

# DIGITAL TECHNOLOGY ANNUAL TEACHING PLAN GRADE 8 AND 9

NAME OF TEACHER: XXX

SCHOOL: XX

## Content outline

### Grade 8

## Term 1

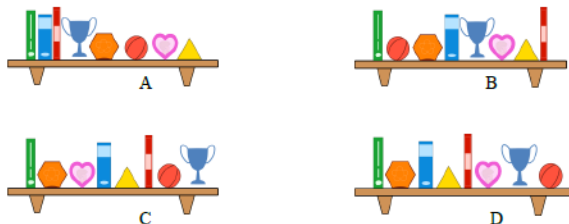
TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
<b>Systems technologies</b>  Introduction to computers  Devices  Information processing cycle  File management	<p>Basic components of a computer system</p> <p>Display a knowledge of the devices required:</p> <ul style="list-style-type: none"><li>• Input devices</li><li>• Output devices</li><li>• Identify storage devices and capacities (hard drive, flash drive, optical drive/disc, memory cards)</li><li>• Digital communication devices</li></ul> <p>Display a knowledge of the Information Processing Cycle:</p> <ul style="list-style-type: none"><li>• Input, output, processing, storage and communication</li><li>• Expand concept of processing (CPU and RAM)</li></ul> <p>Demonstrate basic file management tasks:</p> <ul style="list-style-type: none"><li>• Create a new file/folder</li></ul>	<b>2 hours</b>	<p><b>Resources:</b> Notes, posters, internet search for pictures, advertisements, etc.</p> <p>Possible teaching activities:</p> <p><b>Activity (Devices):</b> Crossword puzzle where clues are pictures and learners will have a name list resource for storage devices. Learners will associate names in the list with the pictures and finally write the correct term in the crossword frame.</p> <p><b>Activity (Information Processing Cycle):</b> Worksheet with pictures of the Information Processing Cycle. Learners will identify and explain the steps in the cycle that they will get from a resource that teacher will prepare in random order.</p> <p><b>Note:</b> Learners should be able to interpret simple advertisements regarding basic devices.</p> <p><b>Activity (File Management):</b> Demonstrate how to switch on and shut down (restart) a computer.</p>	

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
	<ul style="list-style-type: none"> <li>Copy, cut and paste a document to a new location</li> <li>Open, save and close features of files, e.g. 'open with', 'save to', 'close all'</li> <li>View and sort files/folders, e.g. by name, by date, by type (file extension), by size</li> </ul>		<p>Identify and name the different basic components within the operating system environment e.g. files, folders, taskbar, start button, etc.</p> <p>Teacher to demonstrate the use of cut, copy and paste files within and between folders. Activities that allow learners to drag and drop files and folders, double clicking, left click and right click.</p> <p>Create/use a set of instructions that direct the learner to perform practical activities with regard to file management tasks.</p>	
<b>Keyboarding skills (using a Typing Tutor)</b>	<ul style="list-style-type: none"> <li>Demonstrate the correct typing posture and positioning of fingers, wrists, fore-arms and back to facilitate touch typing.</li> <li>Able to identify different sections on keyboard (alphabetical, numerical, function keys)</li> <li>Able to type home row (asdfgh;lkj)</li> <li>Able to type top row (qwertyuiop) and home row</li> <li>Able to type bottom row (zxcvbnm,./) and home row</li> <li>Able to type a combination of short words</li> </ul>	<b>4 hours</b>	<p>The correct posture for sitting in front of computer, hands on keyboard, elbows etc.</p> <p>Drill exercises consisting of letter combinations</p> <p>Use a typing tutor that are available as open source or freeware</p> <p><b>Note:</b></p> <p>Any suitable method for learning to touch type could be followed.</p> <p>After learners master the basic keyboarding and touch-typing skills they should practise on a regular basis, e.g. first few minutes of each period or at the end of a week.</p> <p>Time management for keyboarding skills should be controlled by the teacher.</p>	

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
<b>Word Processing:</b> Formatting and editing  Basic printing options	Understand the purpose of using a word processor, such as Microsoft Word  Become familiar with the Word processing environment  Basic use of the word processor: <ul style="list-style-type: none"> <li>• open a new blank &lt;Ctrl N&gt;/existing document</li> <li>• type words, sentences and paragraphs</li> <li>• understand and apply:               <ul style="list-style-type: none"> <li>o word wrapping</li> <li>o the use of the hard return &lt;Enter&gt;</li> <li>o the use of the soft return &lt;Shift Enter&gt;</li> </ul> </li> <li>• save documents &lt;Ctrl S&gt;</li> <li>• print documents &lt;Ctrl P&gt; (printing options: select printer, print all pages, print selection, print current page, custom print)</li> </ul>	2 hours	Activities consisting of words, sentences and paragraphs.  <b>Note:</b> Shortcuts can be taught during or after the skill has been taught.  <b>Explanations:</b> <b>Word wrapping</b> is when the word processor automatically moves text to the next line when reaching the right-hand margin).  <b>Hard return:</b> The <b>word</b> processor forces the text to the start a next paragraph when the <b>Enter key</b> is pressed  The <b>soft return</b> keeps the text together (in the same paragraph), but on separate lines.	
<b>Word Processing:</b> Formatting and editing	Apply basic formatting techniques to words/text/ paragraphs using the following: <ul style="list-style-type: none"> <li>• use the <b>Font group</b> on the <b>Home tab</b> (of MS Word)</li> <li>• apply bold &lt;Ctrl B&gt;, italics &lt;Ctrl I&gt;, and underline &lt;Ctrl U&gt; features</li> <li>• change the font type and size</li> <li>• highlight text, change font colour, text effects</li> <li>• select words, text and paragraphs using mouse or alternative methods</li> </ul>	2 hours	Teacher will demonstrate the following formatting:  <b>Font group</b> includes font type, font size, change case, bold, italics, underline, text effects, highlight text, font colour   Mouse selections: double click to select a word and triple click to select a paragraph  Alternative method for selecting text: Shift and Arrow keys	

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
	<ul style="list-style-type: none"> <li>edit words/text/paragraphs using cut (delete) &lt;Ctrl X&gt;, copy &lt;Ctrl C&gt;, paste (insert), &lt;Ctrl V&gt;</li> <li>different methods of deleting</li> <li>apply built-in Styles to format text</li> </ul>			
<b>Word Processing:</b> Spelling and Grammar checking	Type a variety of paragraphs: <ul style="list-style-type: none"> <li>without/with headings</li> <li>use word processing features to proofread and correct work, i.e. use spell check</li> <li>find synonyms for words using Thesaurus</li> <li>basic use of the Find and Replace feature (search for text and replace it with something else)</li> </ul>	2 hours	<b>Resources:</b> Typed activities from textbooks, self-designed examples  Proofreading off the screen should be strongly encouraged.  Learners will do activities to practise the use of the Spelling and Grammar checker and Thesaurus.  <b>Note:</b> Learners should be able to apply styles from the Style gallery to paragraphs with headings.	
<b>Word Processing:</b> Basic illustrations	Insert and manipulate illustrations: <ul style="list-style-type: none"> <li>insert and resize shapes (including move, crop, cut (delete), copy and paste, recolour</li> <li>insert and resize pictures (including move, crop, cut (delete), copy and paste, recolour</li> <li>apply wrapping and grouping options to shapes and pictures</li> </ul>	2 hours	Teacher to demonstrate the use of a basic illustrations. Learners to practice the following: adjust size, create basic regular shapes, use different colours fills, outlines and effects. Cropping, wrapping and resizing images.  <b>Activities:</b> <ul style="list-style-type: none"> <li>Learners will do activities to practise resizing, cropping and wrapping of shapes and pictures.</li> <li>Learners to group and ungroup multiple pictures and shapes.</li> </ul> <b>Note:</b> Do NOT include the Lock aspect ratio when resizing shapes and pictures.	
<b>Computational Thinking</b>	Overview of Computational Thinking: <ul style="list-style-type: none"> <li>Pattern recognition</li> <li>Decomposition</li> </ul>	2 hours	Learners are given pieces or blocks of statements and asked to form a working whole e.g. Parson's puzzles – it provides learners with a selection of jumbled	

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
	<ul style="list-style-type: none"> <li>Abstraction</li> <li>Algorithms</li> </ul> <p>Focus on Detail and Sequence (Basic algorithmic thinking using daily examples)</p> <ul style="list-style-type: none"> <li>Use detail and sequence to follow certain steps to complete a task or solve a problem</li> <li>Place objects/statements/words in a correct order</li> </ul>		<p>statements/steps that they need to rearrange to complete a task or solve a problem.</p> <p>Activities such as the following:</p> <p><b>Activity 1</b></p> <p>Sequence the following steps so that they are in a logical order:</p> <div> <div>Turn off the tap</div> <div>Dry your hands</div> <div>Rub your hands together</div> <div>Rinse the soap away with water</div> <div>Rinse your hands with water</div> <div>Put soap on your hands</div> <div>Turn on the tap</div> </div> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>Steps must be easy to understand</li> <li>Detailed and specific</li> <li>Clear and unambiguous</li> </ul> <p><b>Activity 2</b></p> <p>Beatrix is trying to rearrange her shelf. She has two rules:</p> <ol style="list-style-type: none"> <li>1. Rectangular items must not be next to each other.</li> <li>2. Circular items must not be next to rectangular items.</li> </ol> <p><b>Question:</b></p>	


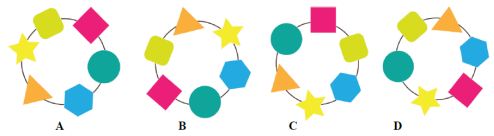
TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
			<p>Which one of these shelves has followed her rules correctly?</p> 	
<b>Consolidation and Practise</b>	<ul style="list-style-type: none"> <li>Consolidate content and skills</li> </ul>	<b>2 hours</b>		
<b>Formal Assessment</b>	<ul style="list-style-type: none"> <li>The assessment will consist of Practical task/s (keyboarding skills, word processing skills) with a weighting of 60% and a Theory test (systems technologies, computational thinking as well as theory questions regarding word processing) with a weighting of 40%. E.g., Theoretical assessment can be done with multiple-choice questions showing a picture and giving options for the correct terminology.</li> </ul>	<b>2 hours</b>		
<b>TOTAL</b>		<b>20 hours</b>		

## Term 2

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
<b>Keyboarding skills</b>	<ul style="list-style-type: none"> <li>Type with other keys on the keyboard such as Shift, Caps Lock, Insert, Delete, Backspace, Page up, Page down, Home, End, Tab, undo &lt;Ctrl Z&gt;, redo &lt;Ctrl Y&gt;, Print screen;</li> <li>Revise alphabetical keys.</li> <li>Type 2 to 5 minute speed and accuracy tests.</li> <li>Introduce number keys on the top row: 1234567890</li> </ul>	<b>4 hours</b>	<p>Variety of keyboard exercises should be done at the start of every lesson/day for remedial, accuracy or speed building purposes</p> <p><b>Note:</b> After learners master the keyboard (can touch type) keyboarding skills should be practiced on a regular basis, e.g. first 10 minutes of each period.</p> <p><b>Activity:</b> Learners practise the use of the number keys</p>	
<b>Digital citizenship</b>	<ul style="list-style-type: none"> <li>Introduce concepts of the WWW and URL</li> <li>Introduce the concept of the internet</li> <li>Connecting to the internet</li> <li>Explain what the purpose of a browser is</li> <li>Identify two web browsers</li> <li>Explain how to work with a web browser: buttons, address bar, search bar, tabs and tabbed browsing, downloads, history</li> <li>Explain website, web page and hyperlink</li> <li>Explain two search engines</li> <li>Safe Internet and device usage: passwords, two-factor authentication, captcha</li> </ul>	<b>2 hours</b>	<p>Work with a web browser</p> <p><b>Activity:</b> Type in a URL in the address bar</p> <p><b>Activity:</b> How to use search engines</p> <p>Purpose of safe Internet and device use (What, why and how)</p> <p>Good practices for creating and using passwords;</p> <p>Other examples of using the Internet safely such as two-factor authentication and captcha.</p> <p><b>Activity:</b> Explore and customise settings on your phone to ensure privacy of information. Lock your phone with a pin code or pattern lock. This ensures that even if your phone is stolen, no immediate access is possible.</p>	

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETE D
<b>Word Processing:</b> Page layout/setup	Type/use a variety of layout options: <ul style="list-style-type: none"> <li>• Apply and customise margin sizes</li> <li>• Change page orientation (Portrait and landscape)</li> <li>• Two pages using forced/manual page breaks</li> <li>• Select a paper size</li> <li>• Page borders (basic): settings, style, colour, width, art borders</li> </ul>	<b>2 hours</b>	<b>Activity:</b>  Teacher to prepare some text in one lengthy paragraph. [Tip: generate random dummy text for Word by typing the following formula: =rand(1,50), i.e. Random data relating to word processing of 1 paragraph and 50 lines will appear.] Learners change margin sizes and paper sizes, change page orientation, insert page breaks and page borders.	
<b>Word Processing:</b> Layout and paragraph formatting	Type/use a variety of layout and formatting options: <ul style="list-style-type: none"> <li>• Change line spacing (single, 1.5 and double)</li> <li>• Change paragraph spacing (before and after)</li> <li>• Apply paragraph alignment (left, centre, right, justify)</li> <li>• Increase and decrease indent feature on the Home tab in the Paragraph group</li> <li>• Inserting symbols (basic: caret (ê), acute (é), diaeresis (ë), plus-minus (±), etc.</li> <li>• Bulleted lists (basic)</li> <li>• Numbered lists (1 level only) Preference to numbers but exposure to Roman numerals (i, ii, iii) as well as</li> </ul>	<b>2 hours</b>	<b>Activity:</b>  Teacher to prepare some text in one lengthy paragraph. [Tip: generate random dummy text for Word by typing the following formula: =rand(1,50), i.e. Random data relating to word processing of 1 paragraph and 50 lines will appear.] Learners will perform the various formatting and editing on the text.  Screen proofreading should be strongly encouraged.  <b>Note:</b> Numbered lists are used when sequence is important, otherwise use bulleted lists	

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	Alphabetical (a, b, c) numbering.			
<b>Spreadsheets</b>	<ul style="list-style-type: none"> <li>Explain the purpose of a spreadsheet and the concepts of a cell, row, column and a sheet.</li> <li>Understand the use of cell references</li> <li>Demonstrate the resizing of rows and columns</li> <li>Transfer common features from word processing skills (e.g. copy, paste, save) to spreadsheets (and vice versa)</li> <li>Use basic formatting and editing to format cells: wrap, merge, unmerge, alignment, borders, shading, text direction</li> <li>Use the autofill feature</li> <li>Decide on common data types such as <ul style="list-style-type: none"> <li>General</li> <li>Number, including number of decimal places</li> <li>Currency, including number of decimal places</li> <li>Text</li> </ul> </li> <li>Use formulae (calculations) with basic operators including brackets: addition (+), subtraction (-), multiplication</li> </ul>	<b>4 hours</b>	<p>Teacher to introduce basic spreadsheet environment, explaining rows, columns, cells and sheets. Give a practical example of the purpose of a spreadsheet. Different methods of editing contents of cells. Provide activities to practice:</p> <ul style="list-style-type: none"> <li>Cell/row height and cell/column width</li> <li>Selecting cells/cell ranges. Applying formatting such as: wrap, merge, split, alignment, borders, shading, text direction and autofill</li> </ul> <p><b>Activity:</b></p> <p>Teacher to develop a document where cells are inappropriately formatted for given data and learners are required to format all cells/data correctly.</p> <p><b>Activity:</b></p> <p>Learners to practise basic calculations in spreadsheets.</p>	

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETE D
	(*) and division (/) <ul style="list-style-type: none"> <li>Understand the order of precedence</li> </ul>			
<b>Computational Thinking</b>	<p>Revise sequence and detail concepts using basic algorithms</p> <p>Focus on pattern recognition;</p> <ul style="list-style-type: none"> <li>Identify what a pattern is</li> <li>Interpret a given set of raw data then recognise the pattern</li> <li>Look for similarities among and within problems</li> <li>Make predictions based on patterns</li> </ul> <p>Consolidate Computational Thinking concepts and practices.</p> <p><b>Note</b></p> <p>Integrate computational thinking concepts and practices with other topics where applicable such as spreadsheets</p>	<b>2 hours</b>	<p>Activities such as:</p> <p><b><u>Activity 1</u></b></p> <p>Emily has broken her favourite bracelet. The broken bracelet now looks like this:</p>  <p><b>Question:</b></p> <p>Which of the following four bracelets shows what the bracelet looked like when it was whole?</p>  <p><b><u>Activity 2</u></b></p> <p>Three spotlights are used to light the theatre stage in the beavers' forest, a red one, a green one and a blue one. The colour of the stage depends on which of the three spotlights are turned on.</p> <p>This table shows the possible combinations of colours.</p>	

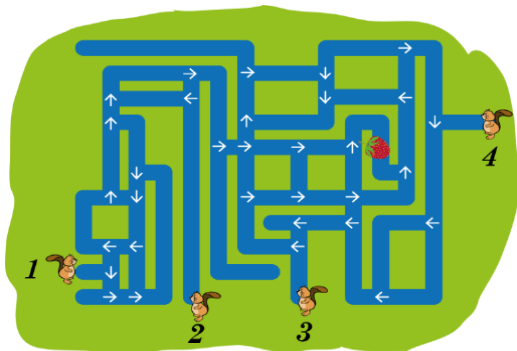
TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETE D																																				
			<table><tr><th>Red light</th><th>Green light</th><th>Blue light</th><th>Stage colour</th></tr><tr><td>off</td><td>off</td><td>off</td><td>Black</td></tr><tr><td>off</td><td>off</td><td>on</td><td>Blue</td></tr><tr><td>off</td><td>on</td><td>off</td><td>Green</td></tr><tr><td>off</td><td>on</td><td>on</td><td>Cyan</td></tr><tr><td>on</td><td>off</td><td>off</td><td>Red</td></tr><tr><td>on</td><td>off</td><td>on</td><td>Magenta</td></tr><tr><td>on</td><td>on</td><td>off</td><td>Yellow</td></tr><tr><td>on</td><td>on</td><td>on</td><td>White</td></tr></table> <p>From the beginning of the show, the lights will be switched on and off in this pattern:</p> <ul style="list-style-type: none"><li>• The red light repeats the sequence: two minutes off, two minutes on.</li><li>• The green light repeats the sequence: one minute off, one minute on.</li><li>• The blue light repeats the sequence: four minutes on, four minutes off.</li></ul> <p><b>Question:</b></p> <p>What will the colour of the stage be in the first 4 minutes of the show?</p> <div><div></div><div></div><div></div><div></div><div>Minute 1</div><div>Minute 2</div><div>Minute 3</div><div>Minute 4</div></div>	Red light	Green light	Blue light	Stage colour	off	off	off	Black	off	off	on	Blue	off	on	off	Green	off	on	on	Cyan	on	off	off	Red	on	off	on	Magenta	on	on	off	Yellow	on	on	on	White	
Red light	Green light	Blue light	Stage colour																																					
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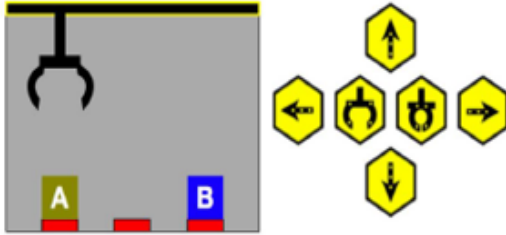
TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
	weighting of 40%.			
TOTAL		20 hours		

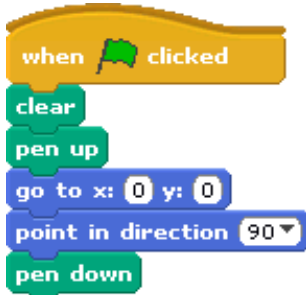
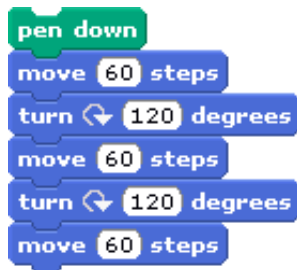
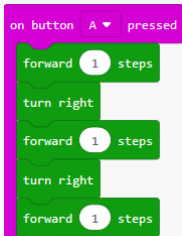
### Term 3

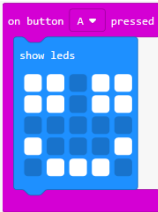
TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETE D
<b>Keyboarding skills</b>	<ul style="list-style-type: none"> <li>Revise alphabetical and number keys</li> <li>Type 2 to 5 minute speed and accuracy tests</li> <li>Type special characters, symbols and punctuation marks available on the keyboard. (! @ # \$ % ^ &amp; * ? &lt; &gt;)</li> <li>Revise common shortcuts for Editing text e.g. Ctrl B (bold), Ctrl I (italic), Ctrl U (underline), Ctrl Z (undo) and Ctrl + Enter (hard return/page break), Ctrl C (copy), Ctrl X (cut), Ctrl V (paste)</li> </ul> <p>Integrate computational thinking concepts and practices where applicable</p>	<b>2 hours</b>	<p>Variety of keyboard activities should be done for remedial, accuracy or speed building purposes using all the keys, including the shortcuts</p> <p><b>Note:</b></p> <p>Keyboarding skills should be practised on a regular basis, e.g. first few minutes of each period.</p>	
<b>Digital citizenship</b>	<p>Understand the privacy of information and information piracy</p> <p>Understand cybercrime threats, issues and remedies:</p> <ul style="list-style-type: none"> <li>identity theft</li> <li>hacking</li> <li>phishing</li> </ul>	<b>2 hours</b>	<p>Give examples on how sharing of personal information can be unsafe as well it being offensive, embarrassing or humiliating to others.</p> <p>Teachers should focus on examples of identity theft. And then ways to prevent it. An activity can be done that pitches two websites against each other and the reasons why one is safe and the other is not. What to look for to verify it being safe. Also look for reviews from other people who have used a shopping site and their experiences</p> <p><b>Activity:</b> Learners could engage in safety quizzes.</p>	

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
<b>Word Processing:</b> Tab settings  Tables	Use tab settings in the word processor by applying: <ul style="list-style-type: none"> <li>• tabs setting (left, centre, right)</li> </ul> Produce tables using the table feature in the word processor and manipulate by: <ul style="list-style-type: none"> <li>• changing borders and shading</li> <li>• merging of cells</li> <li>• inserting or deleting rows/columns</li> <li>• changing cell alignment</li> <li>• change text direction in a cell/column/row</li> <li>• apply table styles</li> </ul>	2 hours	Apply tab settings on the Paragraph group on the Home tab  A table can then be inserted between two paragraphs. Certain rows and/or columns can be merged/unmerged.	
<b>Spreadsheets:</b> Basic functions Sorting Error indicators Troubleshooting	<ul style="list-style-type: none"> <li>• Cell ranges</li> <li>• Use basic functions: MIN, MAX, SUM, COUNT and AVERAGE to solve simple problems</li> <li>• Sort data – up to two levels</li> <li>• Identify problems based on the following error indicators: #VALUE, #NAME, #NUM, #REF, #DIV/0, #N/A, #####</li> <li>• Troubleshoot basic errors in formulae and functions</li> </ul> Integrate with computational thinking concepts and practices where applicable	4 hours	Give learners some problems that allow them to use the required formulae and functions on prepared data.  Learners use formulae and functions to solve real-life problems. E.g. monthly budget, calculating area and perimeter, or problems that learners encounter in Mathematics and Mathematical Literacy, etc.  Prepare an activity giving the error indicator which expects the learners to give the cause of the error.  Provide incorrect formulae for learners to troubleshoot.	

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETE D
Computational Thinking	<p>Revise sequence and detail as well as pattern recognition concepts</p> <p>Focus on algorithms:</p> <ul style="list-style-type: none"> <li>Understand what an algorithm is using simple real-life scenarios</li> <li>Read, understand and explain an existing algorithm</li> <li>Test steps in an algorithm</li> </ul> <p>Consolidate Computational Thinking concepts and practices.</p> <p><b>Note</b></p> <p>Integrate computational thinking concepts and practices with other topics where applicable such as spreadsheets and coding</p>	2 hours	<p>Teacher asks learners questions (See <b>Annexure 2</b> Developing Algorithms) examples:</p> <p>Teacher can demonstrate a simple problem such as the making of a cup of coffee and introduce the concept of an algorithm showing learners the various steps in making the coffee.</p> <p>Examples of activities:</p> <p><b>Activity 1:</b></p> <p>Four beavers start swimming from different places.</p> <p>They only swim forwards and always follow the arrows.</p>  <p><b>Question:</b></p> <p>Select all the beavers who will reach the strawberry?</p> <p><b>Activity 2:</b></p>	

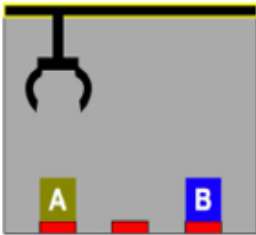

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETE D
			<p>The crane in the port of Lodgedam responds to six different input commands:</p> <ol style="list-style-type: none"> <li>1. Left</li> <li>2. Right</li> <li>3. Up</li> <li>4. Down</li> <li>5. Grab</li> <li>6. Release</li> </ol>  <p>Crate A is in the left position, crate B is in the position on the right</p> <p><b>Question</b></p> <p>Which is the correct set of instructions to swap the position of the two crates? Write down the letter of the correct answer.</p> <p>A (Down, Grab, Up, Right, Down, Release, Up)</p> <p>B (Down, Grab, Up, Right, Down, Release, Up) (Right, Down, Grab, Up, Left, Left, Down, Release, Up) (Right, Down, Grab, Up, Right, Down, Release)</p> <p>C (Right, Right, Down, Grab, Up) (Left, Left, Down, Release, Up)</p> <p>D (Down, Grab, Up, Right, Right, Down, Release, Up) (Down, Grab, Left, Down, Release, Up) (Down, Grab, Up, Right, Down, Release, Up)</p>	
Coding	<ul style="list-style-type: none"> <li>Identify and interact with block-based programming environment, components and understand their roles/features</li> </ul>	4 hours	<p><b>Scratch examples:</b></p> <p><b>Activity:</b> Teacher will facilitate getting started with Scratch by using examples and introductions from the Scratch website and/or some of</p>	

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETE D	
	<ul style="list-style-type: none"><li>Create shapes/animations using a block-based programming language, e.g. Scratch, Micro:Bit or similar (e.g. use pen/turtle)</li><li>Create solutions for simple, basic problems to illustrate spatial orientation/logical sequence through animation and shapes</li><li>Introduce Events as needed</li></ul> <p><b>Note:</b></p> <p>Include basic, single condition (IF THEN) or simple, single loop (REPEAT (specified number of repeats) or FOREVER) required, e.g.</p> <ul style="list-style-type: none"><li>when sprite needs to turn when touching edge, a simple, single condition could be introduced.</li><li>when learners identify patterns in drawing (such as when drawing a square) they could use basic, single loop to 'shorten' the code.</li></ul> <p><b>Note</b></p>		<p>the many 'Introduction to Scratch' videos available on the internet, such as <a href="http://codeclubprojects.org">codeclubprojects.org</a>. (freely resources).</p> <p><b>Activity:</b> Provide completed programs., e.g. use the code on right. Learners will explore and note of what the effect of the scripts are</p> <ul style="list-style-type: none"><li>Explain the role of the “pen”: Will leave a line even when moving Therefore pen must be in up position moving. As new lines are drawn over the old ones, you have to clear the paint area before starting a new run.</li></ul> <p>Learners could also 'act out' (role play) the code on a grid drawn onto the floor to understand what it is doing.</p> <p><b>Now use the code on the right</b></p> <ul style="list-style-type: none"><li>Let learners explore to see what the does.</li><li>Let learners draw more shapes.</li><li>Learners to look for patterns / repetition (include basic, single loop if required)</li></ul> <p>Explain to learners that the shape depends on the size of the angles.</p> <p><b>Micro:Bit examples:</b></p> <p><b>Activity:</b></p>	<div><p>Scratch the make a various to 0, 0. before</p></div> <div><p>code</p></div> <div></div>	

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETE D
	<p>Integrate coding with computational thinking concepts, practices and perspectives</p> <p><b>Note:</b></p> <p>Include basic, single condition (IF THEN) or simple, single loop (FOREVER) required, e.g.</p> <ul style="list-style-type: none"> <li>when learners identify pattern in drawing (such as when drawing a square) they could use basic, single loop to 'shorten' the code.</li> </ul>		<p>Imagine that there's a virtual turtle, as small as an LED, that you can control with commands to draw a square.</p> <p>Learners could also 'act out' (role play) the code on a grid drawn onto the floor to understand what it is doing.</p> <p>Make learners aware of the pattern(s) in the</p> <p><b>Activity:</b></p> <p>Code the buttons on the micro:bit to represent 'smileys', e.g. to show that it's or sad</p>  <p>code</p> <p>happy</p>	
<b>Consolidation and Practise</b>	<ul style="list-style-type: none"> <li>Consolidate content and skills</li> </ul>	<b>2 hours</b>		
<b>Formal Assessment</b>	<ul style="list-style-type: none"> <li>The assessment will consist of Practical task/s (keyboarding skills, word processing skills, spreadsheet skills, web page design skills) with a weighting of 60% and a Theory test (systems technologies, computational thinking, digital citizenship as well as theory questions regarding word processing, spreadsheets and web page design) with a</li> </ul>	<b>2 hours</b>		

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
	weighting of 40%.			
TOTAL		20 hours		

## Term 4

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
Coding	<ul style="list-style-type: none"> <li>Use a block-based programming language to create shapes and animations</li> <li>Create solutions for simple, basic problems to illustrate spatial orientation/logical sequence through animation and shapes</li> <li>Use events as needed</li> <li>Introduce simple parallelism (e.g. broadcast in Scratch) to create inter-active stories</li> </ul> <p><b>Note:</b></p> <p>(simple, single condition (IF THEN) or basic, single loop (REPEAT (specified number of repetitions) or FOREVER) could be introduced, if required – basic program)</p> <p><b>Note</b></p> <p>Integrate coding with computational thinking concepts, practices and perspectives</p>	4 hours	<p>When people learn to code in a block-based tool, they learn important strategies for solving problems, designing projects and communicating ideas.</p> <p>It also helps learners to learn to think creatively, reason systematically, and work collaboratively — essential skills for life in the 21<sup>st</sup> century</p> <p><b>Example of tasks:</b></p> <ul style="list-style-type: none"> <li>Develop a simple game/e-card for a celebration, e.g. Birthday. (Learner decides on the detail).</li> <li>Create an interactive badge</li> </ul> <p><b>Activity:</b></p> <p>The crane in the port of Lodgedam responds to six different input commands:</p> <div style="display: flex; align-items: center;">   </div> <ol style="list-style-type: none"> <li>Left</li> <li>Right</li> <li>Up</li> <li>Down</li> <li>Grab</li> <li>Release</li> </ol> <p>Crate A is in the left position, crate B is in the position on the right</p> <p>Write a Scratch program to swap the position of the two crates</p>	

<b>Consolidation , Practise</b>	Consolidate content and skills	<b>6 hours</b>	<b>Practical work:</b> <ul style="list-style-type: none"> <li>• Provide problem solving activities where learners need to apply end-user skills and coding skills to complete tasks and solve problems</li> </ul> <b>Theory work:</b> <ul style="list-style-type: none"> <li>• Provide scenarios and case studies with worksheets</li> <li>• Provide computational thinking problems</li> </ul>	
<b>Practical task (Project)</b>	Complete a practical task that includes word processing, spreadsheets and coding.	<b>2 hours</b>		
<b>Formal Assessment</b>	The assessment will consist of Practical task (Project), Speed and accuracy test (keyboarding) with a weighting of 60% and a Theory Examination (systems technologies, computational thinking, digital citizenship as well as theory questions regarding word processing and spreadsheets) with a weighting of 40%.	<b>8 hours</b>		
<b>TOTAL</b>		<b>20 hours</b>		

## Grade 9

### Term 1

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
<b>Keyboarding skills</b>	<p>Touch type with confidence:</p> <ul style="list-style-type: none"> <li>• Number keys (numeric keypad and/or top row numbers) using a typing tutor</li> <li>• Number keys (numeric keypad) using Calculator utility of Windows</li> <li>• 2 – 5 minute speed and accuracy practise</li> </ul>	<b>2 hours</b>	Activities consisting of letter combinations, short words, sentences and numbers ( <b>numeric keypad</b> ) using typing tutor.	
<b>Systems technologies</b>  Software         Cloud computing	<p>Display a knowledge of Systems and Application software:</p> <ul style="list-style-type: none"> <li>• Explain the difference between system software and application software (Windows vs MS Office suite)</li> <li>• definition and function of application software (Microsoft Office Suite, e.g. Word processing, Spreadsheets)</li> <li>• utility software (Anti-virus)</li> </ul>	<b>2 hours</b>	<p>Activity: teacher to create a list of characteristics about system and application software. Learners will attempt to associate each item in the list with the relevant type of software. Further make a list of various software and learners will tabulate them into either system or application software.</p> <p>Teacher to demonstrate how to</p> <ul style="list-style-type: none"> <li>• save/upload/ download/share a file using cloud storage</li> <li>• sharing rights and user permissions</li> </ul> <p>Learners should be able to interpret simple advertisements relating to software</p> <p>Teacher to demonstrate the use of websites that support shopping, banking and education.</p>	

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
ICTs in everyday life	<p>Display a knowledge of cloud computing:</p> <ul style="list-style-type: none"> <li>• Demonstrate the use of Cloud computing, e.g. OneDrive / Dropbox / Google Drive, Google Docs / Google Sheets</li> <li>• Demonstrate an understanding of a Search engine (e.g. Google)</li> </ul> <p>Demonstrate a knowledge of ICTs in everyday life:</p> <ul style="list-style-type: none"> <li>• Use of ICTs in real life (shopping, banking and education)</li> <li>• Explain how their education can be supported by online/computer resources</li> <li>• Explain the features/characteristics of online banking and shopping</li> </ul>			
<b>Digital citizenship</b>	<p>Ethical, social and safety awareness when online</p> <ul style="list-style-type: none"> <li>• Online harassment</li> <li>• Cyber stalking and cyber bullying</li> </ul>	<b>2 hours</b>	<ul style="list-style-type: none"> <li>• Discuss what online harassment, cyber stalking and cyber bullying is, how to prevent it, how to deal with it when it happens. Cyber stalking is the stealthily following of a person, tracking internet chats (3-years imprisonment and/or fine)</li> <li>• Discuss differences and similarities between online identity and offline identity</li> <li>• Discuss online and social media safety measures.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
	<ul style="list-style-type: none"> <li>Online identity</li> <li>Social media safety</li> <li>Awareness of digital footprint</li> <li>Netiquette</li> <li>Ethics online</li> </ul>		<ul style="list-style-type: none"> <li>Discuss the fact that the digital world is permanent. What you write online, sites you visit, any comments or photos you upload are connected to you forever. You have your name and reputation to protect.</li> <li>Discuss good manners and netiquette for the digital world.</li> <li><b>Discuss how to</b> behave and manage oneself ethically when online and when using digital/social media.</li> </ul>	
<b>Word Processing:</b>  WordArt Text boxes Headers & Footers	Insert and manipulate WordArt and text boxes: <ul style="list-style-type: none"> <li>Insert WordArt and text boxes</li> <li>Shape styles and WordArt styles: Shape fill, Shape outline, Text fill, Text outline</li> <li>Apply shape and text effects:</li> </ul> Insert document header and footers: <ul style="list-style-type: none"> <li>basic headers and footers</li> <li>automatic page numbering</li> </ul>	<b>2 hours</b>	Teacher to demonstrate inserting and manipulating WordArt and text boxes. Learners will then be required to engage in practice activities. <b>Activity:</b> Teacher to prepare some text in one lengthy document. [Tip: generate random dummy text for Word by typing the following formula: =rand(1,50), i.e. Random data relating to word processing of 1 paragraph and 50 lines will appear.] Example: Learners can insert a header for page number and footer with their names.	
<b>Spreadsheet</b>	<ul style="list-style-type: none"> <li>Create graphs/charts from given data and choose appropriate graph types from column, line, pie</li> <li>Create and edit graphs using the following</li> </ul>	<b>2 hours</b>	Teacher prepares data and learners create charts from existing data. Learners will be given data and they have to select appropriate graph for analysis. Chart formatting e.g. titles, labels and legend. They could then insert/use all the graph features/formatting to enhance graphs/charts for easy user interpretation.	

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
	<ul style="list-style-type: none"> <li>basic graph elements               <ul style="list-style-type: none"> <li>o chart title</li> <li>o axis titles</li> <li>o data labels</li> <li>o legend</li> </ul> </li> <li>• Troubleshoot basic problems in graphs</li> <li>• Draw basic conclusions by interpreting and analysing graphs</li> </ul> <p>Integrate with computational thinking concepts, practices and perspectives where applicable</p>		<p>Learners are given poorly designed graph to identify and correct the layout and other problems.</p> <p><b>Note:</b></p> <p>Learners should also be able to use graphs from spreadsheet as part of, e.g. a report in the word processor</p>	
<b>Computational Thinking</b>	<p>Revise and consolidate all aspects of computational thinking</p> <p>Focus on decomposition and abstraction:</p> <ul style="list-style-type: none"> <li>• Break down a complex problem or system into smaller, more manageable parts through <b>decomposition</b></li> <li>• Focus on the important information</li> </ul>	<b>2 hours</b>	<p>Encourage learners to always look for simpler or quicker ways to solve a problem or achieve a result.</p> <p>Examples of activities:</p> <p><b><u>Activity 1</u></b></p> <p>8 trains (named A to H) enter the switch X1 from the left on the figure below. Train A needs to go to station A, train B to station B, train C to station C, etc.</p> <p>Each of the switches X1 to X7 are initially set to direct trains to the left. After a train has passed a switch, the switch reverts to the other direction. The Railroad Director needs to ensure that all the trains go to their correct stations.</p>	

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETE D
	<p>only, ignoring irrelevant detail and seeing problems as finite chunks which can be re-used rather than re-built repeatedly through <b>abstraction</b></p> <p>Link Computational Thinking concepts and practices to coding content.</p> <p><b>Note</b></p> <p>Integrate computational thinking concepts, practices and perspectives with other topics such as spreadsheets and coding where applicable</p>		<div data-bbox="1205 252 1550 450"> </div> <p><b>Question:</b></p> <p>What is the correct order for the trains to pass through switch X1?</p> <p><b>AECGBFDH ADCGBFEH AGCDBFEH or ACEDFGHB</b></p> <p><b>Activity 2</b></p> <p>Every Friday, six spies exchange all the information they have gathered during the week. A spy can never be seen with more than one other spy at the same time. So, they have to have several rounds of meetings where they meet up in pairs and share all the information they have at that point.</p> <p>The group of 6 spies needs only three rounds to distribute all their secrets:</p> <p>Before the meetings each spy holds a single piece of information. (spy 1 knows 'a', spy 2 knows 'b', etc.). In the first round spies 1 and 2 meet and exchange information so now both know 'ab'. The diagrams show which spies meet in each round with a line. It also shows which pieces of information they all have. After three rounds all information has been distributed.</p> <div data-bbox="882 1197 1709 1332"> </div> <p><b>Which of the following statements is true?</b></p>	

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETE D
				

<b>Coding</b>	<ul style="list-style-type: none"> <li>• Introduce variables and operators in the block-based programming environment</li> <li>• Use sequence to solve simple numeric/mathematical problems</li> <li>• Complete programs (code completion, e.g. Parsons Puzzles)</li> <li>• Read and explain code</li> <li>• Trace code</li> <li>• Test code</li> <li>• Use problem-solving steps to plan a solution to a simple problem</li> <li>• Use diagrams to represent the problem, e.g. Input-Processing-Output (IPO) table, flow chart</li> <li>• Use events as needed</li> <li>• Use parallelism as needed</li> </ul> <p><b>Note</b></p> <p>Integrate with computational thinking concepts, practices and perspectives</p>	<b>4 hours</b>	<p>When people learn to code using block-based tools, they learn important strategies for solving problems, designing projects and communicating ideas.</p> <p>It also helps learners to learn to think creatively, reason systematically, and work collaboratively — essential skills for life in the 21<sup>st</sup> century</p> <p><b>Example of tasks:</b></p> <ul style="list-style-type: none"> <li>• Create a currency/temperature converter.</li> </ul>
<b>Consolidation and Practise</b>	<ul style="list-style-type: none"> <li>• Consolidate content and skills</li> </ul>	<b>2 hours</b>	
<b>Formal Assessment</b>	<ul style="list-style-type: none"> <li>• The assessment will consist of Practical task/s (keyboarding skills, word processing skills, spreadsheet skills, coding skills) with a weighting of 60% and a Theory test (systems technologies, computational thinking, digital citizenship) as well as theory questions regarding word processing, spreadsheets and coding) with a weighting of 40%.</li> </ul>	<b>2 hours</b>	
<b>TOTAL</b>		<b>20 hours</b>	

## Term 2

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
<b>Keyboarding skills</b>	<ul style="list-style-type: none"> <li>Type revision, remedial and drill activities.</li> <li>Type speed building exercises</li> </ul>	<b>2 hours</b>	<p>Variety of keyboard exercises should be done for remedial, accuracy or speed building purposes</p> <p>Learners could do a typing test online for certification of accuracy and speed.</p> <p><b>Note:</b></p> <p>From Term 2 onwards, the time allocated for keyboarding could be used for other content, e.g. computational thinking and coding, providing that keyboarding skills are practiced on a regular basis, e.g. first 10 minutes of each period.</p>	
<b>Digital citizenship</b>	<p>Understand what copyright and plagiarism is (about software, information, intellectual property), including .</p> <ul style="list-style-type: none"> <li>What copyright is</li> <li>Who it applies to</li> <li>What the Public Domain is</li> <li>How to reference sources</li> </ul>	<b>2 hours</b>	<p><b>Copyright</b> is the law that protects the work of people who create pictures, music, papers, artwork, sound, etc, so that it cannot be used without permission or acknowledgement.</p> <p>The <b>public domain</b> contains pictures, music, papers, artwork, sound, etc. that can be used without permission but must be acknowledged.</p> <p><b>Plagiarism</b> is the practise of using someone else's work and using it as your own, even if it is copyrighted. Plagiarism is a criminal offence and has serious consequences when one is found guilty. Teacher should give examples.</p> <p>Learners should know how to use basic referencing techniques and NOT the word processor referencing tool, e.g.</p> <ul style="list-style-type: none"> <li>For a book: Author, Year published, Title of book,</li> <li>For a website: Topic, Website address, date accessed.)</li> </ul>	



<b>Word Processing:</b>  SmartArt graphics	Insert and manipulate SmartArt graphics: <ul style="list-style-type: none"> <li>• Insert basic SmartArt graphics</li> <li>• SmartArt shapes: insert before/after, change shape, change colour</li> <li>• Insert or edit text in a SmartArt shape</li> <li>• Insert images into a SmartArt shape</li> </ul>	<b>2 hours</b>	Teacher to facilitate an activity where learners practice the requisite inserting, editing and formatting techniques of SmartArt graphics.  <b>Activities:</b> Insert a SmartArt graphic into a document with text to practice using the tools for resizing and arrangement of shapes.
<b>Spreadsheets</b>	<ul style="list-style-type: none"> <li>• Work with sheets <ul style="list-style-type: none"> <li>o Insert</li> <li>o Delete</li> <li>o Rename</li> </ul> </li> <li>• Perform calculations using the following functions: COUNTA, COUNTBLANK, ROUND, COUNTIF</li> <li>• Troubleshoot basic errors in formulae and functions</li> </ul> Integrate with computational thinking concepts and practices where applicable	<b>4 hours</b>	Teacher gives learners a spreadsheet with several sheets and learners should insert, delete and rename the sheets.  Give learners some problems that allow them to use the required formulae and functions on prepared data.  Provide incorrect formulae for learners to troubleshoot.
<b>Computational Thinking</b>	Revise and consolidate all aspects of computational thinking  Devise a strategy to complete a task/solve a problem  Use the following problem-solving steps and techniques to solve a problem: <ol style="list-style-type: none"> <li>1. Write down the main ideas and requirements of the problem.</li> <li>2. Represent the problem by using a diagram, table, flow chart, description or any other method to indicate how you understand the problem.</li> <li>3. Identify the tools/instruments needed to solve the problem</li> <li>4. Plan the detail and sequence the steps.</li> <li>5. Implement the steps to solve the problem.</li> <li>6. Reflect on how well you have solved the problem.</li> </ol>	<b>2 hours</b>	Teacher selects real-life problems and learners should solve various computational thinking problems through devising a strategy, identifying and analysing requirements for a specific problem, e.g. withdraw money from ATM, load airtime onto mobile phone.

<b>Coding</b>	<ul style="list-style-type: none"> <li>• Complete programs by selecting and sequencing instructions (code completion, e.g. Parsons Puzzles)</li> <li>• Read, trace and explain code</li> <li>• Test code</li> <li>• Use problem-solving steps to plan a solution to a simple problem</li> <li>• Use diagrams to represent the problem, e.g. Input-Processing-Output (IPO) table, flow chart</li> <li>• Use sequence and blocks within basic control structures (condition or loop) – to solve simple problems</li> </ul> <p><b>Note</b></p> <p>Integrate with computational thinking concepts. practices and perspectives</p>	<b>4 hours</b>	<p>All content should be done practically and as written activities.</p> <p>Activities should be based on:</p> <ul style="list-style-type: none"> <li>• problem-solving steps</li> <li>• basic, single conditional (IF... THEN...) or (IF... THEN...ELSE...)</li> <li>• basic, single loop</li> <li>• tracing/explaining/testing the code</li> </ul>
<b>Consolidation and Practise</b>	<ul style="list-style-type: none"> <li>• Consolidate content and skills</li> </ul>	<b>2 hours</b>	
<b>Formal assessment</b>	<ul style="list-style-type: none"> <li>• The assessment will consist of Practical task/s (keyboarding skills, word processing skills, spreadsheet skills, coding skills) with a weighting of 60% and a Theory test (systems technologies, computational thinking, digital citizenship as well as theory questions regarding word processing, spreadsheets and coding) with a weighting of 40%.</li> </ul>	<b>2 hours</b>	
<b>TOTAL</b>		<b>20 hours</b>	

### Term 3

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
<b>Keyboarding skills</b>	<ul style="list-style-type: none"> <li>Type revision, remedial and drill exercises.</li> <li>Type speed building exercises.</li> </ul>	<b>2 hours</b>	<p>Variety of keyboard exercises should be done for remedial, accuracy or speed building purposes</p> <p>Learners could do a typing test online for certification of accuracy and speed.</p>	
<b>Digital citizenship</b>	<p>Understand cybercrime and the protection and legal consequences related the:</p> <ul style="list-style-type: none"> <li>Protection from Harassment Act               <ul style="list-style-type: none"> <li>What is the Act about?</li> <li>Examples contained in the Act</li> <li>One legal consequence of not complying</li> </ul> </li> <li>Protection of Personal Information Act (POPIA)               <ul style="list-style-type: none"> <li>What is the Act about?</li> <li>Examples of personal information contained in the Act</li> <li>One legal consequence of not complying</li> </ul> </li> <li>The Act on the regulation of interception of communication and provision of communication-related Information (RICA)               <ul style="list-style-type: none"> <li>What is the Act about?</li> </ul> </li> <li>The Electronic Communications and Transactions Act (Cybercrimes Bill)</li> </ul>	<b>2 hours</b>	<p>Examples: Digital Wellness Programme manual for facilitators, 2014, Telecommunications and postal services</p> <p>Explain Acts in simple terms together with the protection and/or implications ONLY for school learners – NOT for businesses, etc.</p>	

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
	<ul style="list-style-type: none"> <li>o What is the Act about?</li> <li>o Examples contained in the Act</li> <li>o One legal consequence of not complying</li> </ul>			
<b>Word Processing:</b>  Table of Contents  Consolidation	Insert an automatic table of contents using headings created with styles from the style gallery  <b>Consolidation</b> Type document or retrieve pre-typed document and apply basic corrections and changes using editing and formatting features:  <ul style="list-style-type: none"> <li>• text selection</li> <li>• copy, paste, delete</li> <li>• basic find and replace</li> <li>• insert or delete letters, words or paragraphs</li> <li>• use spelling and grammar feature where necessary</li> <li>• insert and/or delete columns and rows in a table</li> <li>• change cell format: alignment, text direction</li> <li>• change borders and shadings</li> <li>• save with a new name (Save As feature)</li> </ul>	<b>2 hours</b>	Learners to apply Styles to a text document in order to generate a TOC.  Teacher to demonstrate the use of cut, copy and paste on text within a document and also on files within and between folders. Learners will then be required to engage in practice activities	

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
<b>Spreadsheets</b>	<ul style="list-style-type: none"> <li>Format and edit by doing the following: <ul style="list-style-type: none"> <li>Set paper size, page margins and page orientation</li> <li>Insert headers and footers</li> <li>Set a print area and print titles (Gridlines, repeat rows/columns)</li> </ul> </li> <li>Consolidate, revise and reinforce content, concepts and spreadsheet skills</li> </ul> <p>Integrate with computational thinking concepts and practices where applicable</p>	<b>2 hours</b>	<p>Use formatting and editing skills on prepared data and work with page sizes, page margins, page orientation, setting a print area and print titles.</p> <p>Learners should complete spreadsheet activities that encourage thinking and decision-making using all acquired spreadsheet knowledge and skills.</p>	
<b>Computational Thinking</b>	<p>Revise and consolidate all aspects of computational thinking</p> <ul style="list-style-type: none"> <li>Complete existing algorithms</li> <li>Develop a step-by-step solution (algorithm) to the problem, or a set of rules to solve the problem</li> <li>Solve basic problems using algorithms</li> <li>Troubleshoot existing algorithms</li> </ul> <p><b>Note</b></p> <p>Integrate computational thinking concepts, practices and perspectives with other topics such as spreadsheets and coding</p>	<b>2 hours</b>	<p>Demonstrate the different outcomes of a flawed algorithm (See Kite problem, <b>Annexure 2</b>).</p> <p>Explain the consequences of lack of detail and sequence and follow-up by correcting the algorithm for the kite problem</p> <p>Learners to write algorithms for tasks e.g. making a sandwich, etc.</p> <p>Learners should use flow charts to create an algorithm to describe to a friend how to get to a specific location.</p>	

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
	where applicable			
<b>Coding</b>	<ul style="list-style-type: none"> <li>Complete programs using basic conditional and/or iteration</li> <li>Read, trace and explain code</li> <li>Test code</li> <li>Use problem-solving steps to plan a solution to a simple problem</li> <li>Use diagrams to represent the problem, e.g. Input-Processing-Output (IPO) table, flow chart</li> <li>Code a simple, basic program using sequence and basic conditional and/or iteration construct</li> </ul> <p><b>Note</b></p> <p>Integrate with computational thinking concepts, practices and perspectives</p>	<b>6 hours</b>	<p>Learners should be able to</p> <ul style="list-style-type: none"> <li>Read, trace and explain code</li> <li>Understand each step of the problem solving process.</li> </ul> <p>Learners should apply problem solving steps and computational thinking processes taught as part of this subject to solve basic problems through coding.</p> <p>Learners should exercise problem solving of basic practical tasks</p>	
<b>Consolidation and Practise</b>	<ul style="list-style-type: none"> <li>Consolidate content and skills</li> </ul>	<b>2 hours</b>		
<b>Formal Assessment</b>	<ul style="list-style-type: none"> <li>The assessment will consist of Practical task/s (keyboarding skills, word processing skills, spreadsheet skills, coding skills) with a weighting of 60% and a</li> </ul>	<b>2 hours</b>		

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
	Theory test (systems technologies, computational thinking, digital citizenship) as well as theory questions regarding word processing, spreadsheets and coding) with a weighting of 40%.			
TOTAL		20 hours		

## Term 4

TOPIC	CONTENT The learner is able to:	Duration	Techniques, activities, resources and process notes	COMPLETED
<b>Consolidation and Practise</b>	Consolidate content and skills	<b>8 hours</b>	<b>Practical work:</b> Provide problem solving activities where learners need to <ul style="list-style-type: none"> <li>• apply end-user skills to complete tasks and solve problems</li> <li>• apply computational thinking and coding skills to complete tasks and solve problems</li> </ul> <b>Theory work:</b> Provide <ul style="list-style-type: none"> <li>• Scenarios and case studies with worksheets</li> <li>• Computational thinking problems</li> </ul>	
<b>Practical task (Project)</b>	Complete a practical task that includes a word processing, spreadsheet, HTML and coding activity.	<b>4 hours</b>		
<b>Formal Assessment</b>	<ul style="list-style-type: none"> <li>• The assessment will consist of Practical task (Project), Speed and accuracy test (keyboarding) with a weighting of 60% and a Theory Examination (systems technologies, computational thinking, digital citizenship as well as theory questions regarding word processing, spreadsheets, web page design and coding) with a weighting of 40%.</li> </ul>	<b>8 hours</b>		
<b>TOTAL</b>		<b>20 hours</b>		

# ASSESSMENT PROGRAM FOR THE YEAR:

## Grade 8 Programme of Assessment

Formal Assessment			
During the year	End of year Assessment		
<b>60%</b>	<b>40%</b> (15%+45%+40%=100% converted to 40%)		
SBA tasks*	<b>Speed and Accuracy test**</b>	<b>End of year tasks</b>	
	<b>15%</b>	<b>45%</b>	<b>40%</b>
<b>5 tests</b> <b>1 June exam</b> <b>(Theory)</b>	Online/offline certification	Practical Assessment Task (PAT)	Theory examination

### \*SBA Formal tasks

Term	Term 1		Term 2		Term 3	
Assessment	<b>Test 1 Theory</b> DATE:	<b>Test 2 Practical</b> DATE:	<b>Test 3 Practical</b> DATE:	<b>Theory Exam</b> DATE:	<b>Test 4 Theory</b> DATE:	<b>Test 5 Practical</b> DATE:
<b>Minimum Marks</b>	20 - 30	25	25	60	30	25
<b>Minimum Minutes</b>	30 - 40	30	30	90	40	30
<b>Term Weighting</b>	40%	60%	60%	40%	40%	60%
<b>SBA Weighting</b>	10%	15%	15%	30%	15%	15%

### \*\*Speed and Accuracy test

- Online/offline certification completed during teaching time (Refer to **Annexure 1**).

Component	Mark
Speed	10
Accuracy	10
Total	20
Converted to 15%	

### Theory examinations – Written examination

Topics	June exam		November exam	
	Marks	Weighting	Marks	Weighting

<b>Systems Technologies</b>	±15	± 25%	-	-
<b>Word Processing</b>	±12	± 20%	±10	± 12.5%
<b>Spreadsheets</b>	±6	± 10%	±20	± 25%
<b>Digital Citizenship</b>	±15	± 25%	±10	± 12.5%
<b>Computational Thinking Skills</b>	±12	± 20%	±20	± 25%
<b>Coding</b>	-	-	±20	± 25%
<b>TOTAL</b>	<b>60</b>	<b>100%</b>	<b>80</b>	<b>100%</b>

**Practical Assessment Task (PAT) – completed as an activity**

- Use the **2 hours** class time allocated in **Term 4** to complete the activity.
- Skills assessed must include content covered throughout the year.

<b>Topics</b>	<b>Marks</b>	<b>Weighting</b>
<b>Word Processing</b>	±45	±45%
<b>Spreadsheets</b>	±35	±35%
<b>Coding</b>	±20	±20%
<b>TOTAL</b>	<b>100</b>	<b>100%</b>

- The weighting should be applied if a different total is used.

## Grade 9 Programme of Assessment

Formal Assessment			
During the year	End of year Assessment		
60%	<b>40%</b> (15%+45%+40%=100% converted to 40%)		
SBA tasks*	Speed and Accuracy test**	End of year tasks	
	15%	45%	40%
<b>5 tests</b> <b>1 theory June exam</b>	Online/offline certification	Practical Assessment Task (PAT)	Theory examination

### \*SBA Formal tasks

Term	Term 1		Term 2		Term 3	
Assessment	Test 1 Theory DATE:	Test 2 Practical DATE:	Test 3 Practical DATE:	Theory Exam DATE:	Test 4 Theory DATE:	Test 5 Practical DATE:
<b>Minimum Marks</b>	30 – 40	30 – 40	30 – 40	80	30 – 40	30 – 40
<b>Minimum Minutes</b>	40 - 50	45 – 60	45 – 60	120	40 - 50	45 – 60
<b>Term Weighting</b>	40%	60%	60%	40%	40%	60%
<b>SBA Weighting</b>	10%	15%	15%	30%	15%	15%

### \*\*Speed and Accuracy

- Online/offline certification completed during teaching time (Refer to **Annexure 1**).

Component	Mark
Speed	10
Accuracy	10
Total	20
<b>Converted to 15%</b>	

### Theory examinations – written examination

Topics	June exam		November exam	
	Marks	Weighting	Marks	Weighting
<b>Systems Technologies</b>	±16	± 20%	-	-
<b>Word Processing</b>	±8	± 10%	±15	± 15%
<b>Spreadsheets</b>	±8	± 10%	±15	± 15%
<b>Digital Citizenship</b>	±16	± 20%	±25	± 25%
<b>Computational Thinking Skills</b>	±16	± 20%	±20	± 20%
<b>Coding</b>	±16	± 20%	±25	± 25%
<b>TOTAL</b>	<b>80</b>	<b>100%</b>	<b>100</b>	<b>100%</b>

### Practical Assessment Task (PAT)– completed as an activity

- Use the **4 hours** allocated in **Term 4** to complete the practical activity.
- Skills assessed must include content covered throughout the year.

Topics	Marks	Weighting
Word Processing	±25	±20%
Spreadsheets	±35	±30%
Coding	±60	±50%
<b>TOTAL</b>	<b>120</b>	<b>100%</b>