# **Grade 8** Content (Grade 8 / Term 1) **NOTES** Systems Technologies: Introduction to Computers and Information processing cycle (Theory) ( $\pm \frac{1}{2}$ week / 1 hour) Basic components of a computer system Display a knowledge of the devices required: Input devices Output devices Identify storage devices and capacities (hard drive, flash drive, optical drive/disc, memory cards) Digital communication devices Display a knowledge of the Information Processing Cycle: Input, output, processing, storage and communication Expand concept of processing (CPU and RAM) Systems Technologies: File management (Theory and practical) ( $\pm \frac{1}{2}$ week / 1 hour) Demonstrate basic file management tasks: Create a new file/folder Copy, cut and paste a document to a new location Open, save and close features of files, e.g.; 'open with', 'save to', 'close all' View and sort files/folder, e.g. by name, by date, by type (file extension), by size **Keyboarding: Introduction to Keyboarding** (Practical) (±1 week / 2 hours) Demonstrate the correct typing posture:

#### Word Processing: Formatting and Editing

### (Practical) (± 2 weeks / 4 hours)

Positioning of fingersPositioning of wrists

Understand the purpose of using a word processor, such as Microsoft Word

Positioning of fore-arms and back to facilitate touch typing

- Become familiar with the Word processing environment
- Basic use of the word processor:
  - Open a new blank <Ctrl N>)/exiting document
  - Type words, sentences and paragraphs
  - Understand and apply:
    - o Word wrapping
    - o The use of the hard return <Enter>
    - o The use of the soft return <Shift Enter>
  - Save documents <Ctrl S>
  - Print documents <Ctrl P> (printing options: select printer, print all pages, print selection, print current page, custom print)
- Apply basic formatting techniques to words/text/paragraphs using the following:
  - Use the Font group on the Home tab (of MS Word)
  - Apply bold <Ctrl B>, italics <Ctrl I> and underline <Ctrl U> features
  - Change the font type and size
  - Highlight text, change font colour, text effects
  - Select words, text and paragraphs using mouse or alternative methods
  - Edit word/text/paragraphs using cut (delete) < Ctrl X>, copy < Ctrl C>, paste (insert) < Ctrl V>
  - Different methods of deleting
  - Apply build-in Styles to format text

# Keyboarding: Mastering the keyboard - alphabetical keys (Practical) (±1 week / 2 hours) Able to identify different sections on keyboard (alphabetical, numerical, functions keys) Able to type home row (asdfghjkl;) Able to type top row (qwertyiop) and home row Able to type bottom row (zxcvbnm,./) and home row Able to type a combination of short words Word Processing: Spelling and Grammar checking and Basic illustrations (Practical) (± 2 weeks / 4 hours) Type a variety of paragraphs: Without/ with headings Use word processing features to proofread and correct work, i.e. use spell check Find synonyms for word using Thesaurus Basic use of the Find and Replace feature (search for text and replace if with something else) Insert and manipulate illustrations: Insert and resize shapes (including move, crop, cut (delete), copy and paste, recolour Insert and resize pictures (including move, crop, cut (delete), copy and paste, recolour Apply wrapping and grouping options to shapes and pictures **Computational Thinking** (Theory) (±1 week / 2 hours) Overview of Computational Thinking: Pattern recognition Decomposition Abstraction Algorithms Focus on Detail and Sequence (basic algorithmic thinking using daily examples) Use detail and sequence to follow certain steps to complete a task or solve a problem Place objects/statements/words in a correct order Consolidation and Practise – All Topics (Practical and theory) (±1 week / 2 hours) Consolidate content and skills Assessment (PoA) (±1 week / 2 hours): 1 Practical task (keyboarding skills, word processing skills) – weighting of 60% 1 Theory test (systems technologies, computational thinking as well as theory question regarding word processing) –

**NOTES** 

Content (Grade 8 / Term 1)

weighting of 40%

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	Content (Grade 8 / Term 2)	NC	)TES
	Keyboarding: Mastering the keyboard – other keys		
•	Practical) (±1 week / 2 hours)	_	5
•	Type with other keys on the keyboard such as Shift, Caps Lock, Insert, Delete, Backspa	ice, Pa	age up, Page down, Home, End,
_	Tab, undo <ctrl z="">, redo <ctrl y="">, Print screen;</ctrl></ctrl>		
•	Revise alphabetical keys		
_	Nigital aitimanahin	1	
	Digital citizenship	•	
•	Theory) (±1 week / 2 hours) Introduce concepts of the WWW and URL		
•	Introduce the concept of the internet		
	Connecting to the internet		
•	Explain what the purpose of a browser is		
•	Identify two web browsers		
•	Explain how to work with a web browser:		
	Buttons		
	Address bar		
	Search bar		
	Tabs and tabbed browsing		
	Downloads		
	History		
•	Explain website, web page and huperlink		
•	Explain two search engines		
•	Safe internet and device usage:		
_	Passwords		
	Two-factor authentication		
	- Captcha		
	·		
k	Keyboarding: Mastering the keyboard – numeric keys		
(	Practical) (±1 week / 2 hours)		
•	Type 2 to 5 minutes speed and accuracy tests		
•	Introduce number keys on the top row: 1234567890		
۷	Vord Processing: Layout and Formatting	•	Numbered lists: preference to
(	Practical) (± 2 weeks / 4 hours)		numbers but exposure to
•	Apply and customise margin sizes		Roman numerals (i, ii, iii) as
•	Change page orientation (Portrait and landscape)		well as Alphabetical (a, b, c)
•	Two pages using forces/manual page breaks		numbering
•	Select a pager size		
•	Page borders (basic):		
	• Settings		
	• Style		
	- Colour		
	- Width		
	Art borders		
•	Change the line spacing (single, 1.5 and double)		
•	Change paragraph spacing (before and after)		
•	, ipp.) paragraph ango (io., ooog, jao)		
•	Increase and decrease indent feature on the Home tab in the Paragraph group		
•	Inserting symbols (basic: caret (ê), acute (é), diareses (ë), plus-minus (±), etc.		
•	Bulleted lists (basic)		
L	Numbered lists (1 level only)		

	(Grade 8 / Term 2)	NOTES
Computa	ational Thinking	Integrate computational thinking
Theory)	(±1 week / 2 hours)	concepts and practices with othe
Focus	s on pattern recognition:	topics where applicable such as
- Ide	entify what a pattern is	spreadsheets
<ul><li>Int</li></ul>	terpret a given set of raw data then recognise the pattern	
	ook for similarities among and within problems	
• Ma	ake predictions based on patters	
<ul><li>Cons</li></ul>	solidate Computational Thinking concepts and practices	
Spreads	heets:	
(Practica	al) (± 2 weeks / 4 hours)	
Explai	in the purpose of a spreadsheet and the concepts of a cell, row, column and a	
sheet		
Under	rstand the use of cell references	
Demo	onstrate the resizing of rows and columns	
Trans	fer common features from word processing skills (e.g. copy, paste, save) to	
spread	dsheets (and vice versa)	
Use b	asic formatting and editing to format cells:	
-	Wrap	
-	Merge and unmerge	
-	Alignment	
•	Borders	
•	Shading	
•	Text direction	
Use th	he autofill feature	
Decid	e on common data types such as:	
•	General	
•	Number, including number of decimal places	
•	Currency, including number of decimal places	
•	Text	
<ul><li>Use</li></ul>	formula (calculations) with basic operators including brackets:	
•	Addition (+)	
•	Subtraction (-)	
•	Multiplication (*)	
•	Division (/)	
اممالـ	erstand the order of precedence	

## Assessment (PoA) (±1 week / 2 hours):

- 1 Practical task (keyboarding skills, word processing skills, spreadsheet skills) weighting of 60%
- 1 Theory test (systems technologies, computational thinking, digital citizenship as well as theory question regarding word processing and spreadsheets) – weighting of 40%

Content (Grade 8 / Term 3)	NOTES	
Content (Grade 8 / Term 3)  Keyboarding: Introduction to Keyboarding	NOTES	
Keyboarding: Introduction to Keyboarding		
<ul><li>(Practical) (±1 week / 2 hours)</li><li>■ Revise alphabetical and number keys</li></ul>		
<ul> <li>Type 2 to 5 minutes speed and accuracy tests</li> <li>Type special characters, symbols and punctuation marks available on the keyboard (! @)</li> </ul>	# ¢ % ^ & * 2 < >\	
<ul> <li>Revise common shortcuts for Editing text e.g. Ctrl B (bold), Ctlr I (italic), Ctrl U (underline)</li> </ul>	•	
return/page break), Ctrl C (copy), Ctrl X (cut), Ctrl V (paste)	s), our 2 (undo) and our + Enter (naid	
Teturn/page break), our o (copy), our x (cut), our v (paste)		
Digital Citizenship	•	
(Theory) (±1 week / 2 hour)		
Understand the privacy of information and information piracy		
Understand cybercrime threats, issues and remedies:		
Identity theft		
Hacking		
• phising		
priionig		
Word Processing: Tab setting and Tables	•	
(Practical) (± 1 week / 2 hours)		
Use tab setting in the word processor by applying:		
Tabs setting (left, centre, right)		
<ul> <li>Produce tables using the table feature in the word processor and manipulate by:</li> </ul>		
Changing borders and shading		
Merging of cells		
Inserting or deleting rows/columns		
Changing cell alignment		
Change text direction in a cell/column/row		
Apply table styles		
Spreadsheets: Basic functions, sorting, error indicators and troubleshooting		
(Practical) (± 2 weeks / 4 hours)		
Cell ranges		
Use basic functions:		
• Min		
■ Max		
• Sum		
<ul> <li>Count</li> </ul>		
<ul> <li>Average to solve problems</li> </ul>		
<ul> <li>Sort data – up to two tables</li> </ul>		
<ul> <li>Identify problems based on the following error indicators:</li> </ul>		
<ul><li>#Value</li></ul>		
<ul><li>#Name</li></ul>		
<ul><li>#Num</li></ul>		
<ul><li>#REF</li></ul>		
- #DIV/0		
<ul> <li>#N/A</li> </ul>		
• #####		
<ul> <li>Troubleshoot basic errors in formulae and functions</li> </ul>		

Content (Grade 8 / Term 3)	NOTES
Computational Thinking (Theory) (±1 week / 2 hours)  Revise sequence and detail as well as pattern recognition concepts  Focus on algorithms:  Understand what an algorithm is using simple real-life scenarios  Read, understand and explain an existing algorithm  Test steps in an algorithm  Consolidate computational thinking concepts and practices	Integrate computational thinking concepts and practices with other topics where applicable such as spreadsheets and coding
Coding (Practical) (± 2 weeks / 4 hours)  Identify and interact with block-based programming environment, components and understand their roles/features  Create shapes/animations using a block-based programming language, e.g. Scratch, Micro Bit or similar (e.g. use pent/turtle)  Create solutions for simple, basic problems to illustrate spatial orientation/logical sequence through animation and shapes  Introduce Events as needed	Include basic, single condition (IF THEN) or simple, single loop (REPEAT (specified number of repeats) or FOREVER) required, e.g.  • when sprite needs to turn when touching edge, a simple, single condition could be introduced.  • when learners identify patterns in drawing (such as when drawing a square) they could use basic, single loop to 'shorten' the code.  Note  Integrate coding with computational thinking concepts, practices and perspectives
Consolidation and Practise – All Topics (Practical and theory) (±1 week / 2 hours)  Consolidate content and skills	
Assessment (PoA) (±1 week / 2 hours):	

- 1 Practical task/s (keyboarding skills, word processing skills, spreadsheet skills and coding skills) weighting of 60%
- 1 Theory test (systems technologies, computational thinking, digital citizenship as well as theory question regarding word processing, spreadsheets and coding skills) – weighting of 40%

Content (Grade 8 / Term 4)	NOTES
Coding (Practical) (± 2 weeks / 4 hours)  Use a block-based programming language to create shapes and animations  Create solutions for simple, basic problems to illustrate spatial orientation/logical sequence through animation and shapes  Use events as needed  Introduce simple parallelism (e.g. broadcast in Scratch) to create inter-active stories.	Include simple, single condition (IF THEN) or basic, single loop (REPEAT (specified number of repetitions) or FOREVER) could be introduced, if required – basic program)  Note  Integrate coding with computational thinking concepts, practices and perspectives
Consolidation and Practise – All Topics (Practical and theory) (±3 weeks / 6 hours)  Consolidate content and skills	

### Practical task (Project)

(Practical) (±1 week / 2 hours)

Complete a practical task that includes word processing, spreadsheets and coding

## Assessment (PoA) (±4 weeks / 8 hours):

- Practical task (Project), Speed and accuracy test (keyboarding) weighting of 60%
- Theory examination (systems technologies, computational thinking, digital citizenship as well as theory question regarding word processing and spreadsheets) – weighting of 40%

## Grade 9

Content (Grade 9 / Term 1)	NOTES
Keyboarding: Touch type with confidence	
(Practical) (±1 week / 2 hours)	
<ul> <li>Number keys (numeric keypad and/or top row numbers) using a typir</li> </ul>	a tutor
Number keys (numeric keypad) using Calculator utility of Windows	
2 – 5 minute speed and accuracy practise	
, , , , , , , , , , , , , , , , , , , ,	
Systems Technologies:	•
(Theory and practical) (±1 week / 2 hours)	
Display a knowledge of Systems and Application software:	
<ul> <li>Explain the difference between system software and applicat</li> </ul>	ion software
(Windows vs MS Office suite)	
<ul> <li>Definition and function of application software (Microsoft Office)</li> </ul>	ce Suite, e.g.
Word processing, Spreadsheets)	
<ul> <li>Utility software (Anti-virus)</li> </ul>	
Display a knowledge of cloud computing:	
<ul> <li>Demonstrate the use of cloud computing, e.g. OneDrive/ Dro</li> </ul>	pbox / Google
Drive, Google Docs / Google Sheets	
<ul> <li>Demonstrate an understanding of Search engine (e.g. Google</li> </ul>	e)
Demonstrate a knowledge of ICTs in everyday life:	
Use of ICTs in real-life (shopping, banking and education)	
Explain how their education can be supported by online/computer	
<ul> <li>Explain the features/ characteristics of online banking and shoppi</li> </ul>	ng
Divited siting as him. Ethical as sigl and as fate account on the small of	
Digital citizenship: Ethical, social and safety awareness when onlin (Theory) (±1 week / 2 hours)	e
Online harassment	
Cyber stalking and cyber bullying	
Online identity	
Social media safety	
Awareness of digital footprint	
Netiquette	
Ethics online	
Word Processing: WordArt, Textboxes, Headers and Footers	
(Practical) (± 1 week / 2 hours)	
Insert and manipulate WordArt and text boxes:	
<ul> <li>Insert WordArt and text boxes</li> </ul>	
<ul> <li>Shape styles and WordArt styles:</li> </ul>	
o Shape fill	
o Shape outline	
o Text fill	
o Text outline	
Apply shape and text effects	
Insert document header and footers:  Pagin handers and footers:	
Basic headers and footers  Automotion and appropriate and	
Automatic page numbering	

## Content (Grade 9 / Term 1) **NOTES Spreadsheet** (Practical) (±1 week / 2 hours) Create graphs/charts from given data and choose appropriate graph types from column, line, pie Create and edit graphs using the following basic graph elements: Chart title Axis titles Data labels Legend Troubleshoot basic problems in graphs Draw basic conclusions by interpreting and analysing graphs. **Computational Thinking** Integrate computational thinking concepts, practices and (Theory) (±1 week / 2 hours) perspectives with other topics Revise and consolidate all aspects of computational thinking such as spreadsheets and Focus on decomposition and abstraction: coding where applicable Break down a complex problem or system into smaller, more manageable parts through decomposition Focus on the important information only, ignoring irrelevant detail and seeing problems as finite chunks which can be re-used rather than re-built repeatedly through abstraction Link Computational Thinking concepts and practices to coding content Coding Integrate with computational thinking concepts. practices and (Practical) (±2 weeks / 4 hours) perspectives Introduce variables and operators in the block-based programming environment Use sequence to solve simple numeric/mathematical problems Complete programs (code completion, e.g. Parsons Puzzles) Read and explain code Trace code Test code Use problem-solving steps to plan a solution to a simple problem Use diagrams to present the problem, e.g. input-processing-output (IPO) table, flow chart Use events as needed Use parallelism as needed **Consolidation and Practise – All Topics** (Practical and theory) (±1 week / 2 hours) Consolidate content and skills

### Assessment (PoA) (±1 week / 2 hours):

- 1 Practical task (keyboarding skills, word processing skills, spreadsheet skill, coding skills) weighting of 60%
- 1 Theory test (systems technologies, computational thinking, digital citizenship as well as theory question regarding word processing, spreadsheets and coding) – weighting of 40%

Content (Grade 9 / Term 2)	NOTES
Keyboarding:	
(Practical) (±1 week / 2 hours)	
Type revision, remedial and drill activities	
Type speed building exercises	
Divided attacked	
Digital citizenship (Theory) (±1 week / 2 hours)	•
<ul> <li>Understand what copyright and plagiarism is (about software, information, intellectural)</li> </ul>	
property), including:	
What copyright is	
Who it applies to	
What the Public Domain is	
How to reference sources	
Tion to foldional address	
Word Processing: SmartArt graphics	
(Practical) (± 1 week / 2 hours)	
Insert basic SmartArt graphics	
SmartArt shapes:	
Insert before/after	
Change shape	
Change colour	
Insert or edit text in a SmartArt shape	
Insert images into a SmartArt shape	
Councideheete	late and a computational thinking
Spreadsheets:	Integrate computational thinking concepts and practices with other
(Practical) (± 2 weeks / 4 hours)  Work with sheets:	topics where applicable such as
Insert	spreadsheets
Delete	Spreadsneets
Rename	
Perform calculations using the following functions:	
COUNTA	
COUNTBLANK	
■ ROUND	
<ul> <li>COUNTIF</li> </ul>	
Troubleshoot basic errors in formulae and functions	
Computational Thinking	
(Theory) (±1 week / 2 hours)	
Revise and consolidate all aspects of computational thinking	
Devise a strategy to complete a task/solve a problem	
Use the following problems-solving steps and techniques to solve a problem:	
Write down the main ideas and requirements of the problem	
<ul> <li>Present the problem by suing a diagram, table, flow chart, description or any</li> </ul>	
other method to indicate how you understand the problem	
<ul> <li>Identify the tools/instruments needed to solve the problem</li> </ul>	
Plan the detail and sequence the steps	
Implement the steps to solve the problem	
<ul> <li>Reflect on how well you have solved the problem</li> </ul>	

Content (Grade 9 / Term 2)	NOTES
Coding	Integrate with computational
(Practical) (±2 weeks / 4 hours)	thinking concepts practices and
<ul> <li>Complete programs by selecting and sequencing instructions (code completion, e.g. Parsons Puzzles)</li> </ul>	perspectives
Read, trace and explain code	
Test code	
Use problem solving steps to plan a solution to a simple problem	
Use diagrams to present the problem, e.g. Input-Processing-Output (IPO) table, flow chart	
Use sequence and blocks within basic control structures (condition or loop) – to solve simple problems	
Consolidation and Practise – All Topics	
(Practical and theory) (±1 week / 2 hours)	
Consolidate content and skills	

## Assessment (PoA) (±1 week / 2 hours):

- 1 Practical task (keyboarding skills, word processing skills, spreadsheet skills, coding skills) weighting of 60%
- 1 Theory test (systems technologies, computational thinking, digital citizenship as well as theory question regarding word processing, spreadsheets and coding) weighting of 40%

Content (Grade 9 / Term 3)	NOTES
Keyboarding:	
(Practical) (±1 week / 2 hours)	
Type revision, remedial and drill activities	
Type speed building exercises	
Digital Citizenship	•
(Theory) (±1 week / 2 hours)	
Understand cybercrime and the protection and legal consequences related to:	
<ul> <li>Protection from Harassment Act</li> </ul>	
o What is the Act about?	
o Examples contained in the Act	
o One legal consequence of not complying	
<ul> <li>Protection of Personal Information Act (POPIA)</li> </ul>	
o What is the Act about?	
o Examples of personal information contained in the Act	
o One legal consequence of not complying	
<ul> <li>The Act on the regulation of interception of communication and provision of</li> </ul>	
communication-related information (RICA)	
o What is the Act about?	
<ul> <li>The Electronic Communications and Transactions Act (Cybercrimes Bill):</li> </ul>	
o What is the Act about?	
o Examples contained in the Act	
o One legal consequence of not complying	
Word Processing: Table of Contents	•
(Practical) (± 1 week / 2 hours)	
Insert an automatic table of contents using headings created with styles from the style	
gallery	
Type document or retrieve pre-typed document and apply basic corrections and	
changes using editing and formatting features:	
Text selection	
Copy, paste, delete	
Basic find and replace	
Insert or delete letters, words or paragraphs	
Use spelling and grammar feature where necessary	
Insert and/or delete columns and rows in a table	
Change cell format: alignment, text direction	
Change borders and shadings	
Save with a new name (Save As feature)	
Spreadsheets: Basic functions, sorting, error indicators and troubleshooting	
(Practical) (± 2 weeks / 4 hours)	
Format and edit by doing the following:	
Set paper size, page margins and page orientation	
Insert headers and footers	
Set a print area and print titles (Gridlines, repeat rows/columns)	
Consolidate, revise and reinforce content, concepts and spreadsheet skills	

Content (Grade 9 / Term 3)	NOTES
Computational Thinking (Theory) (±1 week / 2 hours)  Revise and consolidate all aspects of computational thinking Complete existing algorithms Develop a step-by-step solution (algorithm) to the problem, or a set of rules to solve the problem Solve basic problems using algorithms Troubleshoot existing algorithms	Integrate computational thinking concepts, practices and perspectives with other topics such as spreadsheets and coding where applicable
Coding (Practical) (± 3 weeks / 6 hours)  Complete programs using basic conditional and/or iteration Read, trace and explain code Test code Use problem-solving steps to plan a solution to a simple problem Use diagrams to represent the problem, e.g. Input-Processing-Output (IPO) table, flow chart Code a simple, basic program using sequence and basic conditional and/or iteration construct	Integrate coding with computational thinking concepts, practices and perspectives
Consolidation and Practise – All Topics (Practical and theory) (±1 week / 2 hours)  Consolidate content and skills  Assessment (PoA) (±1 week / 2 hours):	

### Assessment (PoA) (±1 week / 2 hours):

- 1 Practical task/s (keyboarding skills, word processing skills, spreadsheet skills and coding skills) weighting of 60%
- 1 Theory test (systems technologies, computational thinking, digital citizenship as well as theory question regarding word processing, spreadsheets and coding skills) – weighting of 40%

Content (Grade 9 / Term 4)	NOTES
Consolidation and Practise – All Topics	
(Practical and theory) (±4 weeks / 8 hours)	
Consolidate content and skills	

### Practical task (Project)

(Practical) (±1 week / 2 hours)

• Complete a practical task that includes word processing, spreadsheets and coding

### Assessment (PoA) (±4 weeks / 8 hours):

- Practical task (Project), Speed and accuracy test (keyboarding) weighting of 60%
- Theory examination (systems technologies, computational thinking, digital citizenship as well as theory question regarding word processing, spreadsheets and coding) weighting of 40%