

GRADE 9 DIGITAL TECHNOLOGY CONTENTS (SASOR SA School of Robotics)

Chapter	Unit	Topic	Page numbers	Term
1	1.	Keyboard Skills	1..11	
	1.1	General benefits of touch typing	1	1
		Keyboard techniques	2	1
		Examples of typing tutors	2	1
	1.2	Numeric keypad	3..6	1
	1.3	Drill and Practice	7	1
	1.4	Speed, Accuracy, Remedial and Drill Activities	8..10	1
	1.5	Certification	11	
2	2.	System Technologies	12...45	
	2.1	Introduction to software	12..24	1
	2.2	Cloud computing	25..32	1
	2.3	Search engines	33..37	2
	2.4	Information and Communications Technology (ICT)	38..45	2
3	3.	Word Processing	46..77	
	3.1	Design and formatting		1
		3.1.1 Text boxes	46..52	1
		3.1.2 WordArt	53..55	1
		3.1.3 Headers and Footers	56..57	1
	3.2	SmartArt graphics	58..67	1
	3.3	Table of Contents	68..70	2
	3.4	Consolidation	71..77	4
4	4.	Spreadsheets	78..106	
	4.1	Graphs/Charts	78..88	1
	4.2	Excel worksheets/ Built in Functions	89..96	2
		Insert/Delete/Rename worksheets	89-90	2
		Count, CountA, CountBlank, CountIf functions	91-96	2
	4.3	Page Set-up options	97..101	3
	4.4	Consolidation	102..106	4
5	5.	Digital Citizenship	107..136	
	5.1	Digital Rights, Responsibilities, and the Law	108..117	2
	5.2	Copyright, Plagiarism and the Public domain	118..125	2
	5.3	Cybercrime and the law	126..136	2
6	6.	Computational Thinking	137..160	
	6.1	Decomposition, Pattern recognition, Abstraction and Algorithms	137..143	2
	6.2	Complex Decomposition, Pattern recognition, Abstraction and Algorithms	144..148	2
	6.3	Flowchart Algorithms used in the computational thinking process	149..160	2
7	7.	Coding	161..225	
	7.1	Introduction to variables	161..168	3
	7.2	Mathematical operators	169..180	3
	7.3	Interactive (Keyboard input)	181..185	3
	7.4	Math functions	186..193	4
	7.5	Stages of solving a problem	194..196	4
	7.6	Decision/Selection structures	197..206	4
	7.7	Iteration and looping	207..211	4
	7.8	Conditional looping	212..215	4
	7.9	Consolidation	216..218	4
	7.10	Integration of computational thinking in coding	219..221	4
	7.11	Tracing through programs	222..224	4
	7.12	Trouble shooting	225	4

TABLE OF CONTENTS

Chapter 1	Keyboard skills	
Unit 1.1	Benefits of touch-typing	1
	Effective Keyboard techniques	2
	Typing tutor examples	2
Unit 1.2	Numeric keypad	
	Num lock	3
	Caps lock	3
	Scroll lock	3
	Practice using the numeric keypad	4
	Activity 1.2.1 - Numeric keypad	5
	Activity 1.2.2 - Top row and numeric keypad	6
Unit 1.3	Drill and Practice All keys	
	Activity 1.3 Alphabetical keys + Special keys	7
Unit 1.4	Speed and Accuracy	
	Activity 1.4.1 Testing speed and accuracy	8
	Formula for calculating speed	9
	Words per minute table	10
	Examples of certification	11
Chapter 2: System Technologies		
Unit 2.1	Introduction to software	12
	Systems software	13
	Operating systems	
	Functions	13
	Examples	14
	Standalone, Network, Mobile	15
	Utility software	
	Examples	17
	Virus/ Antivirus software	17
	BackUp software	18
	Disk Defragmentation software	18
	File compression software	19
	Scandisk	19
	Anti-spam/ Anti-adware	20
	Activity 2.1.1	21
	Applications software	
	Examples	22
	Differences between Systems and Applications software	23
	Activity 2.1.2.1	23
	Activity 2.1.2.2	24
Unit 2.2	Cloud Computing	
	What is Cloud computing	25
	Cloud computing services (IaaS/PaaS/SaaS)	25
	Advantages and disadvantages of cloud computing	27
	Uploading to the cloud	27
	Downloading from the cloud	29
	Sharing rights and permissions	29
	Activity 2.2.1	31
	Activity 2.2.2	32

Unit 2.3	Search Engines	
	What is a search engine	33
	Benefits and Limitations of using search engines	33
	Techniques used to search	34
	Different search techniques	37
	Activity 2.3	37
Unit 2.4	Information and Communications Technology (ICT)	
	What is ICT and functions of ICT	38
	Advantages and disadvantages of ICT	38
	Practical uses of ICT in our everyday lives	38
	Online Education	39
	Online Banking	41
	Online Shopping	42
	Activity 2.4.1	44
	Activity 2.4.2	44
	Activity 2.4.3	45
Chapter 3	Word-processing	
Unit 3.1	Design and formatting	46
	Text boxes	46
	Activity 3.1.1(a)	52
	Activity 3.1.1(b)	52
	WordArt	53
	Activity 3.1.2	54
	Headers and Footers	55
	Activity 3.1.3(a)	56
	Page numbering	57
	Activity 3.1.1(b)(c)(d)	57
Unit 3.2	SmartArt Graphics	
	How to insert SmartArt graphics	59
	Design a SmartArt graphic	60
	Format Tab	64
	Insert images	64
	Activity 3.2	65
Unit 3.3	Table of Contents	
	Headings and Sub-headings	68
	Insert a table of contents	69
	Activity 3.3.1	70
	Activity 3.3.2	70
Unit 3.4	Consolidation	
	Activity 3.4.1	71
	Activity 3.4.2	73
	Activity 3.4.3	75
	Activity 3.4.4	76
	Activity 3.4.5	77

Chapter 4 Spreadsheets

Unit 4.1	Graphs and Charts	78
	Column/Pie/Line Charts	79
	Activity 4.1.1	81
	Chart elements and chart styles	83
	Activity 4.1.2	84
	Interpretation of graphs	86
	Activity 4.1.3	87
	Troubleshooting errors in graphs/charts	88
 Unit 4.2	 Excel worksheets and Built in functions	
	Insert/Delete/Rename worksheets	89
	COUNT, COUNTA, COUNTBLANK, COUNTIF functions	91
	Activity 4.2.1 (a)	91
	Activity 4.2.1 (b)	92
	Activity 4.2.1 (c)	93
	Activity 4.2.1 (d)	93
	Activity 4.2.1 (e)	94
	Troubleshooting errors in functions	95
	Activity 4.2.2)	95
 Unit 4.3	 Page Setup options	
	Purpose and need for page setup options	97
	Paper size	97
	Paper margins	98
	Headers and footers	99
	Print area/ titles/ gridlines	100
	Activity 4.3.1	101
 Unit 4.4	 Consolidation	
	Activity 4.4.a	102
	Activity 4.4.b	104
	Activity 4.4.c	105

Chapter 5 Digital Citizenship 107

Unit 5.1	Digital Rights/ Digital Responsibilities and the Law	108
	Online harassment/ Cyber bullying/ Cyber stalking	108
	Methods to prevent online harassment/ bullying/ stalking	109
	Online and Offline Identity	110
	Social media safety	111
	Digital footprint	111
	Activity 5.1.1	113
	Digital Etiquette	113
	Online Ethics	115
	Activity 5.1.2	115
	Activity 5.1.3	116
	Activity 5.1.4	117
 Unit 5.2	 Copyright and the law	118
	Plagiarism	119
	Public domain	120
	Creative Commons and Fair Use	120
	Activity 5.2.1	121
	Activity 5.2.2	122
	Activity 5.2.3	123
	Referencing	124
	Activity 5.2.4	125

Unit 5.3	Cybercrime and the Law for school leavers	126
	Protection of Harassment Act (POHA)	126
	Protection of Personal Information Act (POPIA)	129
	Regulation of Interception of Communications and Provision of Communication Related Information Act (RICA)	131
	Electronic Communications and Transactions Act (ECT)	133
	Activity 5.3.6	136

Chapter 6 Computational Thinking

Unit 6.1	Decomposition and Abstraction (Basic)	138
	IPO tables	138
	Activity 6.1.1	140
	Variables and pseudocode algorithms	141
	Activity 6.1.2	143
Unit 6.2	Decomposition, Abstraction and Patterns (Complex)	
	Strategies for solving complex algorithms	144
	Activity 6.2	148
Unit 6.3	Flowchart Algorithms in Computational Thinking	
	Flowchart representation + tracetables	149
	Activity 6.3.1	152
	Flowchart using decisions (IF)	153
	Activity 6.3.2 (a)	154
	Activity 6.3.2 (b)	154
	Flowchart using repeat structures (Loops)	155
	Activity 6.3.3	157
	Activity 6.3.4	158
	Activity 6.3.5	160

Chapter 7 Coding

Unit 7.1	Introduction to programming using variables	161
	Global vs Local variables	162
	Activity 7.1.1	167
Unit 7.2	Mathematical operators	169
	Basic operators (+ - / * mod)	169
	Order of precedence	172
	Activity 7.2.1	172
	Activity 7.2.2	174
	Random numbers	175
	Activity 7.2.3	178
	JOIN Block	179
	Activity 7.2.4	180
Unit 7.3	Interactive programming (Keyboard input)	
	Ask and Answer blocks	181
	IPO model	182
	Activity 7.3	185
Unit 7.4	Math Functions	186
	Random, Square Root, Round, Floor, Ceiling, Absolute value	187
	Activity 7.4.1	188
	Activity 7.4.2	189
	Activity 7.4.3	192

	Activity 7.4.4	193
Unit 7.5	Stages of solving a problem	194
	IPO, Flowchart, Trace tables	195
	Activity 7.5	196
Unit 7.6	Decision structures (Selection using the IF Block)	197
	Boolean operators (AND/OR/NOT)	198
	Activity 7.6.1	199
	Algorithms and Trace tables	204
	Activity 7.6.2	205
	Activity 7.6.3	206
Unit 7.7	Looping (Repetition and Iteration)	
	Basic programs using loops	207
	Activity 7.7.1	210
	Activity 7.7.2	211
Unit 7.8	Condition Looping (Repetition and Iteration)	
	Repeat Until and Wait blocks	212
	Activity 7.8	215
Unit 7.9	Consolidation	
	Questions and Answers	216
	Activity 7.9	218
Unit 7.10	Integration of computational thinking/ problem solving	
	Activity 7.10.1	219
	Placing fragmented coding segments in order	220
	Tracing through blocks	222
	Activity 7.10.2	223
	Trouble shooting/ common errors in looping	225