## Information and Communication Technology Diamond Project - Grade 10



This document would be much useful for all the teachers to manage time of their subjects and students to get the maximum use of time.

"Competency Based Educational Approach" has paved way to develop habits, knowledge, attitudes and skills which are needed for a complete life within Sri Lankan young generation based on meaningful learning.

School teaching- learning process expects forwarding a balanced personality and guiding to acquire experiences in a learner friendly environment. The ultimate result of this is to improve the output in relation to input and including a capable generation to the global trends.

Accordingly the Diamond Project has been introduced by the Sabaragamuwa Provincial Education Department to teach every student with equal targets by every teacher in every school, actively engage in planning lessons and involve students in teaching learning process, employing class assessments and evaluation effectively and to provide guidance for effective time management. This has introduced the guidance for the teachers to select activities and quality inputs to develop competencies of the students. Teacher should reach the targets systematically depending on his or her own creativity.

Our expectation is to mould an ideal personality with relevant competencies to suit the modern world and to forward an appropriate role of a teacher and active classroom with learner based culture to the free education system.

S. Kuruppuarachchi

The Provincial Director of Education.

## 1<sup>st</sup> term - Targets

Unit	Competency	Competency Level	Periods	Completion Date	Hours	Other Suggestions
1	1	1.1	02	January 1 <sup>st</sup> week		
		1.2	01	January 1 <sup>st</sup> week	2 hours and 40 minutes	
		1.3	01	January 2 <sup>nd</sup> week		
2	2	2.1	02	January 2 <sup>nd</sup> week		
		2.2	03	January 3 <sup>rd</sup> week	9 hours and 20 minutes	
		2.3	02	January 4 <sup>th</sup> week		
		2.4	01	January 4 <sup>th</sup> week		
		2.5	06	February 2 <sup>nd</sup> week		
3	3	3.1	02	February 3 <sup>th</sup> week		
-		3.2	01	February 3 <sup>th</sup> week	6 hours and 40 minutes	
		3.2	01	February 4 <sup>th</sup> week		
		3.3	02	February 4 <sup>th</sup> week		
		3.3	01	March 1 <sup>st</sup> week		
		3.4	02	March 1 <sup>st</sup> week		
		3.5	01	March 2 <sup>nd</sup> week		

## 2<sup>nd</sup> term - Targets

Unit	Competency	Competency Level	Periods	Completion Date	Hours	Other Suggestions
4	4	4.1	02	April 4 <sup>th</sup> week	2 hours and 40 minutes	
		4.2	02	May 1 <sup>st</sup> week		
5	5	5.1	01	May 1 <sup>st</sup> week		
5	5	5.1	02	May 2 <sup>nd</sup> week	4 hours and 40 minutes	
-		5.2	02	May 2 <sup>nd</sup> week		
		5.2	02	May 3 <sup>rd</sup> week		
6	6	6.1	02	May 4 <sup>th</sup> week		
		6.2	03	June <sup>1st</sup> week		
		6.3	03	June 2 <sup>nd</sup> week	10 hours	
		6.4	02	June 3 <sup>rd</sup> week		
		6.5	02	June 4 <sup>th</sup> week		
		6.6	03	July 1 <sup>st</sup> week		

## 3<sup>rd</sup> term - Targets

Unit	Competency	Competency	Periods	Completion Date	Hours	Other Suggestions
		Level				
7	7	7.1	02	September 1 <sup>st</sup> week		
		7.2	01	September 1 <sup>st</sup> week		
		7.2	01	September 2 <sup>nd</sup> week		
		7.3	02	September 2 <sup>nd</sup> week		
		7.4	02	September 3 <sup>rd</sup> week		
		7.5	01	September 3 <sup>rd</sup> week	9 hours and 20 minutes	
		7.5	01	September 4 <sup>th</sup> week		
		7.6	02	September 4 <sup>th</sup> week		
		7.7	02	October 1 <sup>st</sup> week		
8	8	8.1	01	October 1 <sup>st</sup> week		
0	0	8.1	01	October 2 <sup>nd</sup> week	4 hours	
		8.2	02	October 3 <sup>rd</sup> week	4 110015	
		0.2	05	October 5 week		
9	9	9.1	01	October 3 <sup>rd</sup> week		
		9.2	01	October 4 <sup>th</sup> week		
		9.3	02	October 4 <sup>th</sup> week		
		9.4	02	November 1 <sup>st</sup> week		
		9.5	01	November 1 <sup>st</sup> week	8 hours and 40 minutes	
		9.5	02	November 2 <sup>nd</sup> week		
		9.6	01	November 2 <sup>nd</sup> week		
		9.7	02	November 3 <sup>rd</sup> week		
		9.8	01	November 3 <sup>rd</sup> week		

Competency Level (Sub Unit)	Activities	Evaluation	Learning Teaching Methods	Aids	Extra Reading	Practical
1.1. Investigates the contribution of ICT towards national development	Prepare a booklet on the use of ICT in various fields		Group Discussion	Internet, Posters, Leaflets, Newspaper Articles	https://www.gov.lk/inde x.php http://www.gic.gov.lk/ http://techguru.lk/news/s ri-lankan-it-stats-2015/	
1.2. Investigates the computer as a system for converting data into information	Provide students with items and let them decide whether they are data or information.		Discussion Presentation Activity	Internet Video clips Presentation	http://tutor2u.net/busin ess/ict/intro_business_i nformation.htm	
1.3. Explores the evolution of computers to identify its major developments	Create a chart to illustrate computer Generations		Group Discussion	Internet	https://www.britannica.c om/technology/computer /History-of-computing	
2.1. Classifies computers using a variety of methods	Prepare a summery chart of various types of computers		Group Work	Internet	https://www.tutorialspoi nt.com/computer_funda mentals/classification_of _computers.asp	
2.2. Explores computer systems by function	Provide students with requirement specifications to purchase a computer and ask them to specify hardware for that purchase		Presentation Activity	Internet Video clips	http://www.tutorialspoi nt.com/computer_funda mentals/computer_outp ut_devices.htm	

2.3. Identifies and connects basic peripherals to the computer.	Build a hardware board including components of a PC to demonstrate the connectivity of various components inside the PC	Group Work	Hardware components	http://www.tutorialspoi nt.com/computer_funda mentals/computer_port s.htm
2.4. Uses the basic block diagram to demonstrate the computer system	Prepare a poster to illustrate the block diagram of a computer system	Group Work	Internet Reading Material	http://www.vidyagyaan. com/computer- knowledge/block- diagram-of-computer/
2.5. Investigates benefits and concerns of computer networks for optimal communication	Prepare a chart about various usages of computer networking	Group Discussion	Internet Mobile Phones	https://greengarageblog.org/14-main-advantages-and-disadvantages-of-computer-networkinghttps://www.nibusinessinfo.co.uk/content/benefits-computer-networkshttp://www.tcpipguide.com/free/t_TheAdvantagesBenefitsofNetworking.httmhttps://www.bbc.com/bitesize/guides/z36nb9q/revision/2
3.1. Uses the binary number system to represent data in computer systems	Exercise on conversion of decimal positive integers to binary and vice - versa	Observation Group Activity Discussion		http://www.cse.mrt.ac.l k/~dilumb/docs/Navy/ DCS201/02-

<ul> <li>3.2. Converts decimal numbers to Binary, Octal and Hexa Decimal</li> <li>3.3. Converts Binary numbers to Decimal, Octal and Hexa Decimal numbers and vice versa</li> </ul>	Calculations on conversions and Elicit the logic behind conversions between octal, hexadecimal and binary.	Observation Exploration	Presentation Internet Reading Materials	http://www.purplemath.c om/modules/numbbase.h tm http://www.shodor.org/i nteractivate/activities/Nu mb erBaseClocks https://www.mathsisfun. com/binary-number- system.html
3.4. Determines the capacity of data storage	Find the capacities of various storage devices of a given computer	Observation Group Activity Discussion Exploration	Videos Internet Reading Materials	http://www.lib.cam.ac. uk/dataman/pages/stora ge.html
3.5. Explores coding systems in computers	Exercises on conversion of decimal numbers in to BCD	Observation Group Activity Discussion	Presentation Video Internet	http://www.cs.umd.edu /class/sum2003/cmsc31 1/Notes/Data/ascii.html
<ul> <li>4.1. Identifies basic logic operators and draws truth tables to illustrate their functions</li> <li>4.2. Applies concepts of Boolean logic to find solutions to simple day-to-day life problems</li> </ul>	Creating truth tables for given logic circuits	Observation Group Activity	Presentation Internet Reading Materials	http://www.ehow.com/i nfo_8767345_everyday -uses-boolean- algebra.html http://www.ee.surrey.ac .uk/Projects/CAL/digita l- logic/gatesfunc/index.h tml

5.1. Explores operating systems by type, functions, benefits and concerns	Study two latest versions of Windows and Linux OSs and compare and contrast their functions		Group Work	Presentation Video Internet Reading Materials	https://www.tutorialspoi nt.com/operating_syste m/os_overview.htm
5.2. Handles files and folders in Operating Systems	Conduct practical assessments to practice OS operations		Observation Group Activity	Presentation Video Internet Reading Materials	http://www.pcmag.com /article2/0,2817,239173 0,00.asp
<ul> <li>6.1. Explores the concept and features of word- processing</li> <li>6.2. Performs basic tasks in word-processing software</li> <li>6.3. Uses different types of formatting in word-processing</li> </ul>	Prepare a word document including cover page (A4 size)		Group work	Computers Scanners	http://shaunakelly.com/ word/concepts/introduc tion.html http://www.slideshare.n et/rodorgershon/formatt ing-word-processing- document
<ul> <li>6.4. Manipulates table feature in word- processing software</li> <li>6.5. Creates and prints documents</li> </ul>	Prepare a duty chart for your class including all the relevant formatting and get a hard copy of it.	Display the prepared duty chart in the classroom	Group work	Computers Printers	http://www.tutorialspoi nt.com/word_2010/wor d_create_table.htm
6.6. Uses the Mail Merge facility	Prepare a calling letter for parents' meeting using given address list		Group Work	Computers Sample calling letters	http://wordprocessing.a bout.com/od/wordproce ssingsoftware/a/14mail merge.htm

<ul> <li>7.1. Explores a Spreadsheet to identify its basic features and functions.</li> <li>7.2. Moves around the worksheet to gain hands on experience of data entry</li> <li>7.3. Performs basic mathematical operations</li> </ul>	Prepare a mark sheet for a class. Grades, ranks and averages should be calculated using excel functionalities		Practical	Computers, Mark sheets	http://www.epa.gov/reg ion6/qa/qadevtools/mo d4references/othertools /using_excel.pdf http://spreadsheets.abo ut.com/od/excelformula s/ss/2010-12-25-excel- 2010-basic-tutorial- pt1.htm
<ul> <li>7.4. Uses inbuilt functions for calculations</li> <li>7.5. Formats a worksheet</li> <li>7.6. Uses relative versus absolute cell references appropriately.</li> <li>7.7. Creates charts using Spreadsheet to explain data</li> </ul>	Prepare a school mark sheet application including basic calculations, required analysis, summaries and charts	Present your application to the class	Practical	Computers	
<ul> <li>8.1. Produces effective presentations integrating multimedia.</li> <li>8.2. Applies suitable animations to enhance the quality of presentations.</li> </ul>	Prepare a presentation about your school including photos, audio and videos	Present your presentation to the class	Group work Practical	Computer, Speakers	http://www.facultyfocu s.com/articles/learning- styles/how-much- multimedia-should- you-add-to-powerpoint- for-online-students/

	Eveloes and	Crown Worls	Schoollibror	http://www.tooph
	Explore and collect data	Group Work	School library Books	http://www.teach-
9.1. Explores the Concept				ict.com/gcse_computing /ocr/databases/relational/
of Database	regarding the		Log books	miniweb/index.htm
9.2. Creates a simple	school library activities and			miniwed/mdex.num
database with a single				
table, manually.	prepare a report			https://weblearn.ox.ac.u
9.3. Converts a manual				k/access/content/group/
database into				e05e05d2-f4ce-4a24-
electronic media.				a008-
				031832bd1509/Learnin
				gRes_Open/Course_Bo
				ok_Access_TDAC_Cre
				ating_Qu_Fo_Re10.pdf
9.4. Design a simple	Develop a school	Group Work	School library	http://code.tutsplus.com
relational database.	library system for	Observation	Computers	/tutorials/relational-
9.5. Uses DBMS software	the school library		Books	databases-for-
to create relational			Log books	dummiesnet-30244
databases				
9.6. Uses forms to view				
and update data				http://www.gcflearnfre
9.7. Creates Queries to				e.org/access2007/7
extract information				
9.8. Creates reports to	1			
present information				