ul>

		camera, have limited game playing functionality and GPS) and 'convergence' (e.g. functionality of smartphones and tablet devices becomes more similar) in the context of digital devices.
<b>Features of Digital Devices</b>	Students need to be able to discuss and explain the different features of digital devices and the advantages/disadvantages of these features	<ul style="list-style-type: none"> <li>• Understand features of digital devices: portability, performance, storage, user interface, connectivity, media support, energy consumption, expansion capability, security features.</li> <li>• Be able to discuss the features of identified digital devices</li> </ul>

### Grade 10 ICT:

Session Name	Learning Intention	Description
<b>Select and use appropriate software</b>	<p>Be able to select and use software applications to meet needs and solve problems</p> <p>Be able to enter, organise, develop, refine and format information, applying editing techniques to meet needs</p>	<ul style="list-style-type: none"> <li>• Software applications: word processing, spreadsheet, database, graphics, web authoring, presentation, audio and video editing software</li> <li>• Organise: structure of information, document layout, headings, sub-headings, lists, tables, use of templates</li> <li>• Edit: highlight, drag and drop, find, replace, undo, redo, templates</li> </ul>
<b>Select and use appropriate page layout</b>	Be able to use appropriate page layout	<ul style="list-style-type: none"> <li>• Layout: columns, margins, header, footer, portrait, landscape, page breaks, page numbering</li> <li>• Format text: bullets, numbering, sub-numbering, alignment, tabs, line spacing, colour, font, style, size, tables</li> </ul>

## Grade 9 Computing:

Session Name	Description	Learning Intention
<b>Securing Data</b>	need  methods	<ul style="list-style-type: none"><li>• show understanding of the need to keep data safe from accidental damage, including corruption and human errors</li><li>• show understanding of the need to keep data safe from malicious actions, including unauthorised viewing, deleting, copying and corruption</li><li>• show understanding of how data are kept safe when stored and transmitted, including: – use of passwords, both entered at a keyboard and biometric – use of firewalls, both software and hardware, including proxy servers – use of security protocols such as Secure Socket Layer (SSL) and Transport Layer Security (TLS) – use of symmetric encryption (plain text, cypher text and use of a key) showing understanding that increasing the length of a key increases the strength of the encryption</li></ul>
<b>Data structures</b>	<b>Code Academy</b>	<ul style="list-style-type: none"><li>• Students are using the online Python editor and exercises to consolidate the knowledge of Python coding in School and at home.</li></ul>

## Grade 10 Computing:

Session Name	Description	Learning Intention
<b>Input and Output Devices</b>	Input Devices	<ul style="list-style-type: none"><li>• describe the principles of operation (how each device works) of these input devices: 2D and 3D scanners, barcode readers, Quick Response (QR) code readers, digital cameras, keyboards, mice, touch screens, interactive whiteboards, microphones</li></ul>



		<ul style="list-style-type: none"><li>• read or write values in an array using a FOR ... TO ... NEXT loop</li></ul>
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Best Regards,

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