Information and Communication Technology

Grade 9

(2021)

Essential Contents

Department of Information Technology
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Grade 9 (2021)
Essential Contents (Grade 8 & 9)

Competency	Competency Level	Content	Learning Outcomes	Duration / Periods
1. Uses computers efficiently and effectively with operating system	1.1 Explores basic troubleshooting of computers and maintenance procedures (hardware and software)	● Troubleshooting of simple computer faults ● Hardware issues (keyboard, mouse, power cable, network cable, VGA cable) ● Sound output issues (speaker connectivity, check the volume) ● Ports connectivity (PS/2, USB, Micro USB, VGA, HDMI, Parallel, RJ45, Memory Card Reader) ● Troubleshooting and resolving of relevant computer software issues ● Corrupt software ● Blank desktop	● Troubleshoots and resolves hardware issues ● Troubleshoots and resolves software problems	02
	1.2 Explores the main components of the network in the school computer lab	● Main components of a computer network [Computers, Network Interface Card (NIC), Switches, etc.]	● Describes main components of the computer network	
2. Use of word processing software in day today activities	2.1 Uses basic functions of word processing software in creating a document	● Create, open, save and close a document ● Formatting of Text ● Inserting files/objects (text, picture, shapes, clip art, word art etc.) ● Inserting a table ● Spelling and grammar check ● Lists	● Creates a formatted document using word processing software	02

3. Uses spreadsheet software for calculations and for simple analysis of data	3.1 Describes basics of spreadsheet software	● Introduction to spreadsheet application software IDE ● Work Book, Worksheet ● Inserting, renaming and deleting worksheet ● Cell Addressing	● Uses IDE of spreadsheets software ● Uses Cell Addressing	02
	3.2 Enters data in worksheet	● Changing column width and row height ● Formatting Cells: o Text alignment, Font, Border, Fill ● Data types : Value, number, Currency, Date and Time ● Saving a workbook	● Determines required column width and row height ● Formats cells ● Explains Cell Formatting ● Creates workbook and Save	
	3.3 Carries out Simple mathematical calculations	● Use of mathematical operators o Addition o Subtraction o Multiplication o Division	● Identifies mathematical operators ● Uses operators correctly	02
	3.4 Uses Functions to carry out simple mathematical calculation	● Basic Function used in spreadsheets SUM, AVERAGE, MAX, MIN, COUNT, COUNTA ● Data sorting	● Identifies functions and its parameters for required task ● Applies spreadsheet software tools to carry out the task ● Applies Spreadsheet software for data sorting	
	3.5 Uses various charts to display data	● Basic Chart types: Column Chart, Bar Chart, Line Chart, Pie Chart ● Chart options: Change of chart type, formatting Legend, Formatting data series and axis, Switching row and column	● Identifies the relevant chart types ● Creates the chart using relevant tools ● Creates and format the suitable chart for the relevant data	01

4. Uses flow charts to solve simple problem with Sequence Selection, Iteration and develop programs (using Scratch)	4.1 Uses Sequence, Selection and Iteration control structure for drawing flow charts	● Problem solving using multiple Selections ● Problem solving using Iterations	● Draws flow charts to solve simple problems ● Identifies the problem and decide solution	04
	4.2 Uses Selection and Iteration (Repetition) control structures for solving simple problems with visual support	● Selection control structures with multiple conditions ● Control structure with simple iteration ● Development of simple programs (sequence, selection and iteration) using visual supports of programming language (using an Interface)	● Applies multiple conditions in selection control structure ● Identifies the difference between selection and iteration ● Uses iteration control structure to solve relevant problems	
	4.3 Evaluates the solution to ensure that it properly satisfies the problem	● Proper decomposition of the problem ● Ensuring all aspects are covered in decomposition ● Designing and writing a program with correct decomposition	● Evaluates whether the solution to ensure the problem is created accurately and efficiently	
5. Uses a software package for physical computing to implement programming logic	5.1 Uses a simple hardware device to implement physical computing	● Components of physical computing device ● Controllable devices ● Turning on/off LEDs ● Design LED patterns with simple programs	● Writes a program to operate external circuits using two logic levels (yes/no, on/off) ● Implements programs on physical devices. Example: Turning On/Off the LEDs with passing values	04
	5.2 Programs simple digital systems (Micro controller based kit)	● Development of programs for detecting the inputs from sensors ● Development of programs for controlling actuators	● Develops programs for detecting the inputs from sensors ● Develops programs for controlling actuators of simple	

			sense detector	
6. Investigates computer network for communication and resource sharing	6.1 Utilizes computer network in resource sharing and communication	● Sending messages through a computer network ● Sharing resources (Software, Folder, File, CD Drive, Printer etc.)	● Sends messages through computer network ● Shares the resources through a computer network	01
7. Explores the impact of ICT on society and career opportunities	7.1 Describes impact of ICT on society	● Applications of ICT o Office automation o e-Learning o e-Commerce, m-Commerce o e-Health o e-Government ● Digital Divide ● Safe disposal of electronic waste	● Describes the benefits in use of ICT in society ● Describes the negative aspects arise in using ICT	02
	7.2 Explains career opportunities in computing	● Career Opportunities o Software Quality Assurance Engineer o Software Engineer o Database Administrator o Software Architect o Programmer o System Analyst o Web Application Developer o Graphic Designer o Network Administration o Business Analyst	● Explains the career opportunities in the present society ● Explains the job role of different careers in computing	
			Total	**20**

Low Prioritized Contents of Grade 9

Competency	Competency Level	Content	Remarks
1. Prepares specifications for purchasing a computer and peripherals	1.1 Identifies user needs for a computer and its peripherals	● Specification of computer components and their meaning to users	Could be completed in the first term
	1.2 Selects Computer and its peripherals according to the user requirements.	● Basic Specifications of computer and its peripherals o Processor types and speed o Hard disk capacity o Monitor specifications o RAM specifications o VGA and sound ● Warranty ● Included software ● After sale services	Could be completed in the first term
3.Uses flow charts to solve simple problem with Sequence Selection, Iteration and develop programs (using Scratch)	3.1 Uses Sequence, Selection and Iteration control structure for drawing flow charts	● Problem solving using nested Iterations	This section has scheduled to complete with Grade 6 competency 5, Grade 7 competency 5 and Grade 8 competency 4
	3.3 Develops programs with visual support with nested iterations	● Development of programs using basic iteration control structure: Repeat ● Development of visual program with selection & iteration and nested iteration control structure	Recommend to complete this section using extra hours.But students who choose ICT as a subject for GCE (O / L) can complete this section in detail in Grade 10 and Grade 11.
	3.4 Develops programs with array variables	● Declaration of array variable ● Appling of array variables to solve problems	