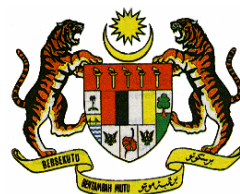




KEMENTERIAN PELAJARAN MALAYSIA



Pusat Perkembangan Kurikulum
Kementerian Pelajaran Malaysia



KEMENTERIAN PELAJARAN MALAYSIA

ICT Literacy for Secondary School Guideline



Pusat Perkembangan Kurikulum
Kementerian Pelajaran Malaysia
2007

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rukun Negara

BAHAWASANYA negara kita Malaysia mendukung cita-cita untuk mencapai perpaduan yang lebih erat di kalangan seluruh masyarakatnya; memelihara satu cara hidup demokratik; mencipta masyarakat yang adil bagi kemakmuran negara yang akan dapat dinikmati bersama secara adil dan saksama; menjamin satu cara yang liberal terhadap tradisi kebudayaannya yang kaya dan berbagai-bagai corak; membina satu masyarakat progresif yang akan menggunakan sains dan teknologi moden;

MAKA KAMI, rakyat Malaysia, berikrar akan menumpukan seluruh tenaga dan usaha kami untuk mencapai cita-cita tersebut berdasarkan prinsip-prinsip yang berikut:

KEPERCAYAAN KEPADA TUHAN

KESETIAAN KEPADA RAJA DAN NEGARA

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KEDAULATAN UNDANG-UNDANG

KESOPANAN DAN KESUSILAAN

FALSAFAH PENDIDIKAN KEBANGSAAN

Pendidikan di Malaysia adalah suatu usaha berterusan ke arah lebih memperkembangkan potensi individu secara menyeluruh dan bersepadu untuk melahirkan insan yang seimbang dan harmonis dari segi intelek, rohani, emosi dan jasmani berdasarkan kepercayaan dan kepatuhan kepada Tuhan. Usaha ini adalah bertujuan untuk melahirkan warganegara Malaysia yang berilmu pengetahuan, berketerampilan, berakhlak mulia, bertanggungjawab dan berkeupayaan mencapai kesejahteraan diri serta memberikan sumbangan terhadap keharmonian dan kemakmuran keluarga, masyarakat dan negara.

KATA PENGANTAR

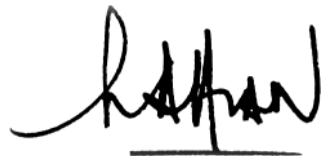
Program Komputer Dalam Pendidikan (KDP) yang diperkenalkan pada tahun 1992 secara rintis di 60 buah sekolah menengah merupakan titik permulaan kepada program Literasi Komputer di kalangan pelajar sekolah menengah. Sekolah-sekolah ini dibekalkan dengan sebuah makmal komputer yang dilengkapi dengan 20 buah komputer pelajar, satu komputer guru dan satu pelayan. Satu garis panduan untuk pelaksanaan program ini telah diedarkan ke sekolah melalui surat Pekeliling Ikhtisas Bil.2/1992 KP(PPK) 8601/01/0400/Jld II (91) bertarikh 17 Februari 1992.

Pada tahun 1996 program KDP telah diperluas ke 90 buah sekolah dan pada 1999 ke 110 buah sekolah menengah melalui surat siaran KP(PPK) 8601/01/0400/Jld.XII (91) bertarikh 11 Februari 2000. Pada tahun 2002, satu surat perkeliling KP(BS-PP)8786/004/35 (8) bertarikh 20 Mac 2002 telah memaklumkan kepada semua sekolah yang dibekalkan makmal komputer di bawah Program Pengkomputeran Sekolah Kementerian Pelajaran Malaysia supaya melaksanakan program Literasi Komputer di tingkatan 1 dan 2.

Pada tahun 2005, selari dengan perkembangan teknologi maklumat dan komunikasi serta dapatan kajian keperluan yang dijalankan di bawah program *Partners In Learning* (PIL) antara Kementerian Pelajaran Malaysia dengan Microsoft (Malaysia) Sdn. Bhd., kandungan program Literasi Komputer sekolah menengah telah disemak semula. Hasil dari semakan semula ini, program *ICT Literacy for Secondary School* diperkenalkan dan akan dilaksanakan di sekolah menengah mulai 2007. *ICT Literacy for Secondary School Guideline* disediakan sebagai panduan bagi membantu guru untuk melaksanakan program Information and Communication Technology Literacy for Secondary School dengan jayanya.

Dengan adanya program ini, usaha Kementerian Pelajaran Malaysia untuk melengkapkan pelajar dengan kemahiran asas teknologi maklumat dan komunikasi dapat direalisasikan. Program ini merupakan langkah permulaan ke arah menyediakan tenaga kerja teknologi maklumat dan komunikasi pada masa akan datang. Disamping itu, program ini dapat membantu kerajaan dalam usaha mengurangkan jurang digital di kalangan pelajar luar bandar dan bandar.

Akhir kata, usaha menyempurnakan garis panduan ini telah melibatkan banyak pihak iaitu pensyarah universiti, Institut Pendidikan Guru, guru dan pegawai Kementerian Pelajaran. Sehubungan itu, Pusat Perkembangan Kurikulum merakamkan setinggi-tinggi penghargaan dan terima kasih di atas sumbangan kepakaran, masa dan tenaga yang telah diberikan bagi menghasilkan garis panduan ini.



(MAHZAN BIN BAKAR SMP, AMP)

Pengarah
Pusat Perkembangan Kurikulum
Kementerian Pelajaran Malaysia

INTRODUCTION

In a borderless world, Information and Communication Technology (ICT) has become a powerful tool to increase productivity, efficiency and disseminate the latest information. Realizing the importance of ICT in education, the Ministry of Education (MOE) has taken a significant step to widen the usage of ICT among pupils by providing schools with ICT infrastructure. This is to bridge the gap between those who have access to facilities and those who have not.

The Computer in Education (CIE) programme was launched and piloted in 60 secondary schools in 1992 for all form one and form two pupils. Each computer lab in these schools was equipped with 20 desktop computers and a server. A guideline for teachers was also prepared to help teachers implement this programme through the circular KP (PPK) 8601/01/0400/Jld II (91) dated 17 February 1992 (Appendix A).

This programme was well received and found to be beneficial to pupils in enhancing learning in the area of ICT. Consequently, the programme was extended to 90 more schools in 1996, and 110 other schools were given the same opportunity in 1999 through a letter, KP(PPK) 8601/01/0400/Jld. XII (91) dated 11 February 2000 (Appendix B). In 2002, the service circular KP(BS-PP)8786/004/35 (8) dated 20 March 2002 (Appendix C) stated that all schools equipped with computer labs implement Computer Literacy Programme in form 1 and 2.

Due to the rapid development of ICT, the need eventually arose for a review of the Computer Literacy Programme. In 2005, through a need analysis carried out under the Partners In Learning (PIL) Programme, the contents of the Computer Literacy Programme for secondary schools were reviewed. It was found that there was a need to cater for various levels of capability in ICT skills among pupils. This necessarily demands formulation of a programme that introduces pupils to various entry points of ICT knowledge. It was also discovered that there was a need to expose pupils to other domains of ICT such as Programming, Networks and the Internet.

As a result of the need analysis conducted, Information and Communication Technology Literacy (ICTL) for Secondary School Programme is introduced and will be implemented in year 2007 to form 1 and form 2 pupils in all secondary schools equipped with computer labs.

In drawing up this guideline, due consideration has been given to the content of ICTL for Primary Schools Programme. This is to ensure the continuity of ICTL for Primary Schools Programme. The ICTL for Secondary Schools Programme takes up from this foundational grounding and seeks to provide pupils with greater access to information, to expand their knowledge and skills; and also to enable them to fully utilise technology in various fields. At the same time, moral values are emphasized in the implementation of this programme.

This ICTL for Secondary School Guideline is designed to provide teachers with an idea of the scope of the contents and relevant teaching and learning strategies. Coupled with this guideline, the content specification is provided to facilitate the implementation of this Programme. Teachers are encouraged to use other resources or create their own modules based on the content scope provided and the pupils' computer skills ability.

AIM

The aim of the ICTL for Secondary School Programme is to produce computer literate pupils. This is in line with the aspiration of the Education Ministry to produce a holistic individual as espoused in the National Philosophy of Education.

OBJECTIVES

At the end of this programme, pupils should be able to:

- acquire and apply ICT knowledge and skills creatively to assist them in their daily life;
- share ideas and information among themselves, within and beyond the school environment; and
- demonstrate responsibility and accountability towards ICT infrastructure and its used.

ICTL FOR SECONDARY SCHOOL PROGRAMME CONTENT

The programme emphasizes the integration of knowledge, skills and values.

KNOWLEDGE

The knowledge to be acquired in the ICTL for Secondary School Programme consists of concepts and facts about ICT, including ICT terminology. It includes procedures in managing computer laboratory, computer hardware, computer software, network and the Internet.

SKILLS

The skills involved are communication skills, information skills, managing computer system and problem-solving skills.

VALUES

The values inculcated by the ICTL for Secondary School Programme are responsibility, accountability, respect, cooperation, virtue and abide by ICT code of ethics.

CONTENT ORGANISATION

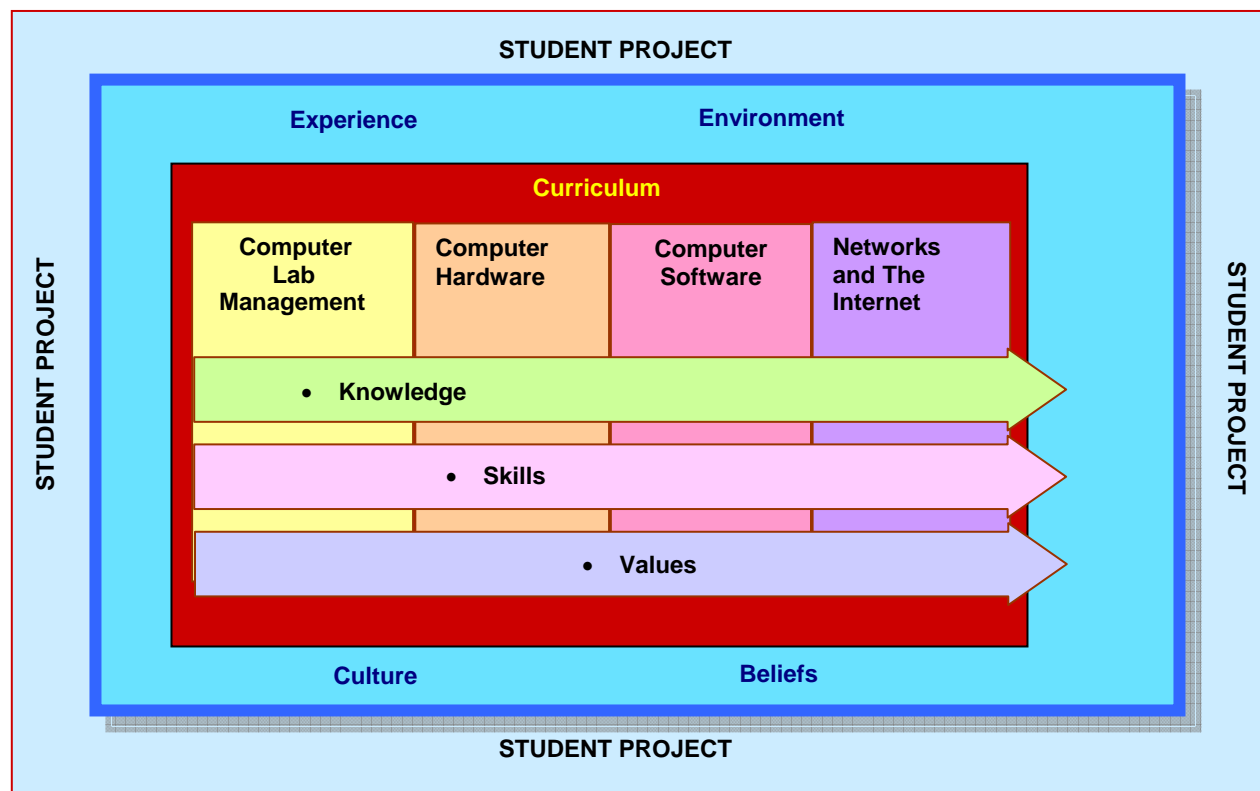
The scope of the ICTL for Secondary School Programme is designed according to four domains:

- Computer Lab Management
- Computer Hardware
- Computer Software
- Networks and The Internet

Each domain is divided into learning areas. It enables pupils to expand their knowledge, enhance their skills and inculcate values in life. The holistic approach of the content Organisation allows pupils to incorporate culture, beliefs, environment and experience to be a person who is open-minded, disciplined, confident and creative (Figure 1).

Pupils have various levels of competency in ICT skills. Therefore, the learning areas may be taught in any sequence according to student ability. This also means that teachers are not confined to follow the order in which the topics are set out.

Figure 1: ICTL for Secondary School Content Organisation



SCHOOL LEVEL IMPLEMENTATION

The ICTL for Secondary School programme is to be implemented in form one and form two using the school computer lab. A double period per week is allocated for this programme. This can be done by extending the school timetable to ensure the programme is implemented.

School timetable may differ according to subjects offered. For example, schools offering extra language subject such as Arabic, Mandarin or Tamil language may have 49 periods per week. Whereas, other schools may have 43 periods per week. Therefore, schools are recommended to make the necessary arrangements for the ICTL programme. **Teacher's total teaching period should include the ICTL lessons.**

Below are four (4) sample timetables to implement ICTL programme.

Sample A - Single session secondary school class timetable for ICTL programme (refer to Appendix D).

Sample B - Single session secondary school computer lab timetable for ICTL programme (refer to Appendix E).

Sample C - Double session secondary school class timetable for ICTL programme (form 1 or form 2). ICTL class start before afternoon session school begin. (refer to Appendix F).

Sample D - A double session secondary school computer lab timetable for ICTL programme. Form 1 and form 2 classes for the afternoon session attend their ICTL lessons in the morning session timetable (refer to Appendix G).

TEACHING AND LEARNING APPROACH

Appropriate teaching and learning approaches are essential to meet the learning objectives set out in the content specifications. The teacher acts as an instructor or a facilitator depending on the types of activities and the learning outcomes.

In imparting the ICT skills, pupils will produce products based on the learning outcomes. Pupils are able to start at any level according to their competency and progress.

Information and Communication Technology Literacy (ICTL) lessons should be conducted using the teaching and learning approaches stated below:

Knowledge-Based Approach

The knowledge-based approach in this Programme requires the teacher to act as instructor. The teacher is required to:

- Introduce the field of study in terms of concept, definition and terminology.
- Show and demonstrate the procedures for managing computer laboratory, computer hardware, computer software, network and the Internet.
- Provide instructional guidance which will form the fundamental basis for pupils to grasp the content of the programme.
- Encourage pupils to seek other sources of information and references to complete their projects when necessary.

Skill-Based Approach

The skill-based approach emphasizes student-centred activities with the teacher playing the dual role of instructor and facilitator. The teacher should:

- Provide hands-on guidance to pupils to help them acquire relevant skills in each learning area
- Encourage pupils to develop their skills independently and systematically

Project-based Learning Approach

Project-based learning approach is student-centred. It focuses on individual or group activities that go on over a period, resulting in a final product, presentation or performance. For example, E-scrap books, multimedia presentations and simple applications. The product is focused on the learning areas and is integrated across the curriculum over subjects such as the English language, the Sciences and Environmental studies. In facilitating project-based activities, the teacher should;

- provide advice on project management procedures and task organisation
- monitor the progress of student projects
- give advice, tips and recommendations whenever needed
- assess the outcome of pupils' work

Self-paced Learning Approach

The self-paced learning approach has been designed to encourage pupils to take responsibility for their own learning and to develop self-reliance and self-confidence within the parameters of the projects given. This strategy encourages the development of independent learners, facilitates the forging of productive work relationships among group members and also serves to foster discipline among pupils.

Self-Directed Learning Approach

In self-directed learning, pupils determine the topics they want to learn within a particular content area at their own pace. They also search for and locate information on specific learning areas from a variety of sources such as resource centres, libraries, reference books, magazines, CD-ROMs and the Internet. Pupils are also encouraged to evaluate their own progress within a particular learning area.

ASSESSMENT

Assessment acts as a yardstick in evaluating pupils' achievement of acquiring ICTL knowledge and skills. Assessment must be done continuously to monitor pupils' progress in terms of knowledge, skills and values. Pupils can be evaluated by using either formative or summative assessments or both. Content knowledge can be evaluated using written test, while skills acquired can be gauged according to pupils' portfolios, which comprise worksheets, projects as well as multimedia presentations. Values can also be evaluated by using checklists or observations (Appendix H).

COMPUTER LAB MANAGEMENT

Computer lab management is vital to ensure a safe and conducive learning environment. It enables the teacher to plan, maintain and manage the lab in proper order. Therefore, school should have an organisation chart, lab rules, logbook and display corner to enhance the lab to make it attractive as well as conducive for teaching and learning.

Every school should set up a committee to assist in managing the school computer lab and monitoring the ICTL for Secondary School Programme (Appendix I and J). Besides that, rules and regulations have to be drawn up to guide the pupils and teachers as to the Dos and Don'ts (Appendix K).

For safety matters, a plan on the location of computers and equipments in the lab should be displayed in the lab. Fire extinguisher must be in working condition and be placed in strategic places.

Two types of logbook must be provided in the lab to monitor the use of lab and computers: the **Computer Lab Log Book** and the **Computer Log Book**. Every user who enters the lab has to record the details of lab usage in the Computer Lab Log Book. In addition, the Computer Log Book is also provided on each computer table for the user to record computer usage (Appendix L).

A good with conducive learning environment should have a notice board complete with a duty roster, timetable, fire drill plan, articles of information and pupils' work. A display corner can also be set up to display pupils' work or computer hardware.

THE ICTL for SECONDARY SCHOOL PROGRAMME FRAMEWORK

The framework presents the scope for the teaching and learning of the Programme. It is divided into four domains: Computer Lab Management, Computer Hardware, Computer Software, Networks and The Internet. Each component consists of learning areas, which is divided into the scope of content as follows:

Computer Lab Management

Learning Areas	Scopes of Content
1. Computer Lab Regulations	1.1 Computer Lab Rules 1.2 User 1.3 Equipment 1.4 Data and User Security
2. Lab Organisation	2.1 Organisation Chart 2.2 Computer Lab Timetable 2.3 Logbook
3. Ethics in Using Computer	3.1 Copyright 3.2 Unethical use of Computers

Computer Hardware

Learning Areas	Scopes of Content
1. Introduction to Computers	1.1 Evolution of the Computer 1.2 Types of Computers
2. Computer Parts & Components	2.1 Overview of Computer System 2.2 System Unit 2.3 Peripherals 2.4 Input Devices 2.5 Output Devices 2.6 Storage Devices
3. Basic Maintenance	3.1 Handling Input and Output Devices 3.2 Computer Settings
4. Technology Development	4.1 Current Development of Hardware Technology

Computer Software

Learning Areas	Scope of Content
1. Introduction to Computer Software	1.1 Definition 1.2 Usage 1.3 Types of Software
2. Operating System (OS)	2.1 Introduction to Operating System 2.2 OS Interface Environment 2.3 File Management
3. Utilities Software	3.1 OS based Utility 3.2 Non-OS based Utility
4. Application Software	4.1 Introduction to Application Software 4.2 Installing and Uninstalling Application Software
5. Word Processing Software	5.1 Introduction to Word Processing Software 5.2 Starting Word Processing Software 5.3 Creating Document 5.4 Editing Document 5.5 Mail Merge

Learning Areas	Scope of Content
6. Spreadsheet Software	6.1 Introduction to Spreadsheet Software 6.2 Starting Spreadsheet Software 6.3 Creating Worksheet 6.4 Editing Worksheet
7. Presentation Software	7.1 Concept of Multimedia 7.2 Steps in Multimedia 7.3 Introduction to Presentation Software 7.4 Starting Presentation Software 7.5 Creating Presentation 7.6 Editing Presentation
8. Database Software	8.1 Introduction to Database Software 8.2 Starting Database Software 8.3 Creating Database 8.4 Editing Database 8.5 Getting External Data
9. Programming	9.1 Introduction to Programming 9.2 Steps in Programming development 9.3 Developing a simple programme

Networks and The Internet

Learning Areas	Scope of Content
1. Networks	1.1 Introduction to Networks 1.2 Types of Networks 1.3 Networks Topology 1.4 Shared Documents 1.5 Shared Hardware 1.6 Current Technology in Computer Networks
2. The Internet	2.1 Introduction to The Internet 2.2 Internet Requirements 2.3 Internet Applications 2.4 Internet Communications 2.5 Netiquette 2.6 Cyber Law
3. Website	3.1 Introduction to Website 3.2 Developing a Website

SUPPLEMENTRY BOOKS AND WEBSITES

A. BOOK

1. International Society for Technology in Education (2000) *National Educational Technology Standards for Students: Connecting Curriculum and Technology*. ISTE, US
2. Kementerian Pelajaran Malaysia. (2002) *Panduan Pelaksanaan Program Pengkomputeran di Sekolah*, Bahagian Teknologi Pendidikan, Kementerian Pelajaran Malaysia
3. Mokhtar Bin Ahmad. (2001) *Siri Jalan Pantas Teknologi Maklumat dan Komunikasi (ICT)*, "Word, Excel, PowerPoint". Kumpulan Usahawan Muslim Sdn. Bhd., Kuala Lumpur
4. Shelly Cashman Vermaat (2005) *Discovery Computers 2006*, Thomson Course Technology, USA
5. Zainuddin Zakaria (2004) *Computer Learning Series*, Win Publication, Selangor
6. H.L Capron J.A Johnson (2004) *Computers: Tool for Information Age – Eighth Edition*. Pearson Education International

B. WEBSITE

1. <http://myschoolnet.ppk.kpm.my>
2. <http://www.microsoft.com/digitalliteracy>
3. <http://www.microsoft.com/unlimitedpotential>
4. <http://msdn.microsoft.com/vstudio/express/vb/download/>

LEARNING MODULES

To achieve the learning objectives, Pusat Perkembangan Kurikulum has developed learning modules to be used by the teachers in carrying out the ICTL programme as stated in the Suggested Learning Activities.

The learning modules can be downloaded from the website <http://myschoolnet.ppk.kpm.my/ictlsm.htm>. Pusat Perkembangan Kurikulum will upload and upgrade the number of modules from time to time. Teachers can also modify or create their own module as long as it fulfills the learning outcomes.

CONTENT SPECIFICATION

The Content Specification provides detailed descriptions of the framework to assist teachers to interpret and implement ICTL for Secondary School Programme in the computer lab. The Content Specification is presented in three columns; Learning Area, Learning Outcomes and Suggested Learning Activities.

There are four learning domains; Computer Lab Management, Computer Hardware, Computer Software and Networks and The Internet. Each domain is divided into learning areas. The learning outcome of each learning area describes the learning skills and knowledge to be acquired by pupils.

Suggested Learning Activities provide teachers with various activities that can be carried out to help pupils achieve the learning outcomes. The teachers are also encouraged to go further than what is proposed in the Suggested Learning Activities for additional enrichment.

COMPUTER LAB MANAGEMENT

Learning Area	Learning Outcomes	Suggested Learning Activities
1. Computer Lab Regulations 1.1 Computer Lab Rules 1.2 User 1.3 Equipment 1.4 Data and User Security	1.1.1 List computer lab rules. 1.2.1 Practice computer lab rules. 1.3.1 Handle equipment responsibly. 1.4.1 State the importance of data and user security.	<ul style="list-style-type: none"> Showing and explaining computer lab rules in the computer lab Reporting on observation of practical lab rules using worksheets Explaining procedures for responsible care of equipment Discussing and listing appropriate ways of handling equipment Explaining the importance of password and usernames
2. Lab Organisation 2.1 Organisation Chart 2.2 Computer Lab Timetable	2.1.1 State the Organisation Chart of a computer lab. 2.1.2 Identify the Computer Lab Coordinator. 2.1.3 State the responsibilities of a computer lab coordinator. 2.2.1 Adhere to the timetable.	<ul style="list-style-type: none"> Showing and explaining the Organisation chart Using the computer lab according to the allocated time

COMPUTER LAB MANAGEMENT

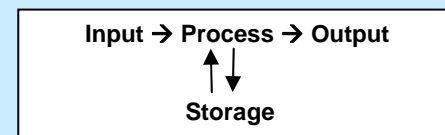
Learning Area	Learning Outcomes	Suggested Learning Activities
2.3 Log Book	2.3.1 Identify types of log books. 2.3.2 List usage of a log book. 2.3.3 Practise responsible use of computers.	<ul style="list-style-type: none"> Showing samples of log books <ul style="list-style-type: none"> Computer Log Book Computer Lab Log Book (refer Appendix L) Sign in and sign out log book Sign in when they use the computer
3. Ethics in Using Computer 3.1 Copyright 3.2 Unethical Use of Computers	3.1.1 State the ethics of computer usage. 3.1.2 Define the meaning of copyright. 3.1.3 State the effects of copyright violation. 3.2.1 List out various unethical use of computers. 3.2.2 State the effects of unethical use of computers.	<ul style="list-style-type: none"> Explaining the ethics of computer usage Explaining the meaning of copyright Discussing in groups the effects of copyright violation Conducting discussion on the misuse of computers In pairs, pupils browse the Internet to locate information on the misuse of computer

COMPUTER HARDWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
1. Introduction to Computers		
1.1 Evolution of the Computer	<p>1.1.1 State the generations of computers together with the respective processors used.</p> <p>1.1.2 Explain the generations of computers together with the respective processors used.</p>	<ul style="list-style-type: none"> Explaining the evolution of the computer from the vacuum tube to the fifth generation and showing the respective processors used Matching the types of processors used with the respective generations of computers in a worksheet to be kept in the portfolio Gathering information on the evolution of computers and presenting the information in groups
1.2 Types of Computers	<p>1.2.1 Identify the types of computers:</p> <ul style="list-style-type: none"> Supercomputer Mainframe Mini Computer Micro Computer Work Station <p>1.2.2 Define different types of computer.</p>	<ul style="list-style-type: none"> Introducing various types of computers using a PowerPoint presentation. Labelling a flow chart of the types of computer in a worksheet to be kept in the portfolio Gathering information on the types of computer and presenting the information in groups

COMPUTER HARDWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
2. Computer Parts & Components 2.1 Overview of the Computer System	2.1.1 Identify main components in the computer system: <ul style="list-style-type: none"> • Monitor • Keyboard • Speaker • Mouse • System unit • Printer 2.1.2 State the functions of the main components in the computer system.	<ul style="list-style-type: none"> • Showing the main components of the computer system • Labelling the main components of the computer system in a worksheet to be kept in the portfolio <ul style="list-style-type: none"> • Carrying out brainstorming session on the functions of the main components of the computer system • Writing down the functions and keeping the sheet in the portfolio <ul style="list-style-type: none"> • Drawing and explain the data processing cycle of the computer system on a paper and to be kept in the portfolio.



COMPUTER HARDWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
2.2 System Unit	2.2.1 Identify the components of a system unit: <ul style="list-style-type: none"> • Input/Output port (I/O port) • Reset button • CDROM drive • Floppy drive • Hard disk drive 	<ul style="list-style-type: none"> • Introducing the components of a system unit • Labelling the different components of a system unit in a worksheet to be kept in the portfolio • Showing a system unit to the class
	2.2.2 State the functions of the main components of a system unit.	<ul style="list-style-type: none"> • Explaining the functions of the component of a system unit such as I/O, Reset button, CDROM drive, floppy drive, hard disk drive • Writing down the functions of the component off the system unit and keeping it in the portfolio
	2.2.3 State the functions of CPU, RAM, ROM and expansion slots found on the motherboard.	<ul style="list-style-type: none"> • Showing a motherboard to pupils • Identify, explain and discuss the functions of CPU, RAM, ROM and expansion slots found on the motherboard • Writing the functions of the components in the worksheets provided and keeping them in the portfolio
	2.2.4 Inculcate values of responsibility and cooperation among the pupils.	<ul style="list-style-type: none"> • Carrying out in pair or group activities

COMPUTER HARDWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
2.3 Peripherals	<p>2.3.1 State the definition of peripheral.</p> <p>2.3.2 Identify different types of peripherals:</p> <ul style="list-style-type: none"> • Input devices • Output devices • Storage devices <p>2.3.3 State examples of different types of peripherals:</p> <ul style="list-style-type: none"> • Printers • Scanners • LCD projectors • Digital cameras • External CD drives • External storages <p>2.3.4 Explain the functions of each peripheral.</p>	<ul style="list-style-type: none"> • Explaining the definition of peripheral • Showing the different types of peripheral • Showing the example of different types of peripherals such as printers, scanners, LCD projectors, digital cameras, external CD drives and external storages • Collecting pictures of peripherals and keeping them in the portfolio • Show types of peripherals commonly found in the computer lab • Carry out a brainstorm session on the functions of each peripheral • Write the functions of each peripheral in worksheets and keeping them in the portfolio • Explaining the use of peripherals and demonstrating how to operate them • Doing hands-on activities while teacher facilitates

COMPUTER HARDWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
2.4 Input Devices	2.4.1 Identify input devices.	<ul style="list-style-type: none"> Facilitating a session where pupils brainstorm on various input devices Showing examples of input devices
	2.4.2 List input devices.	<ul style="list-style-type: none"> Collecting pictures of input devices, label and keep in the portfolio
	2.4.3 State the respective functions of input devices.	<ul style="list-style-type: none"> Facilitating group discussions on the functions of input devices
2.5 Output Devices	2.5.1 Identify output devices.	<ul style="list-style-type: none"> Brainstorming on various output devices
	2.5.2 List output devices.	<ul style="list-style-type: none"> Showing examples of output devices Collecting pictures of output devices, labelling and keep in the portfolio
	2.5.3 State the respective functions of output devices.	<ul style="list-style-type: none"> Facilitating group discussions on the functions of output devices
2.6 Storage Devices	2.6.1 Identify storage devices.	<ul style="list-style-type: none"> Brainstorming on the various storage devices
	2.6.2 List storage devices.	<ul style="list-style-type: none"> Collecting pictures of storage devices, labelling and keeping in the portfolio
	2.6.3 State the functions of storage devices.	<ul style="list-style-type: none"> Facilitating group discussions on the functions of storage devices

COMPUTER HARDWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
	<p>2.6.4 Identify differences between primary and secondary storage devices.</p> <p>2.6.5 State the units for data measurement:</p> <ul style="list-style-type: none"> • Bit • Byte • Kilobyte • Megabyte • Gigabyte <p>2.6.6 Inculcate values of responsibility, accountability and cooperation.</p>	<ul style="list-style-type: none"> • Explaining the differences between primary and secondary storage devices • Categorizing the two storage devices • Explaining the units used for data measurement • Completing a conversion table for units of data • Carry out in pair or group activities
<p>3. Basic Maintenance</p> <p>3.1 Handling Input and Output Devices</p>	<p>3.1.1 Set up the input and output devices correctly.</p> <p>3.1.2 Inculcate values of responsibility in handling hardware.</p>	<ul style="list-style-type: none"> • Setup the input and output devices: <ul style="list-style-type: none"> ○ Monitor ○ Keyboard ○ Mouse ○ Speaker

COMPUTER HARDWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
3.2 Computer Settings	<p>3.2.1 Customize settings for:</p> <ul style="list-style-type: none"> • Display • Mouse • Sound <p>3.2.2 Customize settings for:</p> <ul style="list-style-type: none"> • Date and time • Regional and language options 	<ul style="list-style-type: none"> • Demonstrating how to customize settings for display, mouse and sound • Carry out hands-on activities • Demonstrating how to customize settings for date and time, language and regional options • Carry out hands-on activities according to instructions
<p>4. Technology Development</p> <p>4.1 Current Development of Hardware Technology</p>	<p>4.1.1 Gather information on the current or latest development of hardware technology.</p>	<ul style="list-style-type: none"> • Gathering information/carrying out research on the current or latest development of hardware technology • Write report of the document • Present the report • Present the information • Produce a hardware portfolio (A compilation of pupils' work throughout the learning area on hardware) • Visit a computer exhibition/fair • Visit a computer shop

COMPUTER SOFTWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
1. Introduction to Computer Software 1.1 Definition 1.2 Usage 1.3 Types of Software	1.1.1 State the definition of software. 1.2.1 State the usage of software. 1.3.1 List different types of software: <ul style="list-style-type: none"> Operating Systems Utility Programmes Application Software 	<ul style="list-style-type: none"> Explaining the definition of software Facilitating pupils' discussion on the use of software Discussing types of software Showing examples for different types of software
2. Operating System (OS) 2.1 Introduction to Operating System (OS) 2.2 OS Interface Environment 2.3 File Management	2.1.1 Define the operating system. 2.1.2 State the functions of operating system. 2.2.1 State the characteristics of OS environment based Graphical User Interface (GUI). 2.3.1 Manage folders and subfolders: <ul style="list-style-type: none"> Create folders Rename folders Move files 	<ul style="list-style-type: none"> Discussing types and functions of operating system Showing the difference between DOS and Windows display Starting and shutting down the computer Exploring the Windows environment Creating folders and subfolders Renaming files and folders Moving files and folders Copying files and folders Deleting files and folders

COMPUTER SOFTWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
3. Utility Software		
3.1 OS Based Utility	3.1.1 Run scan disk on the computer.	<ul style="list-style-type: none"> Running scan disk and defragging the hard disk
	3.1.2 Defrag the hard disk.	
3.2 Non-OS based Utility	3.2.1 Scan the computer for viruses.	
	3.2.2 Compress and decompress files.	
4. Application Software		
4.1 Introduction to Application Software	4.1.1 Identify types of application software: <ul style="list-style-type: none"> Word processing Spreadsheet Presentation Database Programming 	<ul style="list-style-type: none"> Discussing types of application software Show examples of application software
4.2 Installing and Uninstalling Application Software	4.2.1 Install a software.	
	4.2.2 Uninstall or remove a software.	

COMPUTER SOFTWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
5. Word Processing Software		
5.1 Introduction to Word Processing Software	5.1.1 State the usage of word processing.	<ul style="list-style-type: none"> Show various types of word processing software Discussing the usage of word processing Showing documents which have been produced by word processing software, such as letters, essays and minutes of meetings
5.2 Starting Word Processing Software	5.2.1 Start a word processing software.	<ul style="list-style-type: none"> Demonstrating how to start word processing software and explaining the user interface
	5.2.2 State the steps of starting a word processing software.	<ul style="list-style-type: none"> Starting word processing software and exploring the user interface
	5.2.3 State and identify features in a word processing software and demonstrate understanding of user interface.	
	5.2.4 State the main toolbars in word processing software: <ul style="list-style-type: none"> Standard bar Formatting bar Drawing bar 	<ul style="list-style-type: none"> Discussing the toolbars in MS Word
	5.2.5 List icons in the Standard, Formatting and Drawing Toolbars.	<ul style="list-style-type: none"> Labelling each icon on the handouts given
	5.2.6 State the functions of icons in the Standard, Formatting and Drawing Toolbars	<ul style="list-style-type: none"> Explaining the function of icons in Standard, Formatting and Drawing Toolbars

COMPUTER SOFTWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
5.3 Creating Document	5.3.1 Create a new document by using word processing software.	<ul style="list-style-type: none"> Carrying out hands-on activities on following skills: <ul style="list-style-type: none"> Setting Page Setup Keying in data Saving document Closing document
	5.3.2 Set 'Page Setup'.	
	5.3.3 Key in data into the new document.	
	5.3.4 Save the new document with a new file name.	
	5.3.5 Exit file.	
5.4 Editing Document	5.4.1 Identify file and its location.	<ul style="list-style-type: none"> Carrying out hands-on activities on following skills: <ul style="list-style-type: none"> Opening existing document Cutting and pasting text Copying and pasting Changing font - size/ type/ style Aligning text Change case Typing correction - delete/ insert/ backspace Allocating line spacing Setting column Using Drop Cap Inserting header and footer Inserting page number Inserting graphics Indenting
	5.4.2 Open the file.	
	5.4.3 Identify and use editing tools to edit document.	
	5.4.4 Create a document with table and column.	

COMPUTER SOFTWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
	5.4.5 Print document.	<ul style="list-style-type: none"> ○ Printing document ○ Inserting table ○ Inserting bullet and numbering ○ Using the tab key ○ Assigning borders
	5.4.6 Create a document using Drawing Tools.	<ul style="list-style-type: none"> ○ Inserting WordArt ○ Inserting Clip Art ○ Adding in colour ○ Using AutoShapes ○ Using Text Box ○ Using 3-D Style
	5.4.7 Show creativity by creating a document.	<ul style="list-style-type: none"> ● Creating documents such as: <ul style="list-style-type: none"> ○ School bulletin ○ Newsletter ○ Brochure ○ Pamphlet ○ Programme book
	5.4.8 Work cooperatively in groups.	<ul style="list-style-type: none"> ● Printing out the documents and keeping them in their portfolio
	5.4.9 Abide by the rules and instructions.	

COMPUTER SOFTWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
5.5 Mail Merge	5.5.1 State the usage of mail merge. 5.5.2 Create a mail merge document. 5.5.3 Print the document.	<ul style="list-style-type: none"> Explaining the use of mail merge Using mail merge to create certificates, letters or forms Printing out the mail merge document and putting it in their portfolio <p>Refer to:</p> <ul style="list-style-type: none"> PPK “Self Access Learning Module” Information and Communication Technology Literacy for Secondary School – Word Processing Module <p>or</p> <ul style="list-style-type: none"> Microsoft Unlimited Potential A Community Learning Curriculum – Word Processing Fundamentals
6. Spreadsheet Software		
6.1 Introduction to Spreadsheet Software	6.1.1 State the usage of spreadsheet.	<ul style="list-style-type: none"> Showing various type of spreadsheet software Showing spreadsheet features Explaining the basic elements of a worksheet: <ul style="list-style-type: none"> Cell Colum Row
6.2 Starting Spreadsheet Software	6.2.1 Start spreadsheet software. 6.2.2 State the steps of starting a spreadsheet software. 6.2.3 State and identify features in spreadsheet application and demonstrate understanding of user interface.	<ul style="list-style-type: none"> Demonstrating how to start a spreadsheet software and explaining the user interface Starting spreadsheet software and exploring the user interface

COMPUTER SOFTWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
6.3 Creating Worksheet	6.2.4 State the main toolbars in spreadsheet software: <ul style="list-style-type: none"> • Standard bar • Formatting bar • Formula bar • Chart bar 	<ul style="list-style-type: none"> • Discussing the toolbars in MS Excel
	6.2.4 List icons in Standard, Formatting, Formula and Chart Toolbars.	<ul style="list-style-type: none"> • Labelling each icon in the handouts given
	6.2.5 State the functions of icons in the Standard, Formatting, Formula and Chart Toolbars.	<ul style="list-style-type: none"> • Explaining the functions of the icons in the Standard, Formatting, Formula and Chart Toolbars
	6.3.1 Create a new worksheet by using spreadsheet software.	<ul style="list-style-type: none"> • Carrying out hands-on activities on following skills: <ul style="list-style-type: none"> ○ Creating a new worksheet ○ Setting page setup ○ Entering data ○ Saving worksheet ○ Closing workbook ○ Opening existing worksheet ○ Cutting and Pasting data ○ Adjusting rows and Columns ○ Inserting rows and columns ○ Printing worksheet <ul style="list-style-type: none"> ▪ Normal printing ▪ Area printing
	6.3.2 Set 'Page Setup'.	
	6.3.3 Key in data into worksheet.	
	6.3.4 Save worksheet.	
	6.3.5 Print worksheet.	
	6.3.6 Close workbook and exit Spreadsheet software.	

COMPUTER SOFTWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
6.4 Editing worksheet	6.3.7 Use formulae in worksheet: <ul style="list-style-type: none"> • Sum • Average • Grading (Lookup,VLookup) • Percentage • Ranking 	<ul style="list-style-type: none"> ○ Entering data ○ Using formulae: sum, average, grading (Lookup, VLookup), percentage, ranking ○ Using currency format ○ Inserting table ○ Creating charts ○ Changing chart types and properties ○ Deleting charts ○ Previewing charts ○ Printing charts ○ Saving charts
	6.3.8 Insert a chart in worksheet.	
	6.4.1 Identify a file and its location.	
	6.4.2 Open the file.	
	6.4.3 Identify and use editing tools to edit worksheet.	
		<p>○ Opening existing file</p> <p>○ Creating multiple worksheets</p> <p>○ Moving or copying sheet</p> <p>○ Renaming/deleting worksheet</p> <p>○ Changing the font size/ type/ style</p> <p>○ Aligning text</p> <p>○ Formatting cell</p> <p>Refer to:</p> <ul style="list-style-type: none"> ○ PPK “Self Access Learning Module” Information and Communication Technology Literacy for Secondary School – Spreadsheet Module <p>or</p> <ul style="list-style-type: none"> ○ Microsoft Unlimited Potential A Community Learning Curriculum – Spreadsheet Fundamentals

COMPUTER SOFTWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
7. Presentation Software		
7.1 Concept of Multimedia	7.1.1 State the concept of Multimedia.	<ul style="list-style-type: none"> Explaining the concept of multimedia
7.2 Steps in Multimedia Development	7.2.1 State the steps in multimedia development: <ul style="list-style-type: none"> Analysis Design (Storyboard) Implementation Testing Evaluation Publishing 	<ul style="list-style-type: none"> Explaining the steps in multimedia development
7.3 Introduction to Presentation Software	7.3.1 State the usage of presentation software.	<ul style="list-style-type: none"> Explaining the usage of presentation software and showing samples of presentations
7.4 Starting Presentation Software	7.4.1 Start presentation software. 7.4.2 State the steps of starting presentation software. 7.4.3 State and identify features in the presentation software and demonstrate understanding of user interface. 7.4.4 State the main toolbars in the presentation software: <ul style="list-style-type: none"> Standard bar Formatting bar Drawing bar Task Pane bar Slide design Slide layout 	<ul style="list-style-type: none"> Demonstrating how to start a presentation software and explaining the user interface Starting presentation software and exploring the user interface Discussing the toolbars in MS PowerPoint

COMPUTER SOFTWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
7.5 Creating Presentation	7.4.5 List icons in the Standard, Formatting, Drawing and Task Pane toolbars.	<ul style="list-style-type: none"> • Labelling each icon in the handouts given • Explaining the functions of the icons in the Standard, Formatting, Drawing and Task Pane toolbars • Carrying out hands-on activities: <ul style="list-style-type: none"> ○ Entering text ○ Inserting picture ○ Saving presentation ○ Closing presentation ○ Opening existing presentation ○ Running slide show ○ Printing presentation: <ul style="list-style-type: none"> ▪ Slides ▪ Handouts
	7.4.6 State the function of icons in the Standard, Formatting, Drawing and Task Pane toolbars.	
	7.5.1 Create a blank slide presentation using slide layout: <ul style="list-style-type: none"> • Enter text • Insert picture 	
	7.5.2 Save the presentation.	
	7.5.3 Close and exit the presentation.	
	7.5.4 Open existing presentation.	
	7.5.5 Run the slide show.	
	7.5.6 Print the presentation.	
	7.6.1 Create presentation using blank layout: <ul style="list-style-type: none"> • Insert Text Box • Insert WordArt • Insert pictures • Insert movie and sound 	
	7.6.2 Modify text.	
7.6 Editing Presentation	7.6.3 Apply colour background.	<ul style="list-style-type: none"> • Carrying out hands-on activities: <ul style="list-style-type: none"> ○ Creating slide presentation ○ Inserting Text Box ○ Inserting WordArt ○ Inserting picture ○ Inserting movie and sound ○ Modifying text ○ Applying colour background ○ Inserting new slide

COMPUTER SOFTWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
	<p>7.6.4 Insert new slides using effects below:</p> <ul style="list-style-type: none"> • Custom animation • Slide transitions <p>7.6.5 Apply slides design.</p> <p>7.6.6 Create hyperlink.</p> <p>7.6.7 Create multimedia presentation including text, pictures, movie, sound, animation, transition and hyperlink.</p> <p>7.6.8 Demonstrate cooperation and accountability.</p>	<ul style="list-style-type: none"> ○ Adding effect ○ Applying slide design ○ Using hyperlink: <ul style="list-style-type: none"> ▪ Action button ▪ Hyperlink text • Producing and presenting a simple multimedia presentation <p>Refer to:</p> <ul style="list-style-type: none"> ○ PPK “Self access Learning Module” Information and Communication Technology Literacy for Secondary School – PowerPoint Presentation Module <p>or</p> <ul style="list-style-type: none"> ○ Microsoft Unlimited Potential A Community Learning Curriculum – Presentation Fundamentals

COMPUTER SOFTWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
8. Database Software		
8.1 Introduction to Database Software	8.1.1 State the usage of database software.	<ul style="list-style-type: none"> • Showing examples of database software • Explaining the usage of database software • Examples of database application: <ul style="list-style-type: none"> ○ EMIS ○ Sistem Maklumat Murid (SMM)
8.2 Starting Database Software	8.2.1 Start a database software. 8.2.2 State the steps of starting database software. 8.2.3 State and identify features in database software and demonstrate understanding of user interface. 8.2.4 State the main toolbars in database software: <ul style="list-style-type: none"> • Database bar • Database Window bar • Object bar 8.2.5 List icons in the database bar, database window bar and object bar. 8.2.6 State the functions of icons in database bar, database window bar and object bar.	<ul style="list-style-type: none"> • Demonstrating how to start a database software and exploring the user interface • Discussing the toolbars in MS PowerPoint • Labelling each icon in the handouts given • Explaining the usage of icons in database bar, database window bar and object bar

COMPUTER SOFTWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
8.3 Creating Database	8.3.1 Save database file. 8.3.2 Create table by using wizard. 8.3.3 Differentiate field, record and table. 8.3.4 Define primary key. 8.3.5 Insert data in the table. 8.3.6 Save table. 8.3.7 Find record from table. 8.3.8 Create form by using wizard: <ul style="list-style-type: none"> Add records Edit records 8.3.9 Create query by using wizard. 8.3.10 Create report by using wizard.	<ul style="list-style-type: none"> Carrying out hands-on activities <ul style="list-style-type: none"> Naming database Saving database Closing database Opening existing database Inserting data Adding and editing records Finding records Printing reports <p>Refer to:</p> <ul style="list-style-type: none"> PPK “Self Access Learning Module” Information and Communication Technology Literacy for Secondary School – Microsoft Access Module <p>or</p> <ul style="list-style-type: none"> Microsoft Unlimited Potential A Community Learning Curriculum – Database Fundamentals
8.4 Editing Database	8.4.1 Modify table: <ul style="list-style-type: none"> Add field 8.4.2 Modify form.	
8.5 Getting External Data	8.5.1 Import data from other file type.	

COMPUTER SOFTWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
9. Programming		
9.1 Introduction to Programming	9.1.1 Define programme and programming language.	<ul style="list-style-type: none"> Discussing briefly the definition of programme and programming language: <ul style="list-style-type: none"> BASIC COBOL PASCAL C The development of BASIC programming language: <ul style="list-style-type: none"> Basic Visual Basic Visual Basic.Net Showing the different programming tools (interface) of BASIC
9.2 Steps in Programming development	9.2.1 State the main steps in programme development: <ul style="list-style-type: none"> Problem analysis Programme design Coding Testing and debugging Documentation 	<ul style="list-style-type: none"> Explain the steps in programming development using programme development Life Cycle
9.3. Developing a simple Programme	9.3.1. State the features of the programming tools.	<ul style="list-style-type: none"> Explaining the feature of Programme Software (Visual Basic Express or Just Basic) http://msdn.microsoft.com/vstudio/express/vb/download/ Familiarizing with Visual Basic Express Interface Creating objects in a form using toolbox Changing the objects properties in properties window

COMPUTER SOFTWARE

Learning Area	Learning Outcomes	Suggested Learning Activities
	<p>9.3.2. Identify the visual development environment of programming tool:</p> <ul style="list-style-type: none"> • Toolbar • Toolbox <p>9.3.3. Create object using toolbox:</p> <ul style="list-style-type: none"> • Label • Button • Textbox • Picture box <p>9.3.4. Declare Variables:</p> <ul style="list-style-type: none"> • String • Integer • Double <p>9.3.5. Write code for simple programme.</p>	<ul style="list-style-type: none"> • Explaining variables in programming that covers: <ul style="list-style-type: none"> ○ Data type ○ Declaration of variable ○ Assign value of variable • Developing biodata programme consist of: <ul style="list-style-type: none"> ○ Login Form ○ Biodata Form • Developing personal account programme <p>Project: Develop a simple programme for the students daily needs based on the basic elements learnt.</p> <p>Refer to:</p> <ul style="list-style-type: none"> ○ PPK “Self Access Learning Module” Information and Communication Technology Literacy for Secondary School – Programming Module

NETWORKS AND THE INTERNET

Learning Area	Learning Outcomes	Suggested Learning Activities
1. Networks		
1.1 Introduction to Networks	1.1.1 Define networks. 1.1.2 List benefits of computer networks.	<ul style="list-style-type: none"> Finding the definition of Network from books, magazines, newspapers and other appropriate sources Discussing the benefits of computer networks: <ul style="list-style-type: none"> sharing devices sharing data and information sharing Internet access Showing actual examples of Network in the computer lab
1.2 Types of Networks	1.1.3 Identify the devices needed in a computer Networks. 1.2.1 List types of computer networks: <ul style="list-style-type: none"> Local Area Network (LAN) Wide Area Networks (WAN) Metropolitan Area Networks (MAN) 1.2.2 Differentiate types of computer Networks.	<ul style="list-style-type: none"> Listing various types of networks: <ul style="list-style-type: none"> LAN WAN MAN Identifying the differences between types of computer Networks: <ul style="list-style-type: none"> coverage area networking implementation in Organisations
1.3 Networks Topology	1.3.1 State types of network topology: <ul style="list-style-type: none"> Star Network Ring Network Bus Network 	<ul style="list-style-type: none"> Showing and explaining types of network topology Sketching the types of network topology

NETWORKS AND THE INTERNET

Learning Area	Learning Outcomes	Suggested Learning Activities
1.4 Share Documents	1.4.1 Share documents with other users through Local Area Networks (LAN).	<ul style="list-style-type: none"> • Creating shared folders
	1.4.2 Receive and transfer documents through LAN.	<ul style="list-style-type: none"> • Receiving and transferring documents
1.5 Share Hardware	1.5.1 Share printer in LAN.	<ul style="list-style-type: none"> • Printing documents using shared printer
1.6 Current Technology in Computer Networks	1.6.1 Explain current technology in computer networks.	<ul style="list-style-type: none"> • Discussing current/ latest technology in computer networks: <ul style="list-style-type: none"> ○ WiFi ○ Bluetooth • Collecting and gathering all related information on current technology in networking to be kept in the portfolio
2. The Internet		
2.1 Introduction to the Internet	2.1.1 Define the Internet.	<ul style="list-style-type: none"> • Locating the meaning of Internet from books, magazines and other appropriate sources
	2.1.2 Discuss advantages and disadvantages of the Internet.	<ul style="list-style-type: none"> • Discussing advantages and disadvantages of the Internet
2.2 Internet Requirements	2.2.1 List requirements needed to access the Internet.	<ul style="list-style-type: none"> • Showing and explaining basic requirements to access the Internet: <ul style="list-style-type: none"> ○ Modem (internal and external) ○ Access account ○ Network Interface Card (NIC) ○ Wireless network interface card ○ Hub/ Switch ○ Router ○ Wireless access point

NETWORKS AND THE INTERNET

Learning Area	Learning Outcomes	Suggested Learning Activities
2.3 Internet Applications	2.3.1 Define the World Wide Web (WWW).	<ul style="list-style-type: none"> Explaining the meaning of World Wide Web (WWW)
	2.3.2 State available web browsers.	<ul style="list-style-type: none"> Introducing web browsers: <ul style="list-style-type: none"> Internet Explorer Netscape Navigator Opera Safari Godzilla
	2.3.3 List commonly used search engines.	<ul style="list-style-type: none"> Listing examples of search engines: <ul style="list-style-type: none"> Yahoo Google AltaVista Hot Bot
	2.3.4 State the function of a search engine.	<ul style="list-style-type: none"> Discussing the function of a search engine
	2.3.5 Search for information using a search engine.	<ul style="list-style-type: none"> Demonstrating how to search for information from the Internet – use information and communication skill Using Google to search for relevant information
	2.3.6 Download files from the Internet.	<ul style="list-style-type: none"> Demonstrating to download files from the Internet Downloading files from the Internet: <ul style="list-style-type: none"> Images Videos Audio

NETWORKS AND THE INTERNET

Learning Area	Learning Outcomes	Suggested Learning Activities
2.4 Netiquette	2.3.7 Exercising responsibility when downloading information from the Internet.	<ul style="list-style-type: none"> • Demonstrating security while surfing the Internet • Demonstrating security tools setting found in web browser
	2.3.8 Exercising accountability for information searched.	<ul style="list-style-type: none"> • Knowledge all sources found true the internet. • Demonstrating security setting in surfing the internet
	2.4.1 Explain the meaning of Netiquette.	<ul style="list-style-type: none"> • Locating the meaning of netiquette from books, magazines and other appropriate sources • Netiquette relates to online communication, not surfing
	2.4.2 List out the Dos and Don'ts while communicating online.	<ul style="list-style-type: none"> • List Dos and Don'ts while communicating with others online (surfing the Internet)
	2.4.3 Adhere to netiquette in various forms of online communications.	<ul style="list-style-type: none"> • Listing netiquette items: <ul style="list-style-type: none"> ○ Use a pleasant tone in writing ○ Ensure that messages are clear and concise ○ Avoid spamming ○ Avoid "Faming" ○ Use emoticons wisely ○ Exercise judgement before sending messages

NETWORKS AND THE INTERNET

Learning Area	Learning Outcomes	Suggested Learning Activities
2.5 Internet Communications	2.5.1 State various forms of communication on the Internet.	<ul style="list-style-type: none"> Introducing pupils to several forms of Internet communications: <ul style="list-style-type: none"> E-mailing Chatting Conferencing (audio and video) Net Meeting Newsgroup Forum
	2.5.2 List peripherals used for communications.	<ul style="list-style-type: none"> Listing peripherals used for communications: <ul style="list-style-type: none"> Web camera Microphone Earphone
	2.5.3 Communicate using e-mail.	<ul style="list-style-type: none"> Demonstrating how to: <ul style="list-style-type: none"> Register an e-mail account send messages attach files to messages receive/retrieve messages download attached files delete/save messages
	2.5.4 Practise honesty in online communications.	
	2.5.5 Observe safety precautions when retrieving mail.	
	2.5.6 Communicate using Internet Relay Chat (IRC).	<ul style="list-style-type: none"> Introducing pupils to Internet Relay Chat: <ul style="list-style-type: none"> MIRC MS-Chat ICQ Messenger tool
	2.5.7 Observe safety precautions when communicating online.	<ul style="list-style-type: none"> Chatting using Messenger: <ul style="list-style-type: none"> communicating between two or more users observing safety precautions observing Netiquette

NETWORKS AND THE INTERNET

Learning Area	Learning Outcomes	Suggested Learning Activities
2.6 Cyber Law	2.6.1 Describe the need for cyber law.	<ul style="list-style-type: none"> Facilitating discussion on reasons for the need of cyber law Writing a short essay on the need for cyber law
3. The Website		
3.1 Introduction to Website	3.1.1 Define website. 3.1.2 List web design software.	<ul style="list-style-type: none"> Introducing several web design software: <ul style="list-style-type: none"> Microsoft FrontPage Macromedia Dreamweaver Claris Microsoft Word
3.2 Developing a Website	3.2.1 Create a website.	<ul style="list-style-type: none"> Creating a website using website design tools: <ul style="list-style-type: none"> Inserting text Inserting images Inserting hyperlinks Working in groups to create a website for: <ul style="list-style-type: none"> School Club Society
	3.2.2 Register with a web server.	<ul style="list-style-type: none"> Choosing a web server to place the website
	3.2.3 Upload web pages.	<ul style="list-style-type: none"> Uploading web pages to the free web hosting: <ul style="list-style-type: none"> Yahoo Time.net
		Refer to: <ul style="list-style-type: none"> PPK “Self Access Learning Module” Information and Communication Technology Literacy for Secondary School – Creating Website Module

APPENDICES



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Tarikh : 17 Februari 1992

Semua Pengarah Pendidikan Negeri

**SURAT PEKELILING IKHTISAS BIL. 2/1992:
Pelaksanaan Mata Pelajaran Literasi Komputer
Bagi Tingkatan I dan Tingkatan II Fasa 1 Projek KDP di 60 Buah Sekolah**

Dimaklumkan bahawa Kementerian Pendidikan, dalam Mesyuarat Jawatankuasa Pusat Kurikulum yang ke 1/92 pada 9 Februari 1992 telah memutuskan supaya Literasi Komputer dijadikan sebagai salah satu mata pelajaran dan bukan sebagai aktiviti kokurikulum Kemahiran Hidup.

2. Pengajaran mata pelajaran Literasi Komputer akan bermula dengan pelajar-pelajar Tingkatan I di 60 buah sekolah menengah yang telah dibekalkan dengan kemudahan komputer. Pengajaran mata pelajaran ini akan disambung ke Tingkatan II pada tahun 1993.

3. Bagi sekolah-sekolah yang tidak termasuk dalam Projek Perintis Komputer Dalam Pendidikan, bolehlah turut menyertai program tersebut sekiranya mempunyai segala kemudahan yang diperlukan.

4. Sukatan Pelajaran Literasi Komputer telah digubal dan guru-guru yang terlibat dikehendaki mengajar mengikut Sukatan Pelajaran Literasi Komputer. Walau bagaimanapun, guru-guru boleh mengolah urutan tajuk-tajuk dalam Sukatan Pelajaran ini mengikut kesesuaian dan keperluan.

5. Masa pengajaran Literasi Komputer ialah 2 waktu seminggu. Pihak pengurusan sekolah diharapkan dapat menyusun jadual waktu yang bersesuaian.

6. Kandungan pekeliling ini hendaklah dimaklumkan pada semua sekolah menengah.

DATO' ASIAH BTE ABU SAMAH
Ketua Pengarah Pendidikan Malaysia

- s.k.
1. Y.B. Datuk Amar Dr. Sulaiman Daud
Menteri Pendidikan Malaysia
 2. Y.B. Dr. Leo Michael Toyad
Timbalan Menteri Pendidikan
 3. Y.B. Dr. Fong Chan Onn
Timbalan Menteri Pendidikan
 4. Ketua Setiausaha
Kementerian Pendidikan
 5. Timbalan Ketua Setiausaha I
Kementerian Pendidikan
 6. Timbalan Ketua Pengarah Pendidikan I
Kementerian Pendidikan
 7. Timbalan Ketua Pengarah Pendidikan II
Kementerian Pendidikan
 8. Timbalan Ketua Setiausaha II
Kementerian Pendidikan
 9. Semua Ketua Bahagian
Kementerian Pendidikan
 10. Ketua Jemaah Nazir Sekolah
Kementerian Pendidikan
 11. Ketua Perhubungan Awam
Kementerian Pendidikan

Appendix B



KEMENTERIAN PENDIDIKAN MALAYSIA
PUSAT PERKEMBANGAN KURIKULUM
PERSIARAN DUTA OFF JALAN DUTA
50604 KUALA LUMPUR.

Tel. : 03-6511522
Faks : 03-6510061
Kawat: : "Pendidikan"
Laman-web: : <http://www.moe.gov.my>

Rujukan Tuan:
Rujukan Kami: KP(PPK) 8601/01/0400/ JldXII (9)
Tarikh: 11 Februari 2000.

Semua Pengarah Pendidikan Negeri

Y.Bhg. Dato'/Datuk/Tuan,

Pelaksanaan Program Komputer Dalam Pendidikan

Dengan hormatnya saya merujuk kepada perkara di atas.

2. Sukacita dimaklumkan bahawa Kementerian Pendidikan telah memperluaskan lagi pelaksanaan Program Komputer Dalam Pendidikan (KDP) ke 332 buah sekolah mulai tahun 1999. Sehubungan ini, kerjasama Y.Bhg. Dato'/Datuk/Tuan adalah diminta bagi memaklumkan kepada sekolah-sekolah yang terlibat untuk melaksanakan program tersebut mengikut garis panduan yang disediakan oleh pihak Pusat Perkembangan Kurikulum.

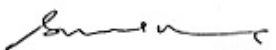
2. Bersama ini disertakan satu salinan Draf Garis Panduan Pelaksanaan Program KDP Sekolah Rendah dan satu salinan Draf Garis Panduan Pelaksanaan Program KDP Sekolah Menengah untuk pihak Y.Bhg. Dato'/Datuk/Tuan perbanyakan dan seterusnya diedarkan ke sekolah-sekolah yang terlibat. Draf Garis Panduan ini juga boleh diperolehi melalui Internet di laman Unit KDP, <http://kdp.ppk.kpm.my> atau <http://202.190.218.5/>.

4. Atas kerjasama Y.Bhg. Dato'/Datuk/Tuan, kami ucapkan sebanyak-banyak terima kasih.

Sekian.

"BERKHIDMAT UNTUK NEGARA "

Saya yang menurut perintah,


(Dr. SHARIFAH MAIMUNAH BT. SYED ZIN)
b.p Pengarah,
Pusat Perkembangan Kurikulum,
Kementerian Pendidikan Malaysia.

s.k 1. Ketua Pengarah Pendidikan Malaysia
2. Timbalan Ketua Pengarah Pendidikan (Jabatan Sekolah)



BAHAGIAN SEKOLAH
JABATAN SEKOLAH
KEMENTERIAN PENDIDIKAN MALAYSIA
PARAS 5, BLOK J (SELATAN)
PUSAT BANDAR DAMANSARA
50604 KUALA LUMPUR

Tel : 03-2686900
Fax : 03-2662389
Laman-web : <http://www.moe.gov.my>

Ruj. Tuan :
Ruj. Kami : KP(BS-PP) 8786/004/35 (8)
Tarikh : 20 Mac 2002

Semua Pengarah Pendidikan
Jabatan Pendidikan Negeri

Y.Bhg. Dato'/Datuk/Tuan/Puan,

**Pelaksanaan Program Komputer Dalam Pendidikan (KDP) Bagi
Projek Pengkomputeran**

Dengan segala hormatnya perkara di atas adalah dirujuk.

2. Projek Pengkomputeran Fasa I di 2400 buah sekolah dan Fasa II di 2000 buah sekolah sedang dibangunkan dengan pesat di seluruh negara. Sebahagian Projek Pengkomputeran Fasa I telahpun siap dan diserahkan kepada pihak sekolah. Namun begitu terdapat sekolah yang tidak mempunyai sebarang agenda pengisian bagi penggunaan makmal tersebut.

3. Sehubungan dengan itu, Mesyuarat Jawatankuasa Penyelarasan Pengisian Projek Pengkomputeran Kementerian Pendidikan Malaysia Kali Ke-2 (Bil. 1/2002) bertarikh 18 Februari 2002 yang dipengerusikan oleh Y.Bhg. Timbalan Ketua Pengarah Pendidikan (Jabatan Teknikal) telah memutuskan supaya sekolah-sekolah tersebut melaksanakan agenda pengisian melalui program Komputer Dalam Pendidikan yang telah dijalankan oleh Unit Komputer Dalam Pendidikan, Pusat Perkembangan Kurikulum.

4. Segala maklumat lanjut berkaitan pelaksanaan pengisian program Komputer Dalam Pendidikan boleh diperolehi melalui Unit Komputer Dalam Pendidikan Pusat Perkembangan Kurikulum, pegawai penyelaras Komputer Dalam Pendidikan di Jabatan Pendidikan Negeri dan sekolah-sekolah yang telah melaksanakan program ini.

5. Diharap pihak Y.Bhg. Dato'/Datuk/Tuan/Puan dapat memaklumkan keputusan mesyuarat tersebut ke sekolah-sekolah yang terlibat dengan projek Makmal Pengkomputeran Fasa I dan II di negeri Y.Bhg. Dato'/Datuk/Tuan/Puan.

6. Kerjasama dan sokongan pihak Y.Bhg. Dato'/Datuk/Tuan/Puan melaksanakan keputusan mesyuarat tersebut amat dihargai.

Sekian. Terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menurut perintah,

HAJI RASHDI BIN RAMLAN
Timbalan Ketua Pengarah Pendidikan (Jabatan Sekolah)
Kementerian Pendidikan Malaysia

(Silu Catatan Rujukan Bahagian Ini Adalah Berhujung)

s.k.

Ketua Setiausaha Kementerian Pendidikan Malaysia

Ketua Pengarah Pendidikan Malaysia

Timbalan Ketua Setiausaha (Kewangan dan Pembangunan)

Timbalan Ketua Pengarah Pendidikan (Jabatan Sekolah)

Timbalan Ketua Pengarah Pendidikan (JAPIM)

Pengarah Bahagian Sekolah

Pengarah Bahagian Teknologi Pendidikan

Pengarah Bahagian Pendidikan Guru

Pengarah Pusat Perkembangan Kurikulum

Setiausaha Bahagian Pembangunan, Penswastaaan dan Bekalan

Sample: A

Single session secondary school class timetable for ICTL programme (form 1).

	7.30	8.10	8.50	9.30	10.10	10.30	11.10	11.50	12.30	1.10	1.50	2.30
Monday		KH	Sains		R	P.F/P.Moral/BC/BT		BI		Mat		
Tuesday		KH	BI		E	Sains		PI / PM		BM		
Wednesday		ICTL	Sivik		H	Mat		BM		Sej		
Thursday		P.I / BC / BT	PS		A		BM	Sains	Geo	Sej		
Friday		PJK	BI	BI	T	Mat	Mat	Geo				

Appendix E

Sample: B

Single session secondary school computer lab timetable for ICTL programme.

	7.30	8.10	8.50	9.30	10.10	10.30	11.10	11.50	12.30	1.10	1.50	2.30
Monday			ICTL – 1B		R			ICTL – 2C				
Tuesday			ICTL – 1A		E	ICTL – 2 A				ICTL – 2F		
Wednesday	ICTL – 1C		ICTL – 2D		H			ICTL – 1E				
Thursday			ICTL – 1D		A	ICTL – 1F		ICTL – 2 B				
Friday	ICTL – 2E				T	MICTL – 1G						

Appendix F

Sample: C

Double session secondary school class timetable for ICTL programme (form 1 or form 2). ICTL classes start before afternoon session school begin.

	11.55	12.30	1.05	1.40	2.10	2.45	3.20	3.55	4.15	4.45	5.20	5.55	6.30
Monday				Geo		PM	KH	R	Sivik		Math	BM	
Tuesday			Sains	BM	BM	Math		E	BI	BC	PS	PS	
Wednesday	ICTL		BI	BI	Geo	Sej	Sej	H	Sains	Sains	Math	PJ	
Thursday			BM	PM	PM	Math	Sej	A	PJ	BI	KH	KH	
Friday					Sains	Sains	BC	T	BC	BM	BM	BI	

Appendix G

Sample: D

A double session secondary school computer lab timetable for ICTL programme. Form 1 and form 2 classes for the afternoon session attend their ICTL lessons in the morning session timetable.

						10.45	11.20	11.50	12.25	12.50	1.25	2.00
Monday					R				ICTL – 1C			
Tuesday					E		ICTL – 2E	ICTL – 1A				
Wednesday					H		ICTL – 2B	ICTL – 2A				
Thursday					A		ICTL – 1E	ICTL – 1B				
Friday					T		ICTL – 2D	ICTL – 1D	ICTL – 2C			

Checklist of Observation

Below is just an example of how teachers can evaluate their pupils' values. The teacher is advised to create their own checklist of observation based on their lesson.

Name: Johana binti Muhammad
 Class: 1 Bestari
 Theme: Computer Hardware
 Learning Area: 2.5 Storage Devices
 Learning Outcomes: 2.5.5 Inculcate values of responsibility, accountability and cooperation.

Instruction : Put a tick (✓) in the relevant boxes. 1 Average, 2 Good and 3 Excellent.

No.	Activities	1	2	3
1.	Able to give views on various storage devices.			
2.	Share ideas in group explaining the differences between primary and secondary storage devices.			
3.	Hand in project on time.			

Signature

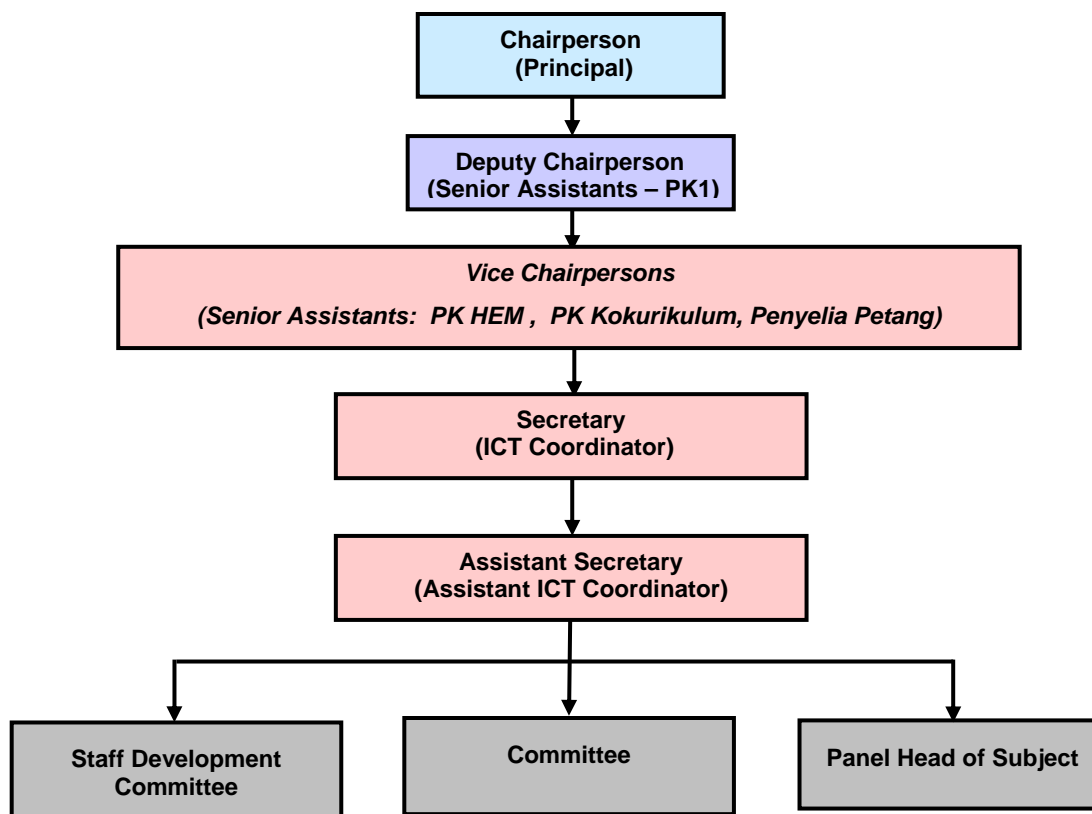
(Cik Lim Guat Bee)

Computer Lab Management

Appendix I

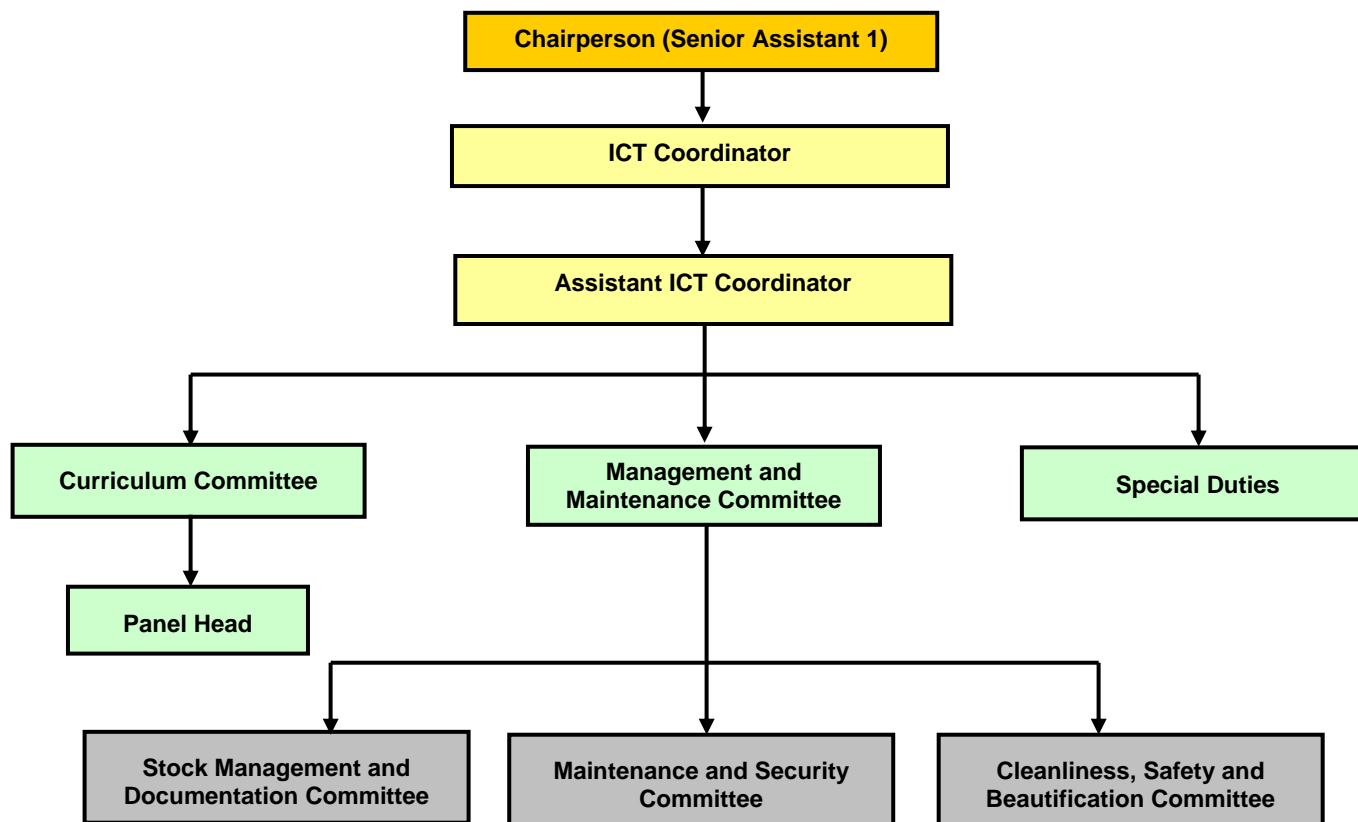
A sample of the organization for the Computer Lab Management

ICT Main Committee Organisation Chart
(Carta Organisasi Jawatankuasa Induk ICT)



A sample of the ICT Working Committee Organization Chart

ICT Working Committee Organization Chart
(Carta Organisasi Jawatankuasa Kerja ICT)



Computer Lab Rules and Regulations

Below are suggestion of rules and regulations for computer lab users.

1. Pupils are prohibited to enter the lab unless authorised by the teacher.
2. Scan diskettes before using them.
3. Report all problems related to the system to the teacher.
4. Do not attempt to repair or tamper with lab equipment.
5. Be responsible when using equipment, software and facilities in the lab.
6. Do not move any equipment from its original position.
7. Do not remove or load any software into the computer.
8. Do not change the settings in the computer.
9. Save all work in external storage device and not in the computer.
10. Do not bring in bags, food and drink into the lab.
11. Turn off the computer accordingly after use.
12. Switch off all power supplies before leaving the lab.
13. Internet facility is strictly for educational purposes only.
14. Teachers should record the use of computer lab in the lab log book.
15. All users should record the use of computers in the computer log book.
16. The Lab should be kept clean and tidy at all times.

Computer Lab Log Book (Teacher)

Sample:

No.	Date	Name	Class	Time		Signature	Remarks
				In	Out		

Computer Log Book (User)

Sample:

No.	Date	Name	PC No	Class	Time		Signature	Remarks
					In	Out		



Pusat Perkembangan Kurikulum
Kementerian Pelajaran Malaysia



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