Cambridge ICT Starters **Syllabus**

INITIAL STEPS, NEXT STEPS, ON TRACK

For assessment in 2008

Information and Communications Technology (ICT)

Cambridge ICT Starters

For assessment in 2008

CONTENTS

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SECTION 1: INTRODUCTION

1.1 Cambridge ICT Starters

Information and Communications Technology (ICT) is now part of the educational experience of children in most parts of the world. Taught as either a discrete subject or embedded within the curriculum, ICT is increasingly being regarded as a new 'literacy', alongside reading, writing and numeracy. Cambridge ICT Starters is designed to introduce students to the key ICT applications they need to use to acquire that literacy and to understand the impact of technology on our daily lives. The qualifications provide a framework in which ICT competence can be developed within an environment that is appropriate for the age of the students.

The syllabus provides a structured scheme of assessment for students developing their ICT competence in different ways. Modules can be delivered according to the needs of each learning situation – across the curriculum or as a separate course of study. The scheme concentrates on the development of practical skills in using ICT. At each stage of assessment, students will use ICT to:

communicate

handle information

model

measure and control

This scheme operates at three levels of the University of Cambridge International Examinations (CIE) Framework for Qualifications:

Initial Steps

Next Steps

On Track

1.2 The International Dimension

Cambridge ICT Starters acknowledges the competencies valued in ICT around the world. The syllabus has been mapped against national standards in a number of countries, so that the skills assessed reflect the performance standards demanded in an international context.

The syllabus is available in English and Spanish. Subject to guidelines set out by CIE, Centres are also permitted to translate the syllabus and administer assessment tasks in any local language (please contact CIE Customer Services for more details).

1.3 Target Group

Cambridge ICT Starters are predominantly aimed at students aged between 5 and 15 years. The qualifications are suitable for those in primary and secondary education.

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SECTION 2: OVERVIEW OF CAMBRIDGE ICT STARTERS

2.1 Structure

Each level of the scheme contains two stages, with an equal number of modules. Modules can be taught in any order, although all modules must be achieved at Stage 1 for a Cambridge ICT Starters Stage 1 certificate and all modules must be achieved at both stages for a full certificate.

	INITIAL STEPS	NEXT STEPS	ON TRACK
STAGE 1	3	4	4
STAGE 2	3	4	4

Each module contains a short *Introduction* as to the purpose of the module, followed by the *Learning Objectives* table. This table shows which skills must be assessed for that module, along with further details about the evidence the students must produce to demonstrate the Learning Objectives. Each module then sets out *Getting Started* advice for the teacher, to help with planning the delivery of the module, and finishes with an *Assessment Guidelines* section.

Further advice can be obtained from the CIE website – http://www.cie.org.uk – about how you can join our email discussion group for teachers of Cambridge ICT Starters.

2.2 Form of Assessment

At the end of each module, students must be assessed in an assessment test to show that they can demonstrate each of the *Learning Objectives* with no additional help from their teacher or their peers. **Teachers are permitted to create their own assessment tests, tailored towards the individual students and local learning environment. Also, CIE provides Cambridge ICT Starters assessment tests to CIE Centres. For more information, please contact international@cie.org.uk.**

At the end of each assessment test, the tutor completes a record of assessment (*Learning Objectives Record Sheet*) for each student. This should be photocopied for each student and must be signed by the teacher.

Important note: In some cases, CIE accepts that it is not possible or practical to submit hard copy evidence for a particular *Learning Objective*. Where the *Learning Objectives* table states 'Teacher Evidence', CIE relies on the professionalism of teachers to sign to say that they have observed the students achieving that objective.

The original assessment test given to students, a sample of the resulting student work and the *Learning Objectives Record Sheet* should be submitted to CIE for moderation. The sample will not be returned and Centres are advised to keep a copy of each candidate's submission.

Students will be graded at Pass or Merit in each assessment test. The results of all modules will be combined into an overall grade for the candidate.

Students must meet all the Pass criteria specified on the *Learning Objectives Record Sheet* to achieve a Pass in any module. To be awarded Merit in a module, students must have achieved all the Pass **and** Merit criteria within that module.

A Merit Grade for each level of Cambridge ICT Starters will be awarded where the student has achieved Merit Grades in the majority of modules taken at each stage or level, i.e.:

Initial Steps: Stage 1 - 2 or more modules; Full Certificate - 4 or more modules
Next Steps and On Track: Stage 1 - 3 or more modules; Full Certificate - 5 or more modules

Assessment tests should take place in a classroom environment under controlled conditions. They will take less time at lower levels than at the higher levels but no assessment test should exceed 1 hour (Initial Steps) or 1½ hours (Next Steps/On Track). For some modules, particularly at On Track Level, students may need to do some preparatory work in order that they can complete the assessment test in the allowed time.

Submission of a student's work for moderation is available on demand. This enables the formal assessment of a student's skills to take place at any time of the year, to fit in with the needs of the individual or that of the school's curriculum.

2.3 Certification

Students must complete all modules at both stages in order to achieve a full certificate at a particular level.

Successful completion of the Stage 1 modules will lead to the Cambridge ICT Starters Stage 1 certificate at the appropriate level, stating the grade achieved overall.

Successful completion of all Stage 1 and Stage 2 modules will lead to the Cambridge ICT Starters Full Certificate at the appropriate level, stating the grade achieved overall. For the Full Certificate, Centres can submit work all at once (i.e. all modules together), as an alternative to two separate stages.

2.4 Learning Hours

No defined learning hours are given in any of the modules as students of different ages with differing levels of experience and, using ICT in different curriculum areas, may progress at a different pace.

2.5 Progression

Each stage of Cambridge ICT Starters has been designed to facilitate progression through the scheme. Skills demanded for particular applications are developed through each level, so that students can build on the competence they have achieved previously.

Initial Steps	Next Steps	On Track
Stage 1	**Stage 1**	**Stage 1**
Starting Text (4269)	Exploring Documents (4278)	Documents for a Purpose (4289)
Starting Images (4270)	Exploring Images (4279)	Multimedia for a Purpose (4290)
Starting Graphs (4271)	Exploring Spreadsheets (4280)	Spreadsheets for a Purpose (4291)
	Exploring Databases (4281)	Databases for a Purpose (4292)
Stage 2	**Stage 2**	**Stage 2**
Starting Control (4272)	Exploring Control (4282)	Control for a Purpose (4293)
Starting Searches (4273)	Exploring the Internet (4283)	Website design for a Purpose (4294)
Starting Email (4274)	Exploring Email (4284)	Networks for a Purpose (4295)
	Exploring Multimedia (4285)	Video or Animation for a Purpose (4296)

There is no requirement to have completed one full level before progressing onto the following level; Centres may decide to enter students for Stage 1 only. However, at each level above Initial Steps, it is assumed that the student possesses the relevant skills and knowledge of the earlier levels. Students wishing to progress from the On Track level, or those who require formal assessment above this level, are encouraged to develop their practical skills in a more integrated, work-related context. Tutors should refer to the CIE website (www.cie.org.uk) for information on further Cambridge ICT qualifications.

2.6 Maintaining the Cambridge International Examinations Standard

Cambridge International Examinations (CIE) must ensure the integrity of its assessment procedures so that everyone can have full confidence in the wide range of qualifications offered and the associated standards. In applying for Registered Centre status, Centre staff acknowledge that they will conduct the scheme carefully to the standards described in the individual Qualification syllabuses.

For institutions applying to become a Registered Centre for the first time, CIE will assess the suitability of staff, premises, resources, and procedures, before allowing Centres to operate CIE Qualifications.

To ensure quality, all assessments are externally moderated by CIE Moderators. The final decision on the performance of a candidate will rest with the Principal Moderator for the specific module.

2.7 Fees

Details of fees for these qualifications can be obtained from CIE Customer Services.

SECTION 3: SYLLABUS CONTENT

The Programmes of Study outlined below suggest the range of concepts which should be taught, whether or not they are explicitly assessed. Students' real life experience of using ICT (including mobile phones and computer games) should be acknowledged and referred to whenever relevant.

3.1   Initial Steps – Programme of Study

Students should learn to use ICT equipment and software confidently and purposefully to communicate and handle information, and to support their problem solving, recording and expressive work. They should be taught to reflect, discuss and consider the implications of using ICT equipment.

3.1.1   Skills developed

Students should learn to:

1. Use equipment and develop knowledge of ICT

   - use a variety of ICT equipment and software, which may include microcomputers and various keyboards, as well as TV, video and personal organisers, to carry out a variety of functions in a range of contexts
   - explore the use of computer systems and control technology in everyday life
   - examine and discuss their experiences of ICT and look at the use of ICT in the outside world

2. Communicate using ICT

   - begin to assemble text and pictures to communicate ideas in different forms using words, tables, pictures and sound
   - create, redraft and present ideas using text manipulation, laying out text, checking for errors and correcting them
   - utilise a paint or graphics package to present ideas

3. Handle Information using ICT

   - explore and use a variety of methods to enter and store information onto a computer
   - classify information using ICT
   - store, retrieve and process information that has been stored in a pre-prepared database or spreadsheet

4. Measure and Control using ICT

   - recognise that control is part of many everyday activities
   - give simple commands to control a device or virtual device

5. Model using ICT

   - explore real or imaginary situations in computer simulations by giving commands to an input device
   - investigate options within a simulation or game, posing questions or making decisions

3.2   Next Steps – Programme of Study

Students should learn to extend the range of ICT tools they use for communication, investigation and control; they should use ICT to select information, sources and media that are suitable for their purpose and assess the value of ICT in their work.

3.2.1   Skills Developed

Students should learn to:

1. Use equipment and develop knowledge of ICT

    *   use ICT to explore and solve problems in the context of work across a variety of subjects
    *   use ICT to further their understanding of information that they have retrieved and processed
    *   discuss their experience of using ICT and assess its value in their work
    *   investigate parallels with the use of ICT in the wider world, consider the effects of such uses and compare them with other methods

2. Communicate using ICT

    *   use ICT equipment and software to communicate ideas and information in a variety of forms, incorporating text, graphs, pictures and sound, as appropriate, showing sensitivity to the needs of their audience in choice of layout, typeface or graphics
    *   use equipment and software to organise, reorganise and analyse ideas and information

3. Handle Information using ICT

    *   interrogate information that has been stored, developing the need to take care in framing questions when collecting, accessing or interrogating information
    *   interpret, begin to analyse and check the plausibility of information held on ICT systems, and select the elements required for particular purposes
    *   select suitable information and media, and classify and prepare information for processing with ICT, checking for accuracy

4. Control and Monitor using ICT

    *   use simple commands to control a device
    *   use a sequence of commands to control a device
    *   use sensors to gather and record data for a purpose

3.3   On Track – Programme of Study

Students should learn to become critical and largely autonomous users of ICT, aware of the ways in which ICT tools and information sources can help them in their work, understand the limitations of such tools and of the results they produce, and use the concepts associated with ICT systems and software and the associated technical terms.

3.3.1   Skills Developed

Students should learn to:

1. Use equipment and develop knowledge of ICT
    - use ICT equipment and software autonomously
    - consider the purposes for which information is to be processed and communicated
    - use their knowledge and understanding of ICT to design information systems, and to evaluate and suggest improvements to existing systems
    - investigate problems by modelling, measuring and controlling, and by constructing ICT procedures
    - consider the limitations of ICT tools and information sources, and of the results they provide, and compare their effectiveness and efficiency with other methods of working
    - discuss some of the social, economic, ethical and moral issues raised by ICT

2. Communicate and handle information using ICT
    - use a range of ICT equipment and software efficiently to create good quality presentations for particular audiences, integrating information from several sources
    - select appropriate ICT equipment and software to fulfil a specific purpose
    - be systematic in their use of appropriate search methods to obtain accurate and relevant information from a range of sources
    - collect and amend quantitative and qualitative information for a particular purpose, and enter into a data-handling package for processing and analysis
    - interpret, analyse and display information, checking its accuracy and questioning its plausibility

3. Control, monitor and model using ICT
    - plan, develop, test and modify sets of instructions and procedures to control events
    - use a system that responds to data from sensors and explain how it makes use of feedback
    - use ICT equipment and software to measure and record physical variables
    - explore a given model with a number of variables and create models of their own, in order to detect patterns and relationships
    - modify the rules and data of a model, and predict the effects of such changes
    - evaluate a computer model by comparing its behaviour with data gathered from a range of sources

In working towards the On Track Level students will learn to become critical and independent users of ICT. They will develop their awareness of how ICT tools and information can help them in their work. They will appreciate the limitations of such tools and their results, and use the concepts associated with ICT systems and technical vocabulary.

Throughout **ALL** assessment tests, students should demonstrate the following:

use of ICT equipment and software autonomously

a consideration of the limitations of ICT tools and information sources, and the results they provide

comparisons of the effectiveness of ICT efficiency with other working methods

use of a range of ICT equipment and software to create good quality presentations for varied audiences

selection of appropriate ICT equipment and software to fulfil the assessment tests

systematic use of appropriate search methods to obtain accurate and relevant information from a range of sources

Initial Steps Modules

Starting with Text (4269)

INTRODUCTION

In this module, students are introduced to text/word processing software to create and edit short pieces of text. The aim is to learn how to input text using the keyboard, to use the mouse to move around within the document and to access features, like print, save and spellcheck. They learn how to save and retrieve documents. They begin to understand how to use the software to improve the accuracy of their work.

LEARNING OBJECTIVES

	Learning Objectives	Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Enter simple words using keyboard or other input device	P	See below	Students can input a short piece of text unaided (20-30 words) – this could be their own original work or copied from text given by you.
2	Select and edit text	P	See below	Students should be able to select words, copy and paste words, delete words, add words and change words or punctuation within the text. To achieve this learning objective, students need to be able to make changes to the text but are not necessarily able to spot errors themselves.
3	Select basic icons (e.g. print, save or spellcheck) using the mouse	P	A printout of their work covering LOs 1 to 3 – which they can use later to check for errors (LO 5)	Students should be confident enough with the software to be able to select icons such as save, print and use the spellchecker (if available) without assistance. This learning objective is concerned with the student's ability to find and select tools rather than knowing how to use them efficiently. However, saving a document with an incorrect filename or selecting an incorrect option from the spellchecker should not disqualify this LO being awarded.
4	Name, save and retrieve documents	M	See below	Students show that they can name and save a document in the appropriate place (e.g. floppy disk or hard disk) and can retrieve it later, without your help, to make changes to it.
5	Use appropriate methods to check text is error free	M	Teacher evidence or printout	Students use a combination of proof reading (on screen or printed) and use spellchecker (if available) to ensure that final text has been checked and corrected without your help.

GETTING STARTED

Any word or text processing software can be used for this module; however it may be beneficial to choose software which is appropriate to the age and abilities of the students, such as children's text processing software like Writer from Black Cat Software or Textease. If using MS Word or the word processor from AppleWorks, it might be useful to change the toolbar options so that icons such as save and print appear as large buttons and the menus and toolbars are limited to those the students will need to use. It may also be useful to change the default font to a large and easy-to-read font type, so that students find it easier to link what they are typing with what they see on screen.

If this is the first module to be taught, students may need plenty of practice to become familiar with the keyboard and mouse, and may benefit from simple guidance about the dos and don'ts of using the computer.

Prior Knowledge	New Words	
• Recognise simple words and characters • Understand the mouse controls the pointer • Write simple sentences • Use full stops and capital letters	• Program • Software • Mouse • Cursor/Pointer • Drag • Screen/monitor • Keys/Keyboard • Select • Space bar • Font	• Edit • Delete • Print/Printer • Icon • Text • Shift • Return/Enter • Backspace • Copy/Cut/Paste • Highlight

ASSESSMENT GUIDELINES

Both Pass and Merit students are required to show that they can enter text and use the software to make changes to the text. However, in addition to this Merit students are required to demonstrate that they can save and retrieve their own work and also show some ability to use the software in conjunction with their own skills to produce work which is mostly error free, without your assistance. Pass students should, on the other hand, be showing competence using the software but may need prompting to spot errors or to retrieve previously stored work.

For assessment of this module, you could provide students with a piece of text to copy with errors included. After entering the text, students could be instructed to change some of the errors within the text. The initial text, along with a printout of the student's work, should then give sufficient evidence for the first three Learning Objectives. Merit students would need to be assessed further, on being able to save and retrieve their work and also on completing some independent error checking by themselves. This could be achieved either by asking them to spot and amend any remaining errors within the original text, or by providing them with a new document which they can retrieve and save as their own, implementing the changes necessary to make it error free.

Starting Images (4270)

INTRODUCTION

This module introduces students to the use of graphics software for creating, editing and saving pictures, by giving them the skills to choose and use a number of simple graphical tools.

Students will learn how to draw and modify simple pictures or patterns, using a combination of lines, simple shapes and fill tools: they will learn to select colours, shapes and line widths from a simple tool palette. They will use select, cut, copy, paste and undo commands to modify their work, and will save the finished picture.

LEARNING OBJECTIVES

	Learning Objectives	Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Use simple shapes and lines to create pictures or patterns	P	See below	Students will not be expected to be able to use the 'curved line' or 'squiggle' tools at this stage. Students are not expected to save their work at Pass level.
2	Edit pictures using visual effects	P	See below	Students should fill at least three of the white spaces with an appropriate tool, such as brush, spray and fill, to create colour effects, line textures or patterns.
3	Add details to an existing picture using straight lines or geometric shapes	P	Printout of picture (and original given to students)	Students are not expected to make major changes, such as adding or deleting a character or object.
4	Copy or delete character or object	M	Printout of final picture	For this level, students should be able to amend the original given picture substantially by selecting a particular object and either deleting it entirely (restoring the background) or copying and pasting it elsewhere in the picture.
5	Use 'save as' to store edited pictures	M	Teacher evidence or printout	The important thing is to demonstrate that the student has been able to save with a new filename.

GETTING STARTED

You will need a graphics package with a range of tools and edit features; Microsoft Paint (usually supplied with the PC) is suitable. Other suitable software includes the 'Paint' package in AppleWorks, Fresco from the BlackCat Supertools package and KidPix Studio from The Learning Company.

For whatever software you use, demonstrate how to use the tools, such as spray, pen, cut and other simple tools and how to use 'undo' or selecting tools to correct a mistake. Show how to use 'save' or 'save as'.

Provide a range of stimulus material and opportunities for students to edit/change pictures and to create their own pictures and designs. (For example, ask students to edit pictures to show/change emotions e.g. happy/sad etc.) Ask students to print out their completed pictures.

It will be helpful to collect a range of children's books with good illustrations, as well as art work from other sources, for students to see and discuss in preparation for making their own pictures.

You will also need to have several prepared files for pupils to modify: these should be simple pictures, with plenty of white space which can be filled in by the student, using the tools they have learned.

Prior Knowledge	New Words	
• Mouse control	• Graphics	• Line
• Select and load software	• Icon	• Texture
	• Pencil tool	• Save as
	• Brush tool	• Select
	• Spray tool	• Undo
	• Fill	• Print

ASSESSMENT GUIDELINES

Students could be asked to draw simple pictures of, for example, a house with two windows and a door (mostly squares/rectangles) or a face or flower (mostly circles/ellipses and some lines). Alternatively, you could ask them to produce a pattern using rows of coloured or patterned squares, circles or rectangles each joined up to the next by a coloured line like a toy snake or caterpillar. (This allows them to select combinations of shapes and fill colours or patterns, and to select line thickness and colour.)

The pictures provided for students to modify should be simple, with plenty of white space for students to fill in, and with opportunities for them to add details to the picture or remove details from it. Keep the demands of the task simple by leaving plenty of space between objects or shapes which you will want students to modify or remove (so that they will not find it too difficult to select the shape or object that they need to edit). At Pass level, students could be asked to add some extra coloured shapes and lines to a pattern or, for example, add a sun to a picture of a house; at Merit level, you might ask students to remove, for example, an object or character and place it somewhere else in the picture.

Starting Graphs (4271)

INTRODUCTION

In this module, students begin to understand how to use ICT to classify information and present their findings in the form of simple charts or graphs. Students start to understand how they can use graphs and charts to answer questions or compare information.

LEARNING OBJECTIVES

	Learning Objectives	Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Store and classify information	P	See below	Students should be able to sort and classify properties of objects, for example eye colour of classmates. They should be able to use ICT to create a tally chart or data table or enter the data into graph/chart software.
2	Present information in charts or graphs	P	Printout of graphs	Students use the information they have entered to create 2 different but simple graphs or charts. The choice of graphs/charts will depend on the software available but could be any of Pie Chart, Bar Chart or Pictogram. It is expected that you will prescribe which data is selected to present in the chart.
3	Use charts or graphs to answer simple questions	P	Students' answers to set questions	Students can answer *specific* simple questions from the graph/chart they have created, e.g. "Which eye colour was the least common?" or "How many girls had brown eyes?" It is important to construct questions so students can make different observations about the data for LO4 below.
4	Draw simple conclusions from charts or graphs	M	Teacher evidence or printout	Students, unprompted by a specific question, can make at least 2 sensible but simple general statements or observations about the data from the graphs they have drawn, e.g. "My charts show that blue is the most common eye colour" or "There is no difference between the eye colours of boys and girls".

GETTING STARTED

Ideally simple graphing or charting software could be used for this module, like First Workshop from Black Cat Software. MS Excel or the spreadsheet from AppleWorks can be used but it might be useful to change the toolbar options so that the icons, like save and print, appear as large buttons and so that the menus and toolbars are limited to those the students will need to use. It may also be useful to change the default font to a large and easy-to-read font type so that students find it easier to link what they are typing with what they see on screen.

Students may need to sort real objects to fully understand how ICT can be used to represent or classify objects; it may be necessary to organise the results into summary tables or tally charts, so that the students can make sense of the information. Students need to be supported when creating graphs or

charts to make sure that sensible graphs/charts are produced. Data sets should be kept small so that students can easily check they have entered data accurately.

Exposure to real life meaningful charts and graphs will help the students to understand why graphs and charts can be useful to answer real questions.

Good practice should be encouraged: for example, checking information for errors, giving charts a title and labelling axes.

When practising what sort of conclusions can be drawn from graphs/charts, students should be encouraged to mention similarities as well as differences and develop an understanding that both are equally important observations.

Prior Knowledge	New Words
• Students can sort objects into groups • Students can use the keyboard and mouse to enter information into the computer • Students can understand simple data organised in a table or tally chart	• Information • Pictogram • Icons • Collect • Sort • Classify • Bar Chart • Graph • Pie Chart • Data

ASSESSMENT GUIDELINES

Both Pass and Merit students should be able to enter some prepared data into a simple graphing software package. They should be able to describe the data they have entered and make statements like "This data shows how many children have different eye colours in our class". All students should be able to use the software to create two different charts from the data they have entered and should be able to answer simple specific questions like "How many boys had brown eyes?" In addition, Merit students need to be able to show that they have an appreciation of what information the chart/s show in a real context, by making at least two sensible general observations/statements from the charts they have created, such as "There is no difference between boys and girls in eye colour" or "Blue is the most common eye colour". Being able to identify and express a general statement (unaided) is a step further for the student than answering specific questions because it implies that the student understands how to interpret what he/she sees in the real context of what the data in the chart/graph is showing, rather than simply being able to read a value from a chart or graph.

A single screen grab or printout of the charts/graphs produced by the students would be sufficient, if the students have written their observations on these before or after printing.

Starting Control (4272)

INTRODUCTION

In this module, students learn to control the actions of a screen turtle by giving a series of instructions and should consider examples of how we can control machines and devices: for example, students and their families control devices by giving them instructions when selecting sweets or a drink from a vending machine, setting a microwave oven to cook some food, or recording a television program using a video recorder.

Students should be given opportunities to consider instructions for a range of activities, not just those involving a screen turtle: for example they might give one another directions for moving from one place to another in the classroom, or using simple maps. Where resources allow, they might also give instructions to control the actions of a floor turtle: in all cases, students should be encouraged to use instructions involving distance and direction, and to predict the consequences of a set of instructions.

LEARNING OBJECTIVES

	Learning Objectives	Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Give a screen turtle a set of instructions	P	Printed copy of task set and screen grab of turtle path	This should be a very simple task requiring only the use of forward and backward moves (or 180 degree turns) and quarter-turns for the first three moves.
2	Record the instructions to the turtle	P	Students' written instructions to the turtle, which can be written on the task sheet or screen grab	Students may need to amend their instructions before writing them down as a set of instructions.
3	Use angles other than 90 or 180 degrees	M	See above	If this is being set as an extension of the Pass task, the turtle path after the first three moves will involve angles such as 60 or 120 degrees.
4	Use at least 5 moves overall	M	See above	

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GETTING STARTED

You will need a simple version of control software, such as LOGO. Several freeware versions of LOGO can be obtained via the internet (e.g. MSW LOGO).

Before you introduce the software:

- spend time on activities involving instructions to get a friend from one place to another in the room, perhaps going around obstacles;

- use board games and floor tiles to convey the notion of spaces and units;

- if one is available, let students drive a remote–controlled toy car around a course;

- if you have a floor turtle, show students how to give it instructions then let them try out their own combinations of distance and direction instructions to see the effect.

Prior Knowledge	New Words
• Demonstrate awareness of simple switches • Understand the terms on and off • Understand forward, back, left, right, turn • Count • Estimate distances • Understand quarter, half and full turns.	• Sequence • Order • Instruction • Screen turtle • Control devices • Commands • Programmable

ASSESSMENT GUIDELINES

As a possible Assessment Activity, students could be asked to draw a route from one named point to another on a simple plan or map. They should then write a set of instructions to make a screen turtle follow the same path.

Students will achieve Pass level if they are able to complete up to this point. In order to achieve Merit level, they must successfully complete the second part of the task, which involves drawing a path from the previous end point to another destination on the plan: this should involve at least two more moves, using angles other than 90 or 180 degrees.

If you provide two separate tasks for Pass and Merit, then make sure that the first three moves of the Merit task still involve turns of only 90 or 180 degrees.

Make sure that the plan you provide for students to work on is very clear, so that students can see the path they need to take and compare distances easily.

Starting Searches (4273)

INTRODUCTION

In this module students are introduced to searching. They use the internet and/or CD ROMs to learn about different ways to access information and they begin to understand how to choose the most appropriate search technique. They understand the difference between menus and indexes and they can recognise and use different kinds of links and buttons.

LEARNING OBJECTIVES

	Learning Objectives	Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Use buttons, menus and indexes to search for and navigate to information	P	See below	Students should be able to recognise and use back and forward buttons, hyperlinks, hot spots, indexes or menus to navigate and find information.
2	Use keywords to search for information	P	See below	You may provide the keywords but students should be able to follow search results to find the information required.
3	Provide evidence of research undertaken	P	A printout of the answers to a set of questions which can include items to cover LOs 1 to 3	Students demonstrate that they can use search techniques to answer questions. The searches should be completed on specified websites or on a CD ROM.
4	Select appropriate keywords	M	See below	Students are able to select their own keywords to find answers to specified questions, by searching for information on a CD ROM or on the Internet. The keywords chosen should enable an efficient and accurate line of enquiry to be followed.
5	Select appropriate results	M	Evidence from the student of the keywords used and the best results of their searches	Students are able to recognise relevant and irrelevant information/links from the results of their searches. They reject the irrelevant information and keep information which is connected to answering their search questions.

GETTING STARTED

Any sources of digital information can be used for this module, such as CD ROMs (like Encarta) or information websites on the Internet. Ideally, a combination of many different sources could be used.

However, if/when using the Internet, it might be better to work within a selected website, so that students are not baffled by masses of inappropriate material. Links to these sites could be placed in a starter page or on the desktop so that students are not required to have skills with the browser software.

If possible, encourage students to find similarities in the way information is organised and accessed in different media. They should compare using ICT based searches to a practical search session using reference books.

Searches for this level should have specific results as an end point (like an answer to a question "When was someone born?"). The questions should be picked to encourage using a range of search techniques and should be easily obtainable from the sources given to the students.

At this level, the students will probably benefit more if the sources are specified. Searching freely on the Internet or using search engines is not recommended for this module.

This module may be linked with other areas of the curriculum such as Science, Geography or Literature because students benefit from having a reason for searching, so providing meaningful and real context is important.

Encourage exploration, experimenting and discussing findings in lessons. Integrate learning from this module into classroom practice as often as possible so that students relate the experiences to everyday situations.

Prior Knowledge	New Words
• Select icons	• Search/search engine
• Recognise an A-Z index and a contents list in a book	• CD ROM
• Know how to use book versions of an encyclopedia (or dictionary)	• Menu
	• Index
	• Keywords
• If the Internet is used for this module, a simple explanation of browser software and how to use it would be appropriate	• Hot link/Hot Spots
	• Hyperlinks
	• Homepage

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ASSESSMENT GUIDELINES

For this module all students should be able to search a CD ROM or website following a straightforward line of enquiry to find answers to specified questions. They can distinguish between and know how to find information using indexes and menus and they know how to perform a keyword search. Merit students, however, are able to search more freely and will create their own keywords to affect searches about a topic. They will also be able to recognise and reject irrelevant or inappropriate results of searches but may keep too many or too much information from the useful results.

To assess this module students can be given a simple worksheet, using vocabulary and language with which they are familiar, with some questions to answer from either a CD ROM or a specified website. The types of searches can be specified, as long as opportunity is given later for the Merit students to find information more freely. Evidence for this would be a completed worksheet. For Merit students, further questions could be asked and they would need to provide both the keywords and the results of their searches, which could be answers to the questions they have been set or further relevant information about a topic.

Starting Email (4274)

INTRODUCTION

In this module, students are introduced to email. The aim is for the students to understand how to use email software to write and send messages and to collect, read and reply to messages. Students start to experience some of the advantages of email, like easy and quick communication and enabling messages to be sent almost immediately over large distances. Students begin to understand the main features of email software.

LEARNING OBJECTIVES

Learning Objectives		Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Create and send email messages	P	You may provide separate printouts for LOs 1 to 3, or one printout which shows an original message, a reply to the student and a further reply from the student.	Students should be able to access the email software and use it to create a new message. They should be able to type in a given email address correctly. They should be able to use the email software to send the message.
2	Reply to email messages	P	See below	Students should be able to use the email software to reply to a message they have received. (This should be achieved by using a reply button rather than re-typing the address.) The subject line will read Re:…
3	Collect and read email messages	P	See below	Students should be able to use the email software to check for new mail. They should be able to identify, access and read new messages. They should be able to understand where to look on the email to find out who sent the mail and what it is about (address and subject lines).
4	Use email folders	M	See below	Students should understand how/where email software stores messages, e.g. the default folders like Inbox, Outbox, Sent folder, Drafts, Trash etc. Students know how/where to find or access stored emails in these folders.
5	Forward email messages and copy to another recipient	M	Printout of email which has been forwarded and copied (This covers LO 4 & 5 if the message to be forwarded and copied is one they have had to retrieve from, for example, their Sent folder.)	Students can use the email software to forward and send a CC (Carbon Copy) email to another recipient. They understand the difference between forward, reply and carbon copy.

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GETTING STARTED

Any email software can be used to complete this module, for example mail software like MS Outlook or Outlook Express or web-based email like Hotmail.

Students are not expected to be able to set up their own email addresses/accounts and, to reduce the work in setting up and managing multiple email addresses, students do not need individual email addresses to complete this module, as long as they have sufficient addresses within a teaching group to be able to send and receive emails. Extra care with the subject line should mean that students can share a single email address successfully.

In order for the students to appreciate the advantages of email communication, it would be useful if some messages could be sent over distance (for example, to a school in another district or country) and for initial classroom practice it would be ideal if students could be given addresses of others in the same group so that replies can be received quickly.

For schools on a network, it may not be obvious to students that an Internet connection is necessary to send and receive mail; this might need to be mentioned so that students do not assume that every machine will send and receive mail without an Internet connection. Conversely, if students are using a machine with a dial-up connection, they may need your assistance to connect and disconnect in order to send and receive emails (students' ability to do this is not assessed in this module). Similarly, the login procedure for different email systems often varies in complexity, some requiring username and password identification. As this is not assessed at this level, students can receive your help to access the email software. However, students are expected to understand that they have an email address which identifies their mailbox (even if this is a shared one).

Setting the 'include message in reply' option in the email software may reduce the burden of printing sequences of emails for assessment and moderation.

Students only need a broad understanding of the email software at this level, so keeping the folders to just the default options like Sent, Inbox, Drafts and Deleted Items/Trash, should make it easier to understand.

Safety notes:

Many schools will have an acceptable user policy regarding email/internet use and students should have this explained at an appropriate level of detail before using email. Similarly, if web-based email is being used, appropriate measures/screening should take place to ensure that unsuitable emails are not accessed by the students.

Prior Knowledge	New Words	
• Are familiar with the conventions used to control computer applications, e.g. pointers and icons	• Email	• Subject line
	• Email address	• Online/offline
	• Connect	• Send
	• Inbox/Outbox/Sent Items	• Receive
	• cc (carbon copy)	• Reply
		• Forward

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ASSESSMENT GUIDELINES

Both Pass and Merit students need to be able to use email software to write, send, receive, read and reply to messages. This includes understanding the key parts of the email message like To, Subject, Message and From. In addition, Merit students are expected to understand a little more about how the email software stores messages in folders like the Inbox, Sent folder and Trash, so that they can find previously stored messages. Merit students are also expected to be able to cc (carbon copy) and Forward messages to other addresses.

On a more general note, Merit students would be expected to complete their emails correctly (including the subject line) and on a first attempt whereas a Pass student might take more than one attempt to get the email address correct or might forget to complete the subject line but still send a successful message.

At this level, it is not expected that any student is able to create or manage their own email account, login with passwords or understand how to connect or disconnect a dial-up connection.

Although it is not assessed discreetly, there is an underlying expectation that all students know that a computer needs to be connected to send and receive email and that emails can be sent over any distance in the same timeframe. All students are also expected to understand that an email address identifies where the mail goes, but unlike written addresses, where a small error in an address might not stop a letter being delivered, a small error in an email address will result in the mail not being sent/received.

To assess this module students could be given a task to write and send a simple email to a given address to ask for some information, like the birthday of the recipient. They wait for and read the reply. They in turn reply giving their birthday.

Merit students could be asked to find their first message (or another) and forward it to another given address and send a cc (carbon copy) to you.

If the 'include message in reply' option has been set in the email software, evidence of the final message in each case (one for Pass and one for Merit) should be sufficient, because this would include/show all the previous messages. This evidence could be in the form of a screen grab, printout or a saved email file produced by you.

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INITIAL STEPS LEARNING OBJECTIVES RECORD SHEET

Student Name……………………………………….…

Students must achieve *all* Pass Learning Objectives to gain a Pass.
Students must achieve *all* Pass *and* Merit Learning Objectives to gain a Merit.

For an explanation of each Learning Objective, please see the Amplification section of the relevant module.

Stage 1

Student was able to:	Pass/ Merit	Please Tick
Starting with Text (4269)		
Enter simple words using keyboard or other input device	P	
Select and edit text	P	
Select basic icons (e.g. print, save or spellcheck) using the mouse	P	
Name, save and retrieve documents	M	
Use appropriate methods to check text is error free	M	
Date of Assessment		

Starting Images (4270)		
Use simple shapes and lines to create pictures or patterns	P	
Edit pictures using visual effects	P	
Add details to an existing picture using straight lines or geometric shapes	P	
Add or delete character or object	M	
Use 'save as' to store edited pictures	M	
Date of Assessment		

Starting Graphs (4271)		
Store and classify information	P	
Present information in charts or graphs	P	
Use charts or graphs to answer simple questions	P	
Draw simple conclusions from charts or graphs	M	
Date of assessment		

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Stage 2

Starting Control (4272)		
Give a screen turtle a set of instructions	P	
Record the instructions to the turtle	P	
Use angles other than 90 or 180 degrees	M	
Use at least 5 moves overall	M	
Date of Assessment		

Starting Searches (4273)		
Use buttons, menus and indexes to search for and navigate to information	P	
Use keywords to search for information	P	
Provide evidence of research undertaken	P	
Select appropriate keywords	M	
Select appropriate results	M	
Date of Assessment		

Starting Email (4274)		
Create and send email messages	P	
Reply to email messages	P	
Collect and read email messages	P	
Use email folders	M	
Forward email messages and copy to another recipient	M	
Date of Assessment		

Please sign and date this form when the student has demonstrated through an assessment test that he/she can achieve the Learning Objectives of each module at Pass or Merit level without any additional assistance.

Tutor……………………………………………………………

Date………………………………………………………….

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Next Steps Modules

Exploring Documents (4278)

INTRODUCTION

In this module, students begin to expand their word processing skills, so that they are able to add images to documents, change the style, size or colour of text and begin to understand how to arrange items on the page. They can use the software to refine their work and they start to understand how they can alter the look of a document so that it can be made appropriate to a particular audience. They know how to save and retrieve their work. They understand how to use the software to improve the accuracy and quality of their work.

LEARNING OBJECTIVES

	Learning Objectives	Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Create and amend a text document	P	See below	Students should be able to input a few paragraphs of text and use the software confidently to make amendments to words or phrases (the work may contain a small number of errors). Students can save and print their document.
2	Amend text for a specific audience	P	See below	Students should be able to change the look of the text, including font style, size and colour to make it suit a specific audience. The changes to make can be specified in the assessment.
3	Add images or other objects to a document	P	Printout of document	Students should be able to insert an image (or other object, like a chart) into an appropriate place within a document. They are not expected to be able to manage text wrapping but they should be in control of where the image is placed.
4	Refine and organise the layout of a document for a specific audience	M	See below	Students work on the whole document and re-organise the contents and/or change formatting so that it is more suitable for its target audience. The changes they make should not be specified in the assessment, but the content they have been given should lend itself to reorganisation and refinement. Students should be able to spot and correct errors.
5	Evaluate a finished document	M	Teacher evidence or printout	Students should be able to evaluate their own work and judge suitability for a specific audience, whether the layout is clear, or why they have chosen certain options within the document.

GETTING STARTED

Any word or text processing software can be used for this module; however it may be beneficial to choose software which is appropriate to the age and abilities of the students, such as children's text processing software like Writer from Black Cat Software or Textease. If using MS Word or the word processor from AppleWorks, it might be useful to change the toolbar options so that icons such as save and print appear as large buttons and the menus and toolbars are limited to those the students will need to use. It may also be useful to change the default font to a large and easy to read font type so that students find it easier to link what they are typing with what they see on screen.

Making students aware of the white space left on a page is a good way to start them thinking about page design and to encourage them to experiment with the layout of items on the page.

Students will be more likely to appreciate how to make a document appealing to a particular audience if they understand the needs of the audience they are given. For example, they will be able to understand easily how font size and colour could be altered to suit young children, whereas they might find it difficult to know how to make a document look 'professional'.

Practising producing documents with a different look and feel then discussing what sort of things make the document good for different purposes will help the students to understand how to create different looks, as well as being able to physically make the changes. Developing these discussions will also help students understand how to evaluate their work.

Prior Knowledge	New Words
• Type simple sentences • Use full stops and capital letters • Complements and extends 'Starting with Text'	• Audience • Insert • Proofread • Format • Save as

ASSESSMENT GUIDELINES

Both Pass and Merit students are required to show that they can enter text and use the software to make changes to the text and to insert images. All students are expected at this level to be able to save, retrieve and print their work. However, in addition to this, Merit students are required to demonstrate that they can refine the way the text and images appear on the page to make the document more appealing and appropriate for its audience. Merit students should also be able to talk or write about their choices in the way the document looks. For example, "I have made the title bold and centred it so that it stands out. I think this makes the document easier to read." All students should be able to produce documents which are mostly error free.

For assessment of this module, you could provide students with a piece of text to copy (around 100 words: two or three paragraphs or a poem with several verses). The paragraphs could be in the wrong order, and there could be a few deliberate errors included, so that students are encouraged to check their work for spelling and other errors. After entering the text, students could be instructed to amend the size, colour and style of the font, so that it looks better for its audience (the document could be a poem for children, in which case large text and bold colours and an easy to read font would be ideal).

Students could then be asked to insert an image (or images) which has been prepared for the document (so that time is not lost during the assessment searching for suitable pictures). The image could relate to a particular part of the text so that students can demonstrate they are in control of where the image/s is placed. Merit students would need to be assessed further, on being able to refine the way their document looks, rearranging the text and images so that the document looks good and better suits its audience. Merit students should also be able to evaluate their document, for example, being able to talk or write about the choices they have made and why that makes their document better or worse.

Exploring Images (4279)

INTRODUCTION

In this module, students develop their skills in creating and developing pictures and designs, using a variety of graphical tools and saving their outcomes in digital form.

Students should be given opportunities to import and edit images from a range of sources – such as clipart, graphics packages and, if available, scanners or digital cameras – and use these to create their own designs. In doing this, they will be expected to create repeating patterns or effects (such as texture, mosaic and tile) by using stamps and/or copy tools. They will need to use a variety of brush sizes, shapes and effects and to create patterns using the symmetry tool (flip vertically/horizontally, rotate). They will also need to be able to select appropriate areas of an image, copy and re-size them.

LEARNING OBJECTIVES

	Learning Objectives	Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Create repeating patterns using stamps and/or copy tools	P	See below	The picture or design should include image/s imported from at least one of the following sources: clipart, internet, scanned image, digital camera image or another saved image source. The repeating pattern can be created by using stamps or by copying images imported into the picture.
2	Create pictures using a variety of tools and effects	P	Printout of picture or design	Students use at least three different tools, including the symmetry tool, and two different brush sizes/effects.
3	Select appropriate objects, copy and re-size them	M	See below	Students select, copy and resize object/s to add to the design or picture. They save draft versions to show the changes they have made (for LO4).
4	Save drafts showing the development of the design	M	At least two saved and printed versions of the work, showing the development from first to final draft	It would help if students were told to include the phrase 'version1/2/3' or 'first/next/final draft' as appropriate when saving their work.

GETTING STARTED

You will need a graphics package with a range of tools and edit features, ideally including symmetry tools and different brush sizes or effects. The Drawing tools within Microsoft Word would be sufficient for this module.

Other suitable software includes Painter, the 'Paint' package in AppleWorks, KidPix Studio and Fresco from the BlackCat Supertools package.

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You will also need a resource bank of images. These could be from a clipart pack, or using images which you have prepared using a scanner or digital camera, or you could direct students to a suitable source on the internet. The important factor here is that students must bring in images from other sources.

If you can also provide a scanner and/or a digital camera for students to use then this will be a much richer experience for them, but it is not necessary for completion of the module.

Provide a range of stimulus material, such as wrapping paper with repeating patterns, posters and advertisements from magazines. You will also find it helpful to have a bank of suitable images for students to import and work with. Demonstrate the use of the appropriate new tools and commands using images from the resource bank, and ask students to use these to create their own designs.

If you have a scanner, provide examples of art work using scanned images and demonstrate how to use a scanner, then ask students to use scanned images in their own designs.

If you have a digital camera, demonstrate how to use the camera and how digital images can be imported and edited, then ask students to use an image they have taken with the camera in a simple design.

Prior Knowledge	New Words	
• Complements and extends 'Starting Images'	• Crop	• Export
	• Resize	• Scanner
	• Scale	• Digital camera
	• Brush	• Horizontal
	• Import	• Vertical

ASSESSMENT GUIDELINES

Students could be asked to create a design for a particular theme such as 'Autumn', or 'Sports' or 'Happiness'. This would give them the opportunity to use scanned images (e.g. leaves for 'Autumn', clipart or digital photos for 'Sports'). It is helpful to choose a title or theme which will not only allow students opportunities to use rotations or reflections as part of their design, but will also encourage it. The examples you provide for students to discuss and work on during the module are very important in preparing them for assessment. You can help by giving them a wide variety of sample material illustrating the use of relevant tools and techniques.

Exploring Spreadsheets (4280)

INTRODUCTION

In this module, students are introduced to spreadsheet software. They learn to enter data, text and formulae into cells. They can copy data, replicate formulae and they understand that spreadsheets carry out calculations automatically. They can use spreadsheet software to create graphs or charts. They begin to understand the power of spreadsheets for modelling situations and how data and formulae can be modified to test out predictions or work out what happens when something is changed.

LEARNING OBJECTIVES

	Learning Objectives	Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Enter labels and numbers into a spreadsheet	P	See below	Students 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 which students have to add items to.
2	Enter and copy simple formulae	P	See below	Students should be able to enter simple formulae like =A1+A2. They should be able to use the SUM function to total a range of cells. They should be able to copy a formula to another location. The assessment may prescribe which formulae to put where.
3	Create a graph	P	Printout(s) of completed spreadsheet with graph and formulae displayed	Students can select a given range of data and use it to create an appropriate graph. Students give the graph a meaningful title but the axes may not be labelled or referenced correctly.
4	Modify data	M	See below	Students are given some data to change in their spreadsheet (which will affect both data and formulae). Students manage to change the data and make appropriate checks to make sure that their spreadsheet still works.
5	Use a spreadsheet to answer a modelled scenario ('what if')	M	Printout of the student's answer to the modelled scenario and the modified spreadsheet	Students need to demonstrate an understanding of the effect of changing data and 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 student being able to make the changes while LO5 is about the student's understanding of the implications of those changes, e.g. using the ability to change or modify a spreadsheet to answer questions.

GETTING STARTED

Any spreadsheet software can be used to deliver this module including MS Excel or the spreadsheet from AppleWorks.

Students will need to understand the layout and features of a spreadsheet and how to move around and enter text and data into cells. Students may be given partially prepared spreadsheets.

As a matter of good practice, students should be encouraged to use titles/labels to describe the data in the rows and columns of the spreadsheet.

Students will benefit from practising on spreadsheets which have a meaningful context. It is advisable to explain fully what information a spreadsheet displays, as this is not always obvious to a student. Encouraging students to discuss with each other what a particular formula is doing will help them to understand the spreadsheet they are creating.

Students may need some extra support when creating formulae. They may also benefit from understanding how formulae change when they are copied to a new location. Students can be shown the 'show formulae option' to assist in checking formulae.

This module can be linked with other subjects like Mathematics, where, for example, spreadsheets can be used for solving formulae by trial and error.

You should encourage students to test their spreadsheets and check their formulae.

Prior Knowledge	New Words	
• Basic mathematical knowledge for formulae	• Spreadsheet	• Columns
• Ability to copy and paste	• Cell	• Replicate
• Ability to use the keyboard to enter text and data efficiently	• Formulae	• Data
• Ability to retrieve stored work	• Sum	• Model
• Complements and extends 'Starting Graphs'	• Calculate	• 'What if' *
	• Rows	• Total
	* This does **not** refer to the IF Function	

ASSESSMENT GUIDELINES

Both Pass and Merit students should be able to enter text, data and simple formulae into cells to complete a spreadsheet with a good level of accuracy. They can copy data and formulae to new locations. They should understand what the spreadsheet shows and be able to produce a graph or chart of a selected range of data. In addition, Merit students should be able to modify both data and formulae to change what the spreadsheet shows. They should be able to modify the spreadsheet to answer questions of the type "What if…", for example, "What if 10 more people go on the trip, how much

will the new total be?". Merit students are expected to be more aware of the accuracy of their spreadsheet and will check for errors or ask for help to correct them.

For assessment of this module, students can be provided with a partially completed spreadsheet for a real-life situation, such as the items and costs of food and drinks for a class party. Students can enter the remaining data and formulae to complete the spreadsheet. They can produce a graph which shows some information from the spreadsheet. Merit students can be asked to predict the effects of changing one aspect of the spreadsheet and then test out their prediction. Evidence can be in the form of screen shots or printouts of the completed spreadsheets (one for Pass level and a further one showing changes made for Merit would be sufficient).

Exploring Databases (4281)

INTRODUCTION

Students will already have carried out searches for information for their work in the Initial Steps module, 'Starting Searches'. In this module, students will learn about the usefulness and basic structure of databases, how to enter and edit data in databases, and how to use them to search for and sort information.

In working on this module, students ought to have experience of the kinds of data entry they will meet in the real world, i.e. 'forced choice', using button selection or drop-down menus, as well as 'open' entry, where any text or numeric field values may be keyed in. (In using Internet-based databases to find information, students will encounter such 'drop-down' menus as well as being asked to provide key words or phrases. Experience of varied forms of data entry will also help students who progress to designing databases in the On Track module 'Databases for a Purpose'.)

Real databases may contain a lot of information and, although it is not assessed specifically in this module, students should be shown how bar charts and pie charts can help us to understand some of the key features or patterns in this information more effectively than looking at lists of values.

LEARNING OBJECTIVES

	Learning Objectives	Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Add new records to a data file	P	Printout of additional records, with errors identified by you	Students can enter numeric and text data into a database with a predetermined structure, making no more than 3 errors in entering 5 additional records.
2	Identify field types	P	Written answers by student	Students can identify at least 2 different field types in the database.
3	Use 'equals', 'more than' and 'less than' in searches	P	Written answers by student	In order for this to be feasible, in a database of twenty records, the result of such a search should be no more than three records for a question of the type "Which characters have height greater than x metres?"
4	Re-phrase a given question in terms of search criteria	M	Printout or screenshot of search criteria used	Students answer a real-life question from their databases by turning their questions into suitable database search criteria.
5	Interpret data	M	Copy of question and student's answer to it	Students should give a written description of the results of sorting and searching data in response to a question. The answer is likely to be one or two sentences, plus a short list giving relevant values if appropriate.

GETTING STARTED

You will need a database package with a range of tools and edit features. Suitable software includes Microsoft Access (i.e. database from Microsoft Office/Works suite), the database from AppleWorks or an educational software database such as Information Workshop from the BlackCat Toolbox or Textease.

You will also need to provide a prepared database, ready for students to add files and edit records.

In this age group, many students are interested in electronic games and card collecting, and both these kinds of activity involve information about various key features or qualities of characters. Suitable collections of cards could provide an interesting starting point, allowing students to use 'real objects' (i.e. the cards) to look at grouping, sorting, and classifying before they move on to a database. They will also begin to realise how much easier it is to find information when it is organised by agreed features (i.e. fields and field values).

Alternatively, you could get the class to add to a database about their hobbies or favourite books, about the performance of sports teams or one based on the characters of a popular story or television series.

It is important for students to have readily accessible sources of information to complete the database, and for them to find the subject matter interesting, so that entering data does not become a chore.

For students to be able to turn real-life questions into search criteria for retrieving information from a database, they will benefit from practice and from seeing examples of how real-life databases are used. For example, how does the school librarian find out whether a book is loaned out or who has borrowed it?

Prior Knowledge	New Words	
• Search using keywords	• Database	• Query
	• Field	• INCLUDES
	• Record	• AND
	• File	• OR
	• Sort	• NOT
	• Order	• Subset

ASSESSMENT GUIDELINES

Choose a new subject for a database, so that students have to use their skills in entering data in the correct field, searching and presenting information, and cannot simply work 'by rote'. You will need to choose a subject with a minimum of six field names. Some of these fields should have yes/no values; some could have up to six pre-set values. The data should be suitable to ask a range of questions, so that sufficient evidence can be generated for all the Learning Objectives.

Some database packages make it easy to view and enter all the information in a table format (like a spreadsheet) rather than using a data entry (record card) layout for each record. When providing a database for students to use in the assessment of search skills, make sure that it is large enough to ensure that students would be unlikely to identify all relevant records/field values simply by looking at all the records without carrying out appropriate sort or search commands first.

All students are expected to be able to recognise different field types, enter new records and search for specific information from within the database. In addition to this, Merit students are expected to be able to answer real-life questions from a database by turning these into suitable search criteria and interpreting the results they retrieve.

Make sure that questions for Merit students will generate usable results. Most of the student's effort in carrying out the task should be in formulating appropriate search criteria, rather than writing down (or printing out) lengthy reports on the results of searches.

Exploring Control (4282)

INTRODUCTION

This module builds on the Initial Steps module 'Starting Control'. In this module, students will use the programming language LOGO to control a screen turtle. They will write simple instructions and sets of procedures using standard commands and the repeat function.

In working on this module, students have the opportunity to develop both ICT and mathematical concepts. They should begin to see how simple sets of instructions can be combined to produce outcomes such as shapes, or even simple pictures. They will have the experience of 'teaching' the computer new words (i.e. the procedures) defined by the students themselves.

LEARNING OBJECTIVES

	Learning Objectives	Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Write a list of commands to produce a simple picture or design	P	See below	Students 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.
2	Use repeat commands	P	See below	
3	Create complex shapes with varied angles	M	See below	The instructions should also include varied angles (e.g. a pattern of up to 3 triangles repeated to form the corners of a square).
4	Name and run a procedure	M	Printout of the student's instructions and finished shape will provide evidence of all of the Learning Objectives LO1 – LO4	

GETTING STARTED

You will need LOGO software which includes the commands 'clear', 'penup', 'pendown', allows a turtle to rotate 360 degrees and allows the results to be printed out.

If resources allow, a floor turtle is also useful, but alternatively you could give instructions to a member of the class. You will also need to provide worksheets of sequences, graph paper and set squares/protractors for students to try out ideas on paper. Give students experience of writing instructions for people or floor turtles and drawing simple shapes on paper before they attempt similar shapes/instructions on screen.

You will need to teach students how to clear the screen and to use the penup/pendown commands before they can draw some letters or shapes.

Give plenty of opportunities for students to see how changing numbers in the commands affects the final path of the screen turtle. Provide a worksheet with simple repeat sequences and ask the students to predict what shapes will be produced. Set simple challenges such as 'draw a square, then draw a smaller square next to it'.

Merit students will also need to learn how to use repeats and the correct form of brackets before learning how to create a procedure.

Prior Knowledge	New Words
• Complements and extends 'Starting Control' • Know that degrees measure turns and that 90, 180 and 360 are one quarter, half and full turns	• Procedure • Repeat • Penup • Pendown • Clear

ASSESSMENT GUIDELINES

Both Pass and Merit students need to show that they are able to write instructions and produce simple shapes in LOGO. All students also need to be able to use the repeat command.

In addition to this Merit students need to be able to use a wider variety of instructions, like varied angles combined with repeats to create more complex shapes. Merit students are also expected to be able to write and use simple procedures.

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Exploring the Internet (4283)

INTRODUCTION

In this module students build on their searching skills so that they are able to make use of the Internet for information gathering. They also learn how to use standard features of browser software in order to help collect, store and retrieve information. Students should be able to recognise links and navigation options on a web page and be able to use them to find the information they need. The aim is to give students sufficient skills to be able to use the Internet safely and efficiently for simple information gathering. Students should be starting to identify by themselves which search results are useful and which should be rejected.

LEARNING OBJECTIVES

	Learning Objectives	Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Use Internet tools to find information	P	See below	Students are able to use a web browser and one or more search engines to retrieve information. They should be able to filter information, for example by country, and refine their searches to find relevant material.
2	Evaluate relevance and usefulness of material	P	See below	Students 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.
3	Store and retrieve information	P	See below	Students 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. •They are able to use the browser software to print a web page. •They are able to bookmark a site and view it later.
4	Copy and paste information from a website	P	A completed question sheet from the student or printed copy of student research, annotated by you to provide evidence for all criteria	Students are able to use the browser software to select, copy and paste useful text into another software package or document.
5	Save URLs and objects from a website	M	See below	Students are able to use copy/paste to copy URLs into another document or email. Students are able to save single objects like images from a web page for their own use.
6	Use extended search skills	M	Students create a short document or email, including 2 or 3 of the best results of their search, a copied link and an image. Evidence could be a printed copy of this document or saved email file.	Students 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.

GETTING STARTED

Any browser software can be used for this module, student machines will also need to have connection to the Internet. A text application of some sort like Notepad or Word is also required so that students can copy and paste their search results into a document.

Students should understand how the Internet functions, so that they can appreciate things like how URLs work as addresses and why some information may not be useful or trustworthy.

For schools on a network, it may not be obvious to students that an Internet connection is active when they are using the Internet and this might need to be mentioned so that students do not assume that every machine will be able to connect to the Internet automatically. Conversely, if students are using a machine with a dial-up connection, they may need your assistance to connect and disconnect in order to work on the Internet (students' ability to do this is not assessed in this module).

This module may be linked with other areas of the curriculum such as Science, Geography or Literature because students benefit from having a reason for searching, so providing meaningful and real context is important.

Search engines can be difficult to use if a topic or question is ambiguous or has several different interpretations - 'surfing' can mean surfing a web page or surfing on a surfboard! Care should, therefore, be taken with research topics so that students do not have to sift through too many irrelevant items before they find good information. You could try out various ideas first and see which topics produce fairly simple lines of enquiry from the search engine they will be using. Students are not being assessed on their ability to generate their own lines of enquiry, so the questions and research topics should not be too open-ended, students need to be clear about the information they are looking for. It is their ability to find and use relevant information which is more important at this level. However, you should encourage exploration, experimentation and the discussion of findings in lessons.

Copyright issues:

This will vary from country to country but students should be made aware, at an appropriate level of detail, of any ruling which may affect what they are able to copy and how they can use it. Students should also be encouraged not to plagiarise whole portions of text which they have gathered from the internet – but to rephrase in their own words.

Safety notes:

Many schools will have an acceptable user policy regarding internet use and students should have this explained at an appropriate level of detail before using the Internet. Similarly, appropriate screening/ filtering should take place to ensure that unsuitable sites are not accessed by the students.

Prior Knowledge	New Words
• Copy and paste • Recognise and use navigation options on web pages, like hyperlinks • Complements and extends 'Starting Searches'	• search engine • internet • www • URL • bookmark • FAQ

ASSESSMENT GUIDELINES

Both Pass and Merit students are required to show that they can use browser software and navigation options on web pages to view information on the Internet. They should also be able to use the browser software to store, retrieve and print useful pages for future use. They should also be able to copy and paste selected portions of text into another document. Students should be able to experiment with keywords when using a search engine to find information and should also be able to spot useless information and reject it. However they may keep more information than they need.

Merit students are able to work independently to collate results of a search in a separate document; they have the beginnings of an organised method of working, but may have too much information, and it may not be reworded or fully organised. Merit students are also expected to be able to copy links from web pages and save objects like images for their own use.

For assessment of this module, you could suggest a general research topic like volcanoes as the theme. Skills in LO1 could be assessed by asking the students to answer questions from a link to a specific website on volcanoes. A further question could provide evidence for LO2 and the results could be saved, bookmarked or printed with a small excerpt of text being copied to another document.

The assessment can be quite open, in which case you might have to validate that all the Learning Objectives have been satisfied, or the questions can be quite prescriptive to cover each skill. For example, requiring a particular website to be bookmarked, in which case the student's completed answer sheet would provide all the evidence required (as long as all the objectives were covered).

For Merit students, a further task requiring the students to collect some extra information on the topic and find a picture would be necessary. Students would be expected to copy/paste the best results of their search and the image into another document and this would provide the evidence for LO5 and LO6.

Exploring Email (4284)

INTRODUCTION

In this module, students become more familiar with email. They learn how to extend the use of email by sending and receiving attachments. They also learn more about the email software by learning how to use the address book and manage folders to store emails. At this level, students should be able to recognise the difference between web-based and ISP-hosted email and feel confident to send and receive emails using either.

LEARNING OBJECTIVES

	Learning Objectives	Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Compose, edit, read and respond to emails	P	See below	Students 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, like copy, paste, delete, and spellchecker (if appropriate) to edit or refine their messages.
2	Add addresses to the Address Book	P	Printout or screenshot of address book showing new addresses	Students can add new email addresses to their Address Book.
3	Use the Address Book to send copies, blind copies and forward emails	P	See below	Students understand the difference between cc, bc 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 address/es they have added in LO2.)
4	View an attachment	P	Printout of attachment as evidence of having been able to view it successfully or content of email reply will verify that attachment has been viewed	Students 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. The student could be asked to reply to the mail answering something about the contents of the attachment as evidence of having viewed it.
5	Add an attachment to an email	M	Evidence of attachment could be in a printout of an email showing attached file or icon in the header	Students attach an image or document file to an email. The students 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.

6	Manage email folders	M	Screen shots showing new folder and contents	Students 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 – students are not expected to set up mail rules.

GETTING STARTED

Any email software can be used to complete this module, for example mail software like MS Outlook or Outlook Express or web-based email like Hotmail. However, the software needs to have a simple Address Book facility.

Ideally each student will need to have their own email address/account to complete this module. However, students are not expected to be able to set up their own email addresses/accounts.

In order for the students to appreciate the advantages of email communication, it would be useful if some messages could be sent over distance (for example, to a school in another district or country) and, for initial classroom practice, it would be ideal if students could be given addresses of others in the same group so that replies can be received quickly.

For schools on a network, it may not be obvious to students that an Internet connection is necessary to send and receive email; this might need to be mentioned so that students do not assume that every machine will send and receive email without an Internet connection. Conversely, if students are using a machine with a dial-up connection, they may need your assistance to connect and disconnect in order to send and receive emails (students' ability to do this is not assessed in this module). However, students are expected to be able to complete any login procedure by themselves.

Setting the 'include message in reply' option in the email software may reduce the burden of printing sequences of emails for assessment and moderation.

At this level, all students should understand the two main possibilities for email (ISP-hosted and web-based) and, if possible, students should be given experience of or information about both.

<u>Safety notes:</u>

Many schools will have an acceptable user policy regarding email/Internet use and students should have this explained, at an appropriate level of detail, before using email. Similarly, if web-based email is being used, appropriate measures/screening should take place to ensure that unsuitable emails are not accessed by the students.

Prior Knowledge	New Words	
- Understand that email is a component part of the Internet - Complements and extends 'Starting Email'	- Web mail - ISP Hosted mail - Mailbox - Attachment - Folder	- Online/offline - Address Book - bc (blind copy)

ASSESSMENT GUIDELINES

Both Pass and Merit students need to be able to use email software to write, send, receive, read, reply to, cc, and forward email messages. This includes understanding the key parts of the email message like To, Subject, Message and From. They should also be able to use the text tools in the email software to edit and refine their emails. They are expected to understand where/how the email software stores messages in folders like the Inbox, Sent folder and Trash, so that they can find previously stored messages. All students should also be able to add an address to their Address Book and open an attachment they receive with an email. In addition to this, Merit students should be able to add an attachment. They should also be starting to understand how to manage their mailbox by being able to create new folders and move mail into them.

On a more general note, Merit students would be expected to work independently to complete their emails correctly (including the subject line) and use the text tools to refine their messages. A Pass student should know how to use these tools but may be unable to spot errors or refinements.

At this level, it is not expected that any students are able to create their own email accounts but they are expected to be able to login with passwords if necessary.

Although it is not assessed discreetly, there is an underlying expectation that all students would know that a computer needs to be connected to send and receive email and that emails can be sent over any distance in the same time-frame. All students are also expected to understand that an email address identifies where the mail goes, but unlike written addresses, where a small error in an address might not stop a letter being delivered, a small error in an email address will result in the mail not being sent/received.

To assess this module, students could be given a task to write and send a simple email to a given address to ask a survey question like how long it takes them to get to school. They read the reply and add the address of the sender to their Address Book. They can then forward and cc this email to other members of the group and send a bc to you. A message from you could then include a graph of another similar survey – they could use all this information to produce a summary email which they could send to you.

Merit students could be asked to attach and send a further graph or summary document to an email. They could then create a new folder in Sent items called Work and move the message into it.

If the 'include message in reply' option has been set in the email software, evidence of the final message in each case should be sufficient, because this would include/show all the previous messages. This evidence could be in the form of a screen grab, printout or a saved email file produced by you. For Merit students to show that LO5 and LO6 have been achieved, a screen grab of the new folder and its contents (showing an attachment) would be sufficient.

Exploring Multimedia (4285)

INTRODUCTION

This module aims to introduce students to multimedia authoring software. The aim is to produce a short presentation for a specific audience, recognising the need for good page design and clarity.

The presentation should cover a particular theme and contain both text and images. It should be intended for access by individuals who will navigate through the slides at their own speed and be offered choices throughout, via hotspots or buttons.

LEARNING OBJECTIVES

	Learning Objectives	Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Create a page of text, images and sounds which are activated by appropriately named and positioned buttons	P	See below	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 this will need to be written on the printout next to the objects.
2	Use effective page design	P	See below	Avoid overcrowding of text; employ suitable fonts, text size and position for purpose; choose readable combination of text and background colour.
3	Organise screens and identify appropriate choices and links	P	Final printout of slides	The student is able to link at least 3 slides in an organised way.
4	Create pages which offer the user options	M	See above	There should be a choice of routes through the presentation, not simply a linear one.
5	Demonstrate how the presentation meets the needs of the intended audience	M	Teacher evidence or printout	Students must be able to identify at least two elements of the presentation (content, language, layout, colour, style etc.) which address a particular need.

GETTING STARTED

The most common software package for this module would be Microsoft PowerPoint, although presentation software from AppleWorks, Black Cat Slide Show, Textease Presenter and Hyperstudio are also suitable.

You may also want to encourage students to use some of the following if they are available, but they are not essential:

- Microphone

- Scanner

- Digital camera

You will need to gather a collection of images from the Internet, clipart, scanner etc. The emphasis of this module is on using text, images and sounds in a presentation rather than on gathering those resources.

It would be useful to look at some sample presentations and discuss how a user might navigate through them. Students should consider different page layout/design: draw attention to how changing the font and text size can change the effect of text; what colour combinations of text and background work well?

Introduce the use of storyboarding and get students to plan out in rough form what they are going to do before they open the multimedia application. It may be helpful to use a separate card/sheet of paper for each page or screen, so that they can physically change the order or change the content of a page.

Encourage students to check that their hyperlinks and buttons work as intended. It is easier to get this stage right if students leave it until the later stages of constructing the presentation (students should decide the final version of links and routes through the presentation before they insert hyperlinks).

Students will find the idea of adapting their presentation to a particular audience easier if:

(a) they have spent time discussing in class how/what features in sample presentations made them particularly suitable for their purpose and audience

(b) the target audience is familiar to them e.g. parents, other children

Prior Knowledge	New Words
• Writing for an audience • General word processing and page design skills • Image manipulation	• Interactive • Non-linear • Hot spot/hyperlink • Hypertext • Navigation • Storyboarding

ASSESSMENT GUIDELINES

Choose a theme (e.g. the Romans) and ask students to create a presentation for a particular audience (e.g. parents at an Open Evening, a younger child). Limit the number of slides they can use and encourage them to use a similar colour scheme throughout. You will need to provide them with a resource bank of pictures, sound and text files which they can select from and use in their presentation: they should not have to search elsewhere during the Assessment Activity.

At Pass level, students should be able to produce three linked slides with text, images and sound. They should also be able at this level to arrange the items well on the page and be able to link the pages in an organised, if simple, way.

At Merit level students should include links which allow the user to choose their route through the presentation, rather than simply going on to the next slide. Students at Merit level should be able to give a written or spoken description, identifying at least two things they have modified to meet the needs of the audience better.

NEXT STEPS LEARNING OBJECTIVES RECORD SHEET

Student Name…………………………………………

Students must achieve *all* Pass Learning Objectives to gain a Pass.
Students must achieve *all* Pass *and* Merit Learning Objectives to gain a Merit.

For an explanation of each Learning Objective, please see the Amplification section of the relevant module.

Stage 1

Student was able to:	Pass/ Merit	Please Tick
Exploring Documents (4278)		
Create and amend a text document	P	
Amend text for a specific audience	P	
Add images or other objects to a document	P	
Refine and organise the layout of a document for a specific audience	M	
Evaluate a finished document	M	
Date of Assessment		

Exploring Images (4279)		
Create repeating patterns using stamps and/or copy tools	P	
Create pictures using a variety of tools and effects	P	
Select appropriate objects, copy and re-size them	M	
Save drafts showing the development of the design	M	
Date of Assessment		

Exploring Spreadsheets (4280)		
Enter labels and numbers into a spreadsheet	P	
Enter and copy simple formulae	P	
Create a graph	P	
Modify data	M	
Use a spreadsheet to answer a modelled scenario ('what if')	M	
Date of Assessment		

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Exploring Databases (4281)		
Add new records to a data file	P	
Identify field types	P	
Use 'equals', 'more than' and 'less than' in searches	P	
Re-phrase a given question in terms of search criteria	M	
Interpret data	M	
Date of Assessment		

Stage 2

Exploring Control (4282)		
Write a list of commands to produce a simple picture or design	P	
Use repeat commands	P	
Create complex shapes with varied angles	M	
Name and run a procedure	M	
Date of Assessment		

Exploring the Internet (4283)		
Use Internet tools to find information	P	
Evaluate relevance and usefulness of material	P	
Store and retrieve information	P	
Copy and paste information from a website	P	
Save URLs and objects from a website	M	
Use extended search skills	M	
Date of Assessment		

Exploring Email (4284)		
Compose, edit, read and respond to emails	P	
Add addresses to the Address Book	P	
Use the Address Book to send copies, blind copies and forward emails	P	
View an attachment	P	
Add an attachment to an email	M	
Manage email folders	M	
Date of Assessment		

Exploring Multimedia (4285)		
Create a page of text, images and sounds which are activated by appropriately named and positioned buttons	P	
Use effective page design	P	
Organise screens and identify appropriate choices and links	P	
Create pages which offer the user options	M	
Demonstrate how the presentation meets the needs of the intended audience	M	
Date of Assessment		

Please sign and date this form when the student has demonstrated through an assessment test that he/she can achieve the Learning Objectives of each module at Pass or Merit level without any additional assistance.

Tutor……………………………………………………………

Date…………………………………………………………….

On Track Modules

Documents for a Purpose (4289)

INTRODUCTION

In this module, students are expanding their word processing skills and building on skills developed in 'Exploring Documents', so that they can create documents for many purposes. They are able to use the software to change the look of the text, add tables and amend the page layout, including the way images are displayed in the document. They also learn how to make changes to the document as a whole, including adjusting margins, adding page numbering or adjusting whether the page appears in landscape or portrait layout. They understand how to use the word processing software to edit a document to make it more suitable for its purpose.

LEARNING OBJECTIVES

	Learning objectives	Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Create and format text which is suitable for a particular purpose	P	See below	Students can apply a range of formatting options, such as bold, italic and underline, as well as being able to amend font type and colour, to highlight key points or titles within the text and make the document suitable for its purpose. Students should also be demonstrating an ability to change the look of text/passages within a document to make it more appropriate for its meaning.
2	Adjust properties to allow graphics or other objects to fit well within the document	P	See below	Students can use text wrap, image/object size, cropping or positioning options so that images or other objects are placed appropriately in the document. Students should be demonstrating an ability to be in control of how objects look and are placed within the text.
3	Insert table into document	P	Students produce a printout of their document which shows how they have used tables, graphics and formatting on the text to make it appropriate for its purpose	Students manage to insert a table within the document.
4	Use advanced formatting features	M	See below	Students use bullet points, numbering, lists or tabs to add extra definition to their document.

5	Use page formatting options	M	Students produce a printout of their document which shows how they have used tables and graphics and have formatted the page and the text to make it appropriate for its purpose	Students are able to change page layout (portrait to landscape or adjust margins) and add page numbers or other items to the header or footer of the document.
6	Adjust page formatting for a specific audience	M	Teacher evidence or printout	Students are able to justify (at least verbally – if not in writing) the choices they have made when formatting their document to make it appealing to its target audience.

GETTING STARTED

Any word or text processing software can be used for this module e.g. Microsoft Word or the word processor from AppleWorks. You will need appropriate images for the students to insert into their documents which may be from CD ROM, clipart file, or created for the purpose by use of a scanner or digital camera. A colour printer would be useful to print final documents, but it is not essential.

Making students aware of the white space left on a page is a good way to get students thinking about page design and to encourage students to experiment with the layout of items on the page. Experimenting with the effect of different wrapping options on images is a good way to learn how to manage the white space more effectively.

Students will be more likely to appreciate how to make a document appealing to a particular audience if they understand the needs of the audience they are given. For example, they will be able to understand easily how font size and colour could be altered to suit young children, whereas they might find it difficult to know how to make a document look 'professional'. Although the text does not need to be written by the student, it can be useful to discuss how text is worded and detail is varied for different audiences. They should appreciate that text content, together with the formatting options which they can apply, make a document appeal to its intended audience. Looking at different styles of books is a good way to compare and contrast the different techniques and also encourages the students to think of the different audience types.

If the students are able to practise creating a variety of documents which benefit from different page layouts and different text arrangements like bulleted lists or tables (instruction sheets, menus or programmes for events, for example), this will help them understand the benefit of the new features they are learning. Also, writing and printing longer documents will help the students to realise the benefits of features like page numbering or adding their name to the header or footer of a document.

By practising producing documents with a different look and feel, then discussing what sort of things make the document appropriate for different purposes will help the students to understand how to create different looks, as well as being able to physically make the changes. Developing these discussions will also help students understand how to evaluate their work.

When working with images and tables in a document, it is useful to get the students to ensure that text flow (wrapping) around an object is a property of the object, not the text, and that different objects can be treated in different ways depending on what they want to achieve.

When working with longer documents, it may be useful to produce an unformatted text file for the students to start from, containing the majority of text for amendment as necessary.

Prior Knowledge	New Words	
• Complements and extends 'Exploring Documents'	• Line spacing • Margins – left, right, top and bottom • Text wrap • Justify text • Align left, right, centre • Lists	• Re-size/scale • Crop • Table • Page set-up • Header/Footer • Bullets • Tab

ASSESSMENT GUIDELINES

Both Pass and Merit students will need to be able to produce a document which contains both image and table objects. They need to be able to demonstrate that they are in control of the placement of these objects and the text within the document. They should also be aware of the text wrapping options for objects, so that they are able to make choices about how objects and text appear within the document. All students should be able to produce a document which is suitable for its purpose and be able to edit the document, proof read or use the spellchecker to produce a document which is mostly error free.

In addition, Merit students should be able to add further formatting to the text, such as bullet points or numbered lists. They should also be able to demonstrate an ability to apply changes to the whole document, such as altering page orientation, margin size, or adding a header/footer and page numbering. Overall a Merit student should be able to use the word processing software confidently to produce documents which show an awareness of how information is placed within a document and how this can make a document better suited for its purpose. Merit students should be able to use the software to experiment freely with the look of a document to make it better suited to its purpose.

To assess this module, the students could create an information page, for example, about a country or favourite animal. The main content of the text could be saved and given to them as an unformatted text file to copy and paste into their document. Ideally, the text should require some changes and additions to be made to it, so that the students get an opportunity to show that they can proof read, spellcheck, add and edit text well. Students could then be asked to add an image (this should be provided to save assessment time being wasted looking for an image) and insert a table (the table could be details of population and climate for the country or height, length, weight and speed characteristics of the animal). Pass students would then need to amend the look of the text and arrangement of the objects and text within the document to make it suitable for its purpose, e.g. a reference sheet for other students.

(The assessment should be worded or set up in such a way that text wrapping options are required for either the table or the image.)

Merit students could then be given some additional information about a second country or animal to include in their document. They could also be asked to create a summary sentence at the beginning of the document with either a numbered or bulleted list stating which countries or animals are included. They should also be required to change the page orientation (to landscape) and arrange the information so that it suits this layout better. They could also be asked to include page numbers and/or their name in either the header or footer of the document. Merit students should be able to write or talk to you about their work and explain the choices they have made when creating their document, which make it suitable for its purpose.

Multimedia for a Purpose (4290)

INTRODUCTION

This module builds on work in Next Steps module 'Exploring Multimedia' using multimedia authoring software. The aim is to create an automated presentation for a target audience, incorporating transition and simple animation.

Whilst working on this module, students should be encouraged to find or create appropriate resources and to consider appropriate use of transitions and timings. They should consider how well the presentation fits its purpose and the needs of the target audience.

LEARNING OBJECTIVES

	Learning Objectives	Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Create a plan for a presentation	P	See below	The order in which the slides will be viewed should be clear from the printout.
2	Recognise and select appropriate source materials	P	See below	Students select materials which are relevant and which demonstrate some awareness of the needs of the target audience.
3	Incorporate transition and animation	P	See below	The information on effects used should be included as annotations of the relevant slide.
4	Incorporate timings, audio and 'build' effects	M	Final printout of slides, plus written comments on effects used	This is best presented as a 'script' for each slide, clearly identifying when each effect begins, what it is and how long it lasts.
5	Demonstrate a clear sense of audience and purpose	M	Final printout, plus written description	The overall effect of the presentation matches its stated purpose and intended audience. Students provide a short written description explaining how their choice of material, effects and structure are appropriate to the audience and purpose of the presentation.

GETTING STARTED

The most common software package for this module would be Microsoft PowerPoint, although the presentation software in AppleWorks, Black Cat Slide Show, Textease Presenter and Hyperstudio are also suitable.

You may also want to encourage students to use some of the following, if they are available, but they are not essential:

- Microphone

- Scanner

- Digital camera

- Digital video camera or web camera (plus supporting software to enable editing and viewing).

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You will need to provide a suitable bank of resources from which students can select materials, such as clipart, CD ROMs, curriculum materials.

You will also find it useful to provide sample presentations for students to discuss: Who is the presentation intended for? Does it 'work' well? What features are good/bad/distracting?

You could start the module by asking students to create a storyboard to describe how to carry out an everyday activity, such as making a favourite food. When they have created the basic slides, show them how to use animations and transitions. Give time for students to experiment with these effects in the presentation and in other multimedia presentations they have constructed previously (or which you have provided for them).

At this stage, you may need to offer some guidance to avoid over-enthusiastic use of effects.

Demonstrate how to control timings and introduce other effects: students will need time to experiment, not only with timings within individual slides, but also on the overall timing given to each slide. They will need to think about how long it might take an adult or a child to read a piece of information or an instruction, before an animation or sound is activated, for example.

Prior Knowledge	New Words
• Complements and extends 'Exploring Multimedia'	• Transition • Slide view • Outline view • Automated presentation • Animation

ASSESSMENT GUIDELINES

Ask students to create an automated presentation, to teach about a particular topic or to explain how to do something e.g. a topic/practical skill from a recent curriculum activity.

You could allow students to choose from a list of topics and target audiences, but make sure that all the topics are well-defined and not too ambitious.

Make sure that there are plenty of suitable resources for students to choose from in creating their presentation.

At Pass level, students should be able to produce an automated presentation incorporating images, transitions and animation (such as 'fly in from left'). The material selected should be appropriate even if the timings are not.

At Merit level, students should include appropriate timing and effects. (This will be evident from their written description for each slide). They should be able to give a written description, referring to their choices of layout, timing, effects, images etc. to explain how these fit the purpose and target audience. (The description does not need to cover all aspects of the presentation – three or four points should demonstrate this clearly.)

Spreadsheets for a Purpose (4291)

INTRODUCTION

In this module, students use spreadsheet software to create a working spreadsheet with a clear purpose. Students work methodically through a design and development process, being able to test, correct and modify the spreadsheet as they progress. They are able to create a final spreadsheet which suits its purpose and is presented in an appropriate way for its audience. They begin to understand how to evaluate their work and can assess how well their spreadsheet meets it objectives.

LEARNING OBJECTIVES

	Learning Objectives	Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Design a spreadsheet with a specific purpose	P	Teacher evidence or printout	Students are able to design a spreadsheet to model a real-life scenario – for example, researching which bike to purchase. They are able to talk or write about what the objective of the spreadsheet is and how their spreadsheet will help them meet that objective. They understand enough about the data and formulae they need to include in the spreadsheet to make a start on it.
2	Create the spreadsheet	P	See below	Students enter data, text and formulae to create their spreadsheet. They are able to make modifications to their design to make it work.
3	Test the spreadsheet	P	Printout of spreadsheet with formulae showing	Students are able to test their spreadsheet to check for errors and see that formulae are correct. They make any corrections required to create an accurate spreadsheet with very few errors.
4	Modify the spreadsheet to make it suitable for its purpose	M	See below	Depending on the purpose of the spreadsheet, students should be able to make the spreadsheet user friendly – e.g. good use of titles and formatting OR presenting the results of the spreadsheet in a way that is easy to understand by using appropriate graphs or charts.
5	Evaluate the spreadsheet	M	Printout of spreadsheet (not displaying formulae) with modifications made (LO4) and student's comments (LO5)	Students can evaluate how well their spreadsheet manages to suit its purpose. They are able to make suggestions for improvements or give reasons for modifications they have already made.

GETTING STARTED

Any spreadsheet software can be used to deliver this module including MS Excel or the spreadsheet from AppleWorks.

Students should already know how to create a working spreadsheet and this module is concerned with their ability to create a spreadsheet for a purpose. It can be a big leap for students to go from following instructions to designing and creating something by themselves and they will need to build up a number of skills to be able to do this. Students can find it difficult to be creative and to keep their ideas within their skills with the software. Practice and your guidance are essential so that students learn how to have ideas for spreadsheets which are achievable. You can help by providing tasks which are not too open-ended and which provide the student with easy options for spreadsheets. The process the students go through is complex, so the scenario (design brief) doesn't need to be. A simple working spreadsheet which suits its objective well and allows the student to fulfil all the LOs is better than a complex idea which the student finds difficult to create without support.

Although it is not essential for the assessment of this module, students may need to have knowledge of a wider range of functions to use within their spreadsheets. It would, therefore, be beneficial while practising to incorporate new functions into a relevant context, so that students can extend the possibilities for their spreadsheet design.

Students need to learn how to design, test and evaluate their spreadsheets and may benefit from working with some formal design, evaluation and testing methods which could be provided by you or created by the group during lessons.

Prior Knowledge	New Words	
• Complements and extends 'Starting Graphs' and 'Exploring Spreadsheets'	• Design Brief	• Evaluate
	• Model	• Scenario
	• Test	
	• System Design	

ASSESSMENT GUIDELINES

Both Pass and Merit students should be able to design and create a working spreadsheet to suit a particular scenario or design brief. They should be able to test their spreadsheet to make sure that it works. In addition, Merit students should be able to further modify their design to make it more user friendly or to present the findings of the spreadsheet in an appropriate way. Merit students should also be able to evaluate their work in relation to how well it achieves its objectives.

For assessment of this module, you need to present the students with a design brief or scenario which will allow the students to design spreadsheets within their ability and understanding, for example, a spreadsheet to work out which bike to buy.

Evidence should be in the form of before and after spreadsheets showing evidence of modifications and could also include test and/or evaluation sheets from the student or their printouts could be annotated as evidence for evaluation.

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Databases for a Purpose (4292)

INTRODUCTION

In this module, students use the knowledge and skills developed during Next Steps module 'Exploring Databases' and apply it to designing and implementing their own database. In doing this, they will need to consider how databases are used in the real world, and consider the features of a good database.

The aim is to allow students to demonstrate that they can consider what features are needed to make a useful database. This includes consideration of how the database will be used, who can enter information and who can access it. Although it is not specifically assessed in this module, students should be aware that real databases may use many other means of data entry, e.g. barcode scanners. They should be able to give examples and talk about the advantages of different methods.

LEARNING OBJECTIVES

	Learning Objectives	Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Identify a purpose for a database	P	Written description	Student identifies who is going to use the database, the overall purpose of the database and how it will be used.
2	Design, create and develop a database for a specific purpose	P	See below	Student creates a simple database, identifying an appropriate (not necessarily exhaustive) list of fieldnames. The student produces a simple data entry form to collect their data, so that a small number of records can be added to their database.
3	Utilise different field types	P	Printout which shows evidence of handling different types of data – e.g. data entry form with yes/no field or database screen grab showing dropdown lists	The student should be aware that different types of data may benefit from being handled differently. They can show this either in data entry forms or in how they set up the field types in their database. Example: students choose an appropriate format (text, number, yes/no, dropdown list) for each field.
4	Test database	M	Teacher evidence or printout	The student needs to demonstrate to you that the database works as expected. The student should be able to describe to you 2-3 tests to be run, and you should verify whether the tests provided the correct information in each case.
5	Demonstrate an awareness of data security	M	Written description of security measures	Students show a basic understanding of how different users might need to see different information from within their database. They should also understand fundamentals of data security e.g. that only authorised people should be able to change data and that passwords might be needed to allow different levels of access e.g. for viewing or editing.
6	Transfer data between applications	M	Printouts showing original document and document including imported information	Data imported from/exported to other associated software packages e.g. spreadsheet/word processing package.

GETTING STARTED

You will need to provide:

- Database software, such as Microsoft Access, the database from AppleWorks or a commercial database such as FileMaker Pro. There are also database packages designed for use in schools, which would be suitable;

- Samples of questionnaires and real-life data collection forms;

- Reference materials for students to use in building their own databases.

It will be helpful to introduce the module by getting students to think about the different databases they have already encountered, or might do soon as adult citizens and consumers. For example, membership of a club, health records, customer surveys etc. – all these involve the collection of data on individuals and its entry into a database. Perhaps they have wanted to buy a particular item and have searched through catalogues, either in book form or online; perhaps their family has been trying to select a holiday, or book a train journey or tickets for a concert – these activities also involve the use of databases. Which databases have been easier to use and what has made some databases harder to use?

Show students how to create a form for collecting their data. The form does not have to be created within the database software and can be created in, for example, a word processor or even by hand. Students should be thinking about how to collect data efficiently and accurately rather than on using complex form creation options or software.

When designing their database, it is important for students to try to identify all the questions they will want to answer and so identify the full range of fields before they open the database application. (For example, in most databases surname and first name are two separate fields; addresses are easier to sort for mailing lists, e.g. on a membership/customer database, if each line of the address has a separate field, and so on).

Some professional database software (like MS Access) will have many more features, and a more complicated user interface than the students are required to use for this module, so care should be taken to limit the functionality so that the Learning Objectives can be achieved without students becoming confused by tools and options which are not necessary. For example, it is not a requirement of this module that students can produce a database with multiple tables or create queries or reports from within the database software.

Prior Knowledge	New Words	
• Data entry	• Flat file database	• Report
• Simple database structure	• Distributed database	• Verification
• Search criteria	• Field type/format	• Validation
• Complements and extends 'Exploring Databases'	• Browse mode/layout mode	• Import/export data
	• Form	
	• Query	

ASSESSMENT GUIDELINES

Both Pass and Merit students are required to show that they can identify the users of a database, the purpose of the database and some of the key questions the database will be used to answer. They must also be able to design and implement a suitable simple database by selecting appropriate fields and deciding how field values will be entered.

However, in addition to this, Merit students are required to demonstrate that they can check the performance of their database and also show some appreciation of security issues. Merit students are also required to show that they can export information from their database into another application.

A possible Assessment Activity might be to design and construct a membership database for a new sports club. This would allow students to use their own experience in a sports club to be able to create a database with a suitable range of different fields. For Merit students, data transfer out of the database into another application might include simply creating a new members list in Word for the club notice board; creating a useful chart in Excel or something more complex like a mail-merge letter to members to tell them of upcoming events.

Control for a Purpose (4293)

INTRODUCTION

This module builds on the Next Steps module, 'Exploring Control', and develops the use of sequences of instructions to control devices. In this module, students will use a control box connected to a computer to write sequences of instructions which will control more than one output device, and will build sequences of events to solve a problem.

Students will need to consider examples of real life control systems, and should evaluate systems – including their own control solutions – identifying limitations. When working on this module, the sequence Plan – Test – Modify is very important. Students should be encouraged to check control sequences for errors, both by 'proofreading' procedures and trialling them with real input data. Wherever possible, students' experience should be broadened to include control and monitoring applications which may be used in other subject areas – for example, automatic weather stations, datalogging equipment, computerised lathes.

LEARNING OBJECTIVES

	Learning Objectives	Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Design a control system	P	Written description of design problem and completed solution (with appropriate labelled diagrams) plus printout of procedure	This needs 1-2 paragraphs and/or labelled diagrams describing the sequence of events. This will be a basic rather than a full or sophisticated solution.
2	Build a sequence of events to activate multiple devices concurrently	P	See below	The outputs are activated by the appropriate input(s).
3	Correct and improve procedures	M	As above, but also description of first attempt at a solution to the task, plus printout of initial procedure and at least one intermediate version, identifying problems and attempts to correct them, along with a printout of the modified procedure	There must be evidence of trialling and attempted correction of problems. The final product must meet the specification but does not have to be the optimal solution.
4	Evaluate the system, identifying limitations	M	Written statement (1-2 paragraphs) identifying the limitations of the control system in its final form	The limitations will depend on the control software and hardware used, as well as on the construction demands of the project. The evaluation should include a comparison with how a 'real' system would behave.

GETTING STARTED

You will need a Control kit with a computer interface, or computer control simulation software, which allows students to write control procedures. It must include a range of input devices/sensors and output devices; it must be able to handle data from at least two input devices and control at least two output devices simultaneously.

This is probably best tackled using a combined construction and control system kit, so as to reduce the construction skill demands. The module is about the use of monitoring and control rather than the ability to build realistic working models, but it will be more enjoyable for students if they can produce a working model.

Get students to consider some real life control systems and identify the stages, e.g. what makes an automatic kettle, water heater or heating system switch on or off? What kind of input devices does the system use? What output devices does it need? What is the sequence of events?

Students will need to think out the sequence of events they need before they try to write procedures. Look at a range of automated processes, and draw attention to the kinds of input that might be used e.g. a car park entry system might be activated by movement (via a sensor), by a push button, or by a password. Introduce the use of a flowchart and ask students to construct flowcharts for some 'simple' control systems, such as a lift: what has to happen before a lift can go up or down?

Get students to begin by writing simple control sequences and progress to more complex instructions and procedures, e.g.

Make a lamp flash or a motor turn, then

Make a buzzer sound when the temperature sensor is 'warm', then

Make the buzzer sound when the temperature sensor is 'warm' AND a slide switch is 'on', then

Write a control sequence for a set of traffic lights or to turn an appliance on and off at set times of the day or to run a fairground/theme park ride safely.

In real systems, safety is a vital feature, so students should be encouraged to check for errors in the procedure and carry out test runs at each stage of recreating and refining a control system. Students should also consider when and how an operator might be able to override the control system.

Prior Knowledge	New Words	
• Assumes that students understand procedures • Complements and extends 'Starting Control' and 'Exploring Control'	• Switch off • Switch on • Wait • Run • Activator • Loop	• Feedback • Data capture • Analogue • Digital • Interface • Flowchart

ASSESSMENT GUIDELINES

For a Pass, students should be able to produce a basic working solution, but do not have to demonstrate trialling or refinement of the solution. For a Merit, students would need to demonstrate several stages of refinement of the solution, rather than perfection, and should be able to describe the limitations of the control system. The solution should include some attempt to consider safety features, but does not need to identify all possible problems.

In choosing an assessment task, ensure that the situation and problem will be readily understood by all students - they should all understand what the system is meant to do.

Try to provide a design brief which makes a range of solutions possible.

Also remember that the Assessment Criteria are about the fitness of the control system for its purpose, not the student's ability to build a model.

Examples of possible assessment activities are: a packing system which needs boxes to be loaded with a fixed number of items before being moved off; a carousel; a ferris wheel. All of these allow the possibility of increasingly sophisticated solutions.

Website Design for a Purpose (4294)

INTRODUCTION

In this module, students are introduced to web page design. They learn how to create a simple series of connected web pages, incorporating links to other pages and to other websites, creating some basic navigation through their pages. They are able to select and arrange images and text on the pages so that they are appropriate to a particular audience and give the content some simple organisation. They understand the basics of HTML coding. The aim is that the students begin to understand some of the differences between web pages and other documents and start to think how to present content in a suitable way.

LEARNING OBJECTIVES

	Learning Objectives	Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Create a series of connected web pages	P	See below	Students should be able to organise text into a series of 2 or 3 web pages. Students know how to save their pages so that they can be viewed as HTML.
2	Include links	P	See below	Students provide working links to and from all of their web pages. Students also include links to other websites. The links should be easily identifiable and placed sensibly within the pages but there is no expectation for a navigation menu at this level.
3	Insert images	P	A screen shot of the web pages or a single saved web page (representative of all the criteria)	Students are able to insert images into their web pages. They should be of an appropriate size and quality and students should be able to demonstrate that they are in control of where the images are placed.
4	Demonstrate user awareness	M	Screen shot or saved web page showing changes/ refinement made for this learning objective	Students test their site (the 2 or 3 pages from LO1-3) and make refinements to the navigation options to make it more user friendly or more appealing to the target audience. They demonstrate some idea of consistent navigation (e.g. a very simple navigation menu) and of consistency in content presentation between the pages. They change font or page formatting to make it more suited to their audience.
5	Recognise HTML code	M	If the student has created WebPages with HTML code then no further evidence required. Otherwise a printout of the source code of one of the web pages identifying/ describing at least 2 of the tags is required	They are able to identify some basic HTML tags in the source code for a web page OR they are able to create a very simple web page using HTML code.

GETTING STARTED

Any simple web page design software can be used for this module, for example Front Page Express. MS Word can also be used by selecting the 'Save as web page' option – but may require some extra explanation about the source code it generates (because it is very complex). You should also show students what works and what does not in web pages (because, unlike web design software, MS Word will allow you to create things and then change them afterwards when you save as HTML).

It is also possible to deliver this module just using Notepad (by saving as xxx.html) because only a small number of simple HTML tags are required to achieve all the Learning Objectives.

The web pages created do not have to be published on the Internet – this is not assessed in this module.

Students can be given the content – they do not have to create it – but it should be given to them in such a way that they cannot simply do a save as HMTL from the documents they are given.

Designing for a purpose is easiest if the audience plus the objective is very clearly defined and is something that the students are likely to understand. For example, students could not be expected to know what sort of features to include in a website for a professional business audience but could be expected to know how to make web pages appealing to students of their own age of for small children.

Students would also benefit from doing some simple website criticism for example, by finding good sites and bad sites and trying to look at which things work well.

Image sizing and quality for the web can be a complex area which is not covered in the module. However, students are expected to be able to select images of the right size and quality for their purpose. They could either collect these from the internet, or select from a range provided by you. There is no necessity for students to create the images themselves.

Even simple navigation can get complicated when there are several pages linked together and so there should be encouragement to test all links.

Students should be encouraged to create simple sites which work well and suit their purpose, rather than complicated sites which do not work properly and have too much going on to be efficient for their purpose.

Prior Knowledge	New Words
• 'Exploring the Internet' module • Some awareness of how to make documents suitable for an audience	• Hyperlinks • Anchors • HTML • Tags • Source Code • Image quality • Image size

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ASSESSMENT GUIDELINES

Both Pass and Merit students need to be able to create a short series of linked web pages in which they have demonstrated an ability to organise text, images and links to suit its purpose and to make it function as a simple website. In addition, Merit students need to be able to show they have a deeper understanding of the way web pages are constructed by being able to recognise some basic HTML tags. Merit students also need to be able to work independently to test and refine their work to make it more suited to its purpose.

For assessment of this module, students could be given some snippets of text from a newspaper about a topic of interest like a local theatre event – they could then use this information to create some pages of information about the event. You could provide images for students to select from and students could find web links to other similar events or to the theatre company to include in the web pages.

For Pass students, a screen shot of the web pages or a single saved web page would be sufficient evidence if all criteria are demonstrated and the web page is a fair representation of the other pages.

For Merit students, evidence of refinements and changes to web pages to make them more suited to their purpose would be necessary. A screen shot or saved web page showing changes from previous (Pass) printout would be sufficient. If the students have written the pages using HTML code then no further evidence would be required. However if the students have used web design software, a printout of some source code annotated by the student identifying at least two of the tags would be required.

Networks for a Purpose (4295)

INTRODUCTION

In this module, students are introduced to networks. The aim of the module is for students to become familiar with what makes up a network and understand a little about their purpose. They look at simple network design and begin to understand how networks can be managed efficiently.

LEARNING OBJECTIVES

	Learning Objectives	Pass/Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Design a simple network	P	See below	Students can create a design for a simple network, for example, a small home network. Students should be able to produce a system which has all the relevant items connected in a meaningful way and they have made an attempt to show how the system could connect to the Internet.
2	Identify the purpose and components of a network	P	Paper-base or printed network diagram	Students add an index to their design which describes each component of their network and its function.
3	Demonstrate understanding of management issues associated with networks	M	See below	Students can list 2 or 3 management tasks for their network with explanations of why they are important.
4	Understand network security issues	M	Completed Answer sheet for LO3 and LO4 or annotations on the system diagram	Students can describe some security measures that would be appropriate to implement for their network.

GETTING STARTED

Students can use pen and paper to design their networks or create their diagrams in another application. There are also specialist software programs which are suitable for design such as Visio.

If the network diagrams are to be created electronically then careful choice of software will make this task easier – creating complex drawings in word processing software can be a difficult task.

Having symbols for the network components available on a disk or stored on the school network would be useful.

If appropriate, give the students a guided tour of the school network or, if this is too complex, use a computer room or a simple network model of some sort. Students will benefit from seeing simple network diagrams for real-life networks and by seeing lots of examples.

Students should be informed of a range of management and security issues relating to networks, such as: updates to software; virus protection; user names; regular back-ups; passwords for Internet dial-up; training the users.

Prior Knowledge	New Words	
• Recognise and identify hardware • Understand some simple reasons for connecting machines into a network	• LAN • WAN • Node • Switch • Hub • Router	• Wireless • UTP • Jack • File server • Modem • Bandwidth

ASSESSMENT GUIDELINES

Both Pass and Merit students will need to be able to design a simple network; they should produce a simple schematic of the network naming each component and its function. They can describe, in simple terms, how the network functions.

For assessment of this module students could design a home network, including a specified list of hardware and with a view to fulfilling the requirements the family might have for the network. Students could then suggest appropriate management tasks and security measures which relate specifically to this network. Evidence would be in the form of a network diagram with an index explaining all the components and their function. For Merit students, this should also include notes to cover LO3 and LO4.

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Video or Animation for a Purpose (4296)

INTRODUCTION

In this module, students are introduced to either video editing or animation software. The aim is to demonstrate to pupils that both animation and video can be produced, edited and applied with the aid of computer software and hardware. By the end of the module, students should have created a finished animation or piece of film with a specific audience in mind.

LEARNING OBJECTIVES

	Learning Objectives	Pass/ Merit	Assessment Evidence	Amplification of Assessment Criteria
1	Create a plan for video or animation	P	Simple storyboard (can be hand-drawn)	Students must plan their video or animation on paper initially and limit their work to within the capability of the technology available to them.
2	Create source material for video or animation	P	See below	**Video:** this will involve filming, showing an awareness of the effect of focusing, zooming and the speed at which the camera is moved (to compensate for blurred images). Recorded footage will then need to be downloaded onto the computer. **Animation:** students can create or adapt an appropriate picture, considering size, shape and colour. The picture needs to be saved either on a disk or the hard drive for later retrieval.
3	Produce video or animation with appropriate software	P	Final video or animation (saved to CD ROM or floppy disk)	**Video:** students need to be able to make informed decisions to remove certain pieces of footage and to order the clips according to their plan. **Animation:** students should be able to use appropriate software to amend and alter the picture for different frames of the animation. The animation should include at least 5 frames. The software can be used to produce middle movements, e.g. tweening, but the students must have manually created at least 3 of the frames themselves by editing their original picture.
4	Add soundtrack or narration to video or animation	M	See above	**Video:** students should be confident enough with the software to add a piece of appropriate music, or recorded narration, over the top of their film. **Animation:** if no additional software is available, music or narration could be demonstrated in a presentation to class (including audio on a CD or cassette player), with you providing the evidence for assessment.
5	Demonstrate awareness of how the finished media text addresses a specific audience	M	Teacher evidence or printout	

GETTING STARTED

As an introduction to this module, it would be beneficial for students to explore web sites and CD ROMs, considering how they use video and animation to demonstrate ideas, give further information and develop aesthetics. You will need to demonstrate to the students how to create a simple animation or download and edit a piece of video. Any video editing or animation creation software could be used to deliver this module. However, straightforward software such as Windows MovieMaker (Windows XP) and GIF animator are good examples of these. Macromedia Flash or other software which creates simple flash animations (e.g. Coffeecup Firestarter) may also be used. If digital cameras are not available, effective results can be achieved with a simple webcam.

Prior Knowledge	New Words		
• Can use a simple Paint Package • Complements and extends 'Exploring Images' and 'Exploring Multimedia'	• Animation • Footage • Edit • Media Player File	• Preview • Focus • Download • Insert	• Frame • Tween

You should encourage the students to keep their ideas for videos or animations very simple so that they are achievable with the software available without too much effort from the student. This module is about the process the students go through rather than how complicated they make the final video or animation. The module is about utilising and controlling the software (and/or hardware) to achieve a fairly simple end point rather than the student's ability to use complicated professional products.

ASSESSMENT GUIDELINES

It is important to limit the scope of this task according to the time and resources available. A very effective simple animation can be created with a freeware GIF animator, although for Centres with video hardware and editing software, this module would be a useful introduction to video production work, which can be used in a number of subject areas. Showing examples of work from other students would be particularly helpful. Students must show that they can plan on paper before using the technology.

Pass students should be showing competence using both software and hardware but may not be able to solve all the problems they encounter. Merit students will be able to show that they can create a multimedia text for a particular audience and will be able to enhance their production with a music soundtrack or narrative.

You may have to split this assessment into smaller sessions for logistical reasons (time of filming, availability of editing facilities, etc.).

ON TRACK LEARNING OBJECTIVES RECORD SHEET

Student Name…………………………………………

Students must achieve *all* Pass Learning Objectives to gain a Pass.
Students must achieve *all* Pass *and* Merit Learning Objectives to gain a Merit.

For an explanation of each Learning Objective, please see the Amplification section of the relevant module.

Stage 1

Student was able to:	Pass/ Merit	Please Tick
Documents for a Purpose (4289)		
Create and format text which is suitable for a particular purpose	P	
Adjust properties to allow graphics or other objects to fit well within the document	P	
Insert table into document	P	
Use advanced formatting features	M	
Use page formatting options	M	
Adjust page formatting for a specific audience	M	
Date of Assessment		

Multimedia for a Purpose (4290)		
Create a plan for a presentation	P	
Recognise and select appropriate source materials	P	
Incorporate transition and animation	P	
Incorporate timings, audio and 'build' effects	M	
Demonstrate a clear sense of audience and purpose	M	
Date of Assessment		

Spreadsheets for a Purpose (4291)		
Design a spreadsheet with a specific purpose	P	
Create the spreadsheet	P	
Test the spreadsheet	P	
Modify the spreadsheet to make it suitable for its purpose	M	
Evaluate the spreadsheet	M	
Date of Assessment		

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Databases for a Purpose (4292)		
Identify a purpose for a database	P	
Design, create and develop a database for a specific purpose	P	
Utilise different field types	P	
Test database	M	
Demonstrate an awareness of data security	M	
Transfer data between applications	M	
Date of Assessment		

Stage 2

Control for a Purpose (4293)		
Design a control system	P	
Build a sequence of events to activate multiple devices concurrently	P	
Correct and improve procedures	M	
Evaluate the system, identifying limitations	M	
Date of Assessment		

Website Design for a Purpose (4294)		
Create a series of connected web pages	P	
Include links	P	
Insert images	P	
Demonstrate user awareness	M	
Recognise HTML code	M	
Date of Assessment		

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Networks for a Purpose (4295)		
Design a simple network	P	
Identify the purpose and components of a network	P	
Demonstrate understanding of management issues associated with networks	M	
Understand network security issues	M	
Date of Assessment		

Video or Animation for a Purpose (4296)		
Create a plan for video or animation	P	
Create source material for video or animation	P	
Produce video or animation with appropriate software	P	
Add soundtrack or narration to video or animation	M	
Demonstrate awareness of how the finished media text addresses a specific audience	M	
Date of Assessment		

Please sign and date this form when the student has demonstrated through an assessment test that he/she can achieve the Learning Objectives of each module at Pass or Merit level without any additional assistance.

Tutor………………………………………………………………

Date……………………………………………………………….

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SECTION 4: ASSESSMENT PROCEDURES

4.1   Assessment Tests

The assessments, created by the teacher or CIE ICT Starters assessment tests, (see 2.2) must be completed within the suggested time scales, under supervised and controlled conditions. To conform with safe working practices in using display screen equipment, it is recommended that candidates be allowed to take short approved breaks from working at their screen (5-10 minutes every hour, if appropriate), without leaving the assessment room. Such breaks may naturally form part of the working pattern as students study the assessment test material. The Centre is responsible for maintaining security during such break periods.

The assessment tests must be completed under supervised and controlled conditions. It is possible to carry out the assessment during normal timetabled periods during the normal working day, as long as all procedures are followed.

During the assessments, candidates are not permitted access to their own files. No tuition can be given after the candidate has commenced the assessment.

4.2   Preparation for Assessment Tests

Before using an assessment test, tutors must work through it using similar hardware and software to that used by the candidates, to:

ensure the hardware/software at the Centre will enable the candidates to achieve all the Learning Objectives;

ensure the terminology will be understood by their candidates;

ensure other necessary resources (raw data, graphics etc.) are available for candidates, in order that the activity can be carried out under controlled conditions.

Any requests for special assessment requirements should be put in writing to CIE at least two months prior to the planned date for assessment.

4.3   Administering the Assessment

Centres are responsible for ensuring that the hardware and software to be used by candidates is in full working order and will enable them to fulfil all the Learning Objectives of the module as specified in this syllabus. Errors as a result of faulty software or hardware will not be taken into consideration during the appeals procedures. In the event of a system crash, power cut or damage to equipment during the assessment, candidates may be allowed a fresh attempt at the assessment test.

Centres should ensure that stationery is available to their candidates. Candidates can use dictionaries, spellcheckers, their own notes, Centre-prepared manuals on the software package, manufacturers' manuals or the software's Help function during assessment. No other help can be given to candidates during the assessment, unless there is an equipment failure.

Tutors will need to observe certain Learning Objectives within the modules, such as 'Save data'. Where appropriate, this can be done by checking the candidates' files after the assessment has been

completed or during the assessment tests. This must be recorded on the Learning Objectives Record Sheet and signed by the tutor. The Learning Objectives Record Sheet should be submitted together with the candidates' completed printouts (i.e. evidence of the assessment test) to CIE for moderation. Each printout should include the candidate's name and the date on which the assignment was carried out.

4.4 Security issues

The tutor, or another suitably competent individual appointed by the Centre, must be present throughout to supervise the assessment.

Candidates must not communicate with one another in any way and security of the individual candidate's files must be ensured. They cannot ask for, or be given, help from the tutor, except in the case of a systems failure.

All assessment tests must be treated as confidential. They should only be used at the time of assessment.

All work stored on the network or hard disk must be kept secure. Centres are advised to consider setting up passwords to control login procedures and ensure only authorised access to files.

Centres must ensure that:

potential candidates do not have access to the assessment tests;

at the end of each session all assessment material, i.e. assessment tests and candidates' completed work, is collected by the tutor.

Candidates' Learning Objectives Record Sheets and completed assessments must be kept securely by the Centre between assessments and before submission to CIE. In no circumstances should they be left in the custody of the candidates.

4.5 Submission of Candidates' work

Candidates' work should be submitted to CIE on completion of the Stage 1 modules, the Stage 2 modules or all modules together, which constitute the full qualification. Only those candidates whose work reaches the required standard, meeting all the specified Learning Objectives in each module, should be put forward for moderation and certification.

Tutors are requested to send in portfolios for a sample of candidates (see 4.6). These portfolios must contain the evidence for each candidate in the sample (i.e. the printouts produced in the assessment test) and their completed Learning Objectives Record Sheet. Each Module for submission must be clearly identified in the portfolio with the candidate's name, Centre, Centre number and module details. All Learning Objective Record Sheets should identify the grade awarded by the tutor to each candidate in the sample. **In addition, the tutor must include a portfolio of assessment tests (i.e. the tasks given to the students) including worked answers for each module submitted**.

4.6   Submission of the sample for moderation

The Centre must submit to CIE samples of Centre-based assessment for moderation using the following criteria.

(a)   If there are 10 or fewer candidates entered, all the Centre-based records which contributed to the final assessment will be required.

(b)   If there are more than 10 candidates entered, all the Centre-based records contributed to the final assessment will be required for the number of candidates shown in the table below.

Number of candidates entered	Number of candidates whose work is required
11-50	10
51-100	15
above 100	20

The tutor, or Centre co-ordinator responsible, must select the 10, 15 or 20 candidates covering the grade range for each module. Where there is more than one tutor involved in evidencing the work of candidates, the sample must include, in equal number, candidates assessed by all tutors.

If CIE's Moderator thinks it necessary, CIE will request further samples of candidates' work. The Centre must despatch these as soon as the request is received.

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