|  |  |  |  |
| --- | --- | --- | --- |
| **SUBJECT:** | **ICT & Computer Science** | **YEAR GROUP:** | **7** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Term** | **Topic** | **Content Outline** | **Learning Outcomes** |
| Term 1 | Networks for a Purpose (4295) | Learners can create a design for a simple network, e.g. a small home network. Learners should be able to produce a system which has all the relevant items connected in a meaningful way, and should demonstrate that they have made an attempt to show how the system could connect to the internet.  Learners add an index to their design which describes each component of their network and its function.  Learners can list two or three management tasks for their network, with explanations of why they are important.  Learners can describe some security measures that would be appropriate to implement for their network. | 1. Design a simple network 2. Identify the purpose and componente of a network 3. Understand network security Issues. 4. Understand network security issues |
| *Exploring Programming (4282)* | The learner’s plans should demonstrate how they have understood the objective and the intended structure of their program. This plan should be in the form of a flowchart.  The program should be developed in Scratch.  Learners should create the design (e.g. a flower pattern) by creating a simple shape and rotating it. They should be able to write accurate instructions to create the basic shape and to duplicate it to form the pattern.  Their plan should be in the form of a flowchart and should demonstrate how they have used decomposition to break the complex shape or pattern into its composite parts.  The learner’s plans should demonstrate how they have understood the objective and the intended structure of their program.  This plan should be in the form of a flowchart.  The intended structure for their program should include at least one procedure.  For assessment, programs will be provided as a flowchart and will produce a simple shape.  Learners should make their prediction by working through the logic of the program.  The program should be developed in Scratch. Learners should create the design (e.g. a flower pattern) by creating a simple shape and rotating it. They should be able to write accurate instructions to create the basic shape and to duplicate it to form the pattern.  Note: in Scratch, procedures are ‘custom blocks’. | 1. Plan an algorithm involving repetition to draw a simple shape or pattern 2. Create a program using repetition to produce a simple code shape or pattern 3. Predict the output of a program that includes repetition 4. Plan an algorithm to draw a complex shape or pattern, using decomposition 5. Create a procedure and use it in a program to draw a complex shape or pattern |
| Exploring the Internet (4283) | Learners are able to use a web browser and one or more search engines to retrieve information. They should be able to filter information, e.g. by country, and refine their searches to find relevant material.  Learners are able to check information to ensure it is relevant and useful, discarding any other information – but they may keep more useful information than they need.  Learners are able to use a variety of means to store information they have found for future use. They are able to:   * save a web page and view it later * use the browser software to print a web page * bookmark a site and view it later.   Learners are able to use the browser software to select, copy and paste useful text into another software package or document.  Learners are able to use copy and paste to copy URLs into another document or email.  Learners are able to save single objects, such as images from a webpage, for their own use.  Learners are able to work independently, using the practical skills they have acquired to gather simple, useful information about a topic. They are able to present their findings in another document. The findings at this level should be relevant, but not necessarily organised or reworded. | 1. Use internet tools to find information 2. Evaluate relevance and usefulness of material 3. Store and retrieve information 4. Copy and paste information from a website 5. Save URLs and objects from a   website   1. Use extended search skills |
| Term 2 | Programming for a Purpose | It is expected that the abstraction of the system will include the inputs and outputs of the system, and the relationship between them.  The outputs are determined by the appropriate input(s). At Pass level, the program should work when tested with normal values.  For assessment, programs will be provided as a flowchart. Learners should make their prediction by working through the logic of the program.  At Merit level, the program should work when tested with normal values, extreme values and erroneous values. The same program can be used as evidence for LO2 and LO4 | 1. Plan an interactive program using abstraction 2. Create and test P an interactive program using selection, input and output 3. Predict the output P of an interactive program that uses input and selection 4. Create and M formally test an interactive program using selection, input and output 5. Correct (debug) a M short interactive program containing more than one error |
| Exploring Email (4284) | Learners can access their own email account and use the email software to compose, send, read and reply to messages. They know their own email address. They complete the subject line of the email when composing a new message. They can use the text tools in the email software, such as copy, paste, delete and spellchecker (if appropriate), to edit or refine their messages.  Learners can add new email addresses and groups to their address book and add addresses to the groups.  Learners understand the difference between cc, bcc and forward and how to use these. They use the address book to send copies and forward emails to addresses in their address book. (They can use the new addresses/groups they have added in LO2.)  Learners demonstrate that they can view an attachment which they receive with an email. This could be a text document, an image or other popular file format. You could ask the learner to reply to the email, answering something about the contents of the attachment as evidence of having viewed it.  Learners attach an image or document file to an email. Learners do not need to have created the file, but should know where it is located and be able to navigate to it without help. The file should be an appropriate size for sending on slow connections.  Learners create and name a new folder, and move the email they have sent for LO5 into this folder. At this level, moving mail between folders will be manual – learners are not expected to set up mail rules. | 1. Compose, edit, read and respond to emails 2. Add addresses to the address book 3. Use the address book to send copies, blind carbon copies and forward emails 4. View an attachment 5. Add an attachment to an email 6. Manage email folders |
|  | Word Processing | Enter and combine text and other information accurately within word processing documents.  Create and modify layout and structures for word process documents  Identify the document requirements for structure and style. Identify what templates and styles are available and when to use them. Create and modify columns, tables and forms to organise information. Select and apply styles to text  Plan how to present and format spreadsheet information effectively to meet needs. Select and use appropriate tools and techniques to format spreadsheet cells, rows, columns and worksheets. Select and format appropriate chart or graph type to display selected information Select and use appropriate page layout to present and print spreadsheet information | 1. Identify what types of information are needed in documents 2. Use appropriate techniques to enter text and other information accurately and efficiently 3. Select and use appropriate templates for different purposes 4. Identify when and how to combine and merge information from other software or other documents 5. Select and use a range of editing tools to amend document content 6. Combine or merge information within a document from a range of sources 7. Store and retrieve document and template files effectively, in line with local guidelines and conventions where available |
| Terrm 3 | Use word processing software tools to format and present documents effectively to meet requirements | Format characters: Size, font style (typeface), colour, bold, underline, italic, superscript, subscript, special characters and symbols  Format paragraphs: Alignment, bullets, numbering, line spacing, borders, shading, widows and orphans; Tabs and indents  Check word processed documents: Spell check, grammar check, typeface and size, hyphenation, page layout, margins, line and page breaks, tables, print preview, accuracy, consistency, clarity; language and dictionary settings  Quality problems with documents: Will vary according to the content, for example, text (eg styles, structure, layout), images (eg size, position, orientation), numbers (eg decimal points, results of any calculations) | 1. Identify how the document should be formatted to aid meaning Select and use appropriate techniques to format characters and paragraphs 2. Select and use appropriate page and section layouts to present and print documents 3. Describe any quality problems with documents Check documents meet needs, using IT tools and making corrections as necessary 4. Respond appropriately to quality problems with documents so that outcomes meet needs |
| Exploring Multimedia (4285) | Ensure that any buttons or text which are used for navigation, or to open files or activate sounds, are clearly marked on the printout. If it is not possible to tell from the printout what an object is doing, then the learner will need to write this on the printout, next to the objects.  Avoid overcrowding of text; employ suitable fonts, text size and position for purpose; choose readable combinations of text and background colours.  The learner is able to link at least three slides in an organised way.  There should be a choice of routes through the presentation, not simply a linear one.  Learners must be able to identify at least two elements of the presentation (content, language, layout, colour, style, etc.) which address a particular need. | 1. Create a page of P text, images and sounds which are activated by appropriately named and positioned buttons 2. Use effective page design 3. Organise screens and identify appropriate choices and links 4. Create pages M which offer the user options 5. Demonstrate how M the presentation meets the needs of the intended audience |
| Exploring Spreadsheets (4280)  Spreadsheet Software | Learners should be able to enter text and data into spreadsheet software to create a working spreadsheet. This can be a copy of a spreadsheet supplied by you, to which learners are asked to add items.  Use a spreadsheet to enter, edit and organise numerical and other data  Select and use appropriate formulas and data analysis tools to meet requirements.  Select and use tools and techniques to present and format spreadsheet information  Learners should be able to enter simple formulas like =A1+A2. They should be able to use the SUM function to total a range of cells. (Note: This should involve creating the SUM function and not just using AutoSum from the toolbar.) They should be able to copy a formula to another location. The assessment may prescribe which formulas to put where.  Learners can select a given range of data and use it to create an appropriate graph. Learners give the graph a meaningful title, but the axes may not be labelled or referenced correctly.  Learners are given some data to change in their spreadsheet (which will affect both data and formulas). Learners manage to change the data and make appropriate checks to make sure that their spreadsheet still works.  Learners need to demonstrate an understanding of the effect of changing data and should be able to answer questions to modelled scenarios, such as: ‘If the cost goes up by ... would there still be a profit?’.  LO4 is about the learner being able to make the changes, while LO5 is about the learner’s understanding of the implications of those changes, e.g. using the ability to change or modify a spreadsheet to answer questions. | 1. Identify what numerical and other information is needed in the spreadsheet and how it should be structured 2. Enter and edit numerical and other data accurately Combine and link data across worksheets 3. Store and retrieve spreadsheet files effectively, in line with local guidelines and conventions where available 4. Enter and edit: Insert data into single and multiple cells, clear cells, edit cell contents, replicate data, find and replace, add and delete rows and columns; use absolute and relative cell references, add data and text to a chart 5. Numerical and other information: Numbers, charts, graphs, text, images 6. Spreadsheet structure: Spreadsheet components (eg cells, rows, columns, tabs, pages, charts, ranges, workbooks, worksheets), structure, design and layout 7. Store and retrieve: Save, save as, find, open, close, open CSV file in spreadsheet application, save spreadsheet file as CSV; templates 8. Analyse and manipulate: Totals, sub-totals and summary data; sorting and display order; lists, tables, graphs and charts; filter rows and columns; Judgment of when and how to use these methods Functions and formulas: Design of formulas to meet calculation requirements; mathematical, statistical, financial, conditional; logical functions 9. Format cells: Numbers, currency, percentages, number of decimal places, font and alignment, shading and borders; date and time formats, wrap text Format rows and columns: Height, width, borders and shading, hide, freeze, 10. Format charts and graphs: Chart type (eg pie chart, bar chart, single line graph, area, column, x-y scatter, stock, radar, doughnut, surface), title, axis titles, legend, change chart type, move and resize chart |