

Primary School Curriculum

Information Technology (IT)



MINISTRY OF EDUCATION

Bermuda

2001

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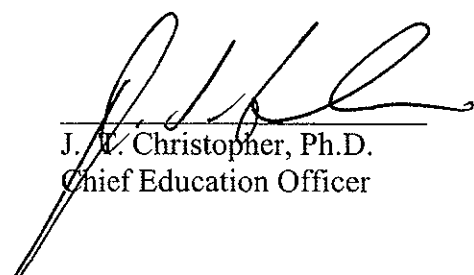
FOREWORD

Quality curriculum is basic to any educational programme. The written curriculum must provide the structure and substance of what is taught to all students. The written curriculum is a guide to teachers to ensure that the knowledge, skills, competencies and resources students need in order to learn are provided during instruction.

In particular, it is acknowledged that knowledge is virtually infinite in that it is continually changing and expanding as “new” knowledge is developed and “old” knowledge is refined. In addition the skills and competencies that students need change as the environment in the total community changes. It is important therefore that a school system has a structure for the instructional programme that provides direction, focus, flexibility and state-of-the-art thinking about each content area.

Because of its strategic geographical position, Bermuda has been influenced continuously by the changes in the relationship between the continents bordering the Atlantic -- North and South America, Africa and Europe. The current interest in the globalization of the world community allows Bermuda to build on its strength in international relations. It is essential that our students become accustomed to viewing the entire world as the area in which they must live and grow. They must integrate knowledge across all subjects in preparation for their adult life. Our curriculum guides must be viewed from this perspective.

A team of teachers, education officers and other persons within the school system and community, drawing from their collective experience in working with young people, has developed this curriculum guide. Input from community representatives on each Curriculum Advisory Committee has assisted us in Bermudianizing the curriculum. All of the contributors share both the pride and the responsibilities of authorship. This guide represents the essential elements of education in Bermuda’s primary schools.



J. W. Christopher, Ph.D.
Chief Education Officer

ACKNOWLEDGEMENTS

The Information Technology primary school curriculum was developed by teachers with the leadership and support of Patricia Callender, Education Officer, Information Technology. This writing team was comprised of diligent and devoted teachers. Appreciation is extended to these teachers for their ability to collaborate amicably and collegially in the production of this professional document. The members of the writing team were:

Sherlyn Jones
Jennifer Williams

The restructured curriculum development process began in 1994 under the leadership of Dr. Helen Stemler, Restructuring Curriculum Coordinator. During 1994-1995, the writing teams in the various content areas developed the frameworks for the entire curriculum development process. From 1995-1997 the curricula for the middle level were created. Thanks also to Dr. Gina Tucker, Curriculum Coordinator 1998-1999. Special thanks to Mrs. Kalreta Conyers-Steede, Education Officer Business Studies, who coordinated the final production of these curriculum documents 1999-2001.

These documents would not have been completed without the support of a very hardworking, dedicated group of people - the secretarial/support staff who typed and assisted with numerous tasks associated with completing these documents. This group includes the following persons:

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Marilyn Dyer	Kim Simons
Lavern Furbert	Theresa Simons
Raquel Furbert	Wanda Stuhlpfarrer
Terrylynn Gibbons	Deshan Thompson
Donna Jacobs	Rochelle Trott

Diana Madeiros -- Professional Editor

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OVERVIEW

The aim of the primary school is to provide for the academic achievement, personal development and group citizenship of early adolescents. In keeping with this aim, the organizational patterns appropriate to the developmental needs of five to twelve year-old students need to be provided.

The curriculum is composed of a common body of knowledge with emphasis placed on mastery skills and achievement measured according to each student's abilities. The development of positive attitudes toward learning, self and others is a basic component of Bermuda's primary school programme. The programme is based on the belief that all students make every effort to succeed when in an environment that fosters and encourages success, regardless of their background or previous level of achievement. Educational development at the primary level should provide adequate preparation for continued experiences. To create an atmosphere of accomplishment in which each student has opportunities for growth, emphasis is placed on:

- opportunities for sharing enriching experiences, creative expressions and exposure to ideas
- enhancement of personal abilities with opportunities to pursue and express them through diversity and supportive activities
- development of a growing sense of responsibility, integrity, self-discipline, reliable judgement and self-respect in each student
- encouragement of acceptance of their roles and responsibilities in the educational process with confidence, enthusiasm and appropriate social and academic behaviours
- provisions of time and opportunity for ethical growth and for the development of responsible values and character

The curriculum guide contains three (3) sections beginning with the Introduction. The cited twelve goals of education direct instructional outcomes in all primary school subjects. Specifically, a curriculum framework has been approved for each subject and is to be used as the basis for the subject specific philosophy, goals and subgoals, performance indicators and scope and sequence. Effective utilization of this framework will establish continuity and progression of instruction throughout all year levels.

The second section of this guide delineates the primary school programme of instruction and contains an overview for Phase A and B that includes: primary rationale, year level requirements, adopted materials of instruction, phase outline, correlation matrix and modules. It is expected that all teachers will focus instruction on the established curriculum objectives outlined in the modules. The final section of this guide contains resources of valuable support for teachers.

GOALS OF EDUCATION

In Bermuda, the Goals of Education provide the direction for primary level education. These twelve (12) goals enable primary level students to:

- develop responsiveness to the dynamic process of learning
- develop resourcefulness, adaptability and creativity in learning and living
- acquire the basic knowledge and skills needed to comprehend and express ideas through words, numbers and other symbols
- develop a wellness approach to life
- gain satisfaction from participating in and appreciating the various forms of artistic expression
- develop a feeling of self-worth
- develop values related to personal and ethical beliefs and to the common welfare of society
- develop an understanding of the role of the individual within a family unit, the role of the family within society and the role of our society in a global context
- develop a sense of personal responsibility in society at the national and international levels
- acquire skills that contribute to self-reliance in solving practical problems in everyday life
- acquire skills and attitudes that will lead to satisfaction and productivity in a career
- develop respect for the environment and a commitment to the wise use of resources.

CURRICULUM AND INSTRUCTION FOR ALL STUDENTS

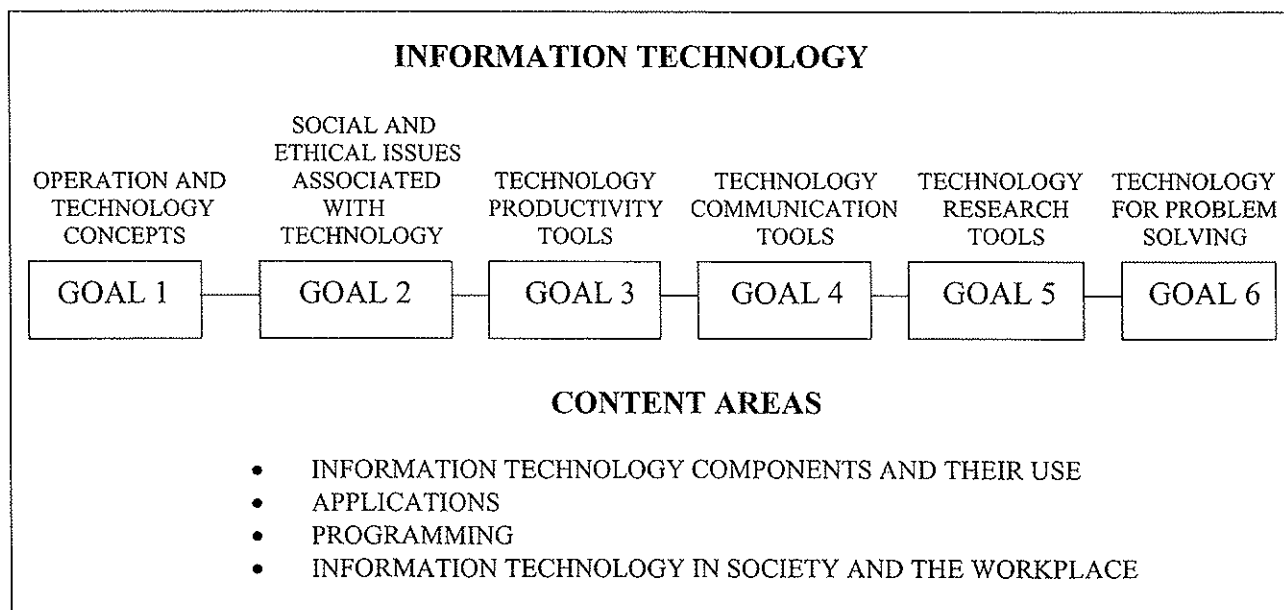
All primary schools will have common programmes designed to offer nine subjects to all students and to give them a knowledge base which will equip them with a foundation that will prepare them to move to the middle school level. There will be a basic core curriculum that will include English language arts, mathematics, science and social studies. These subjects will be supported by a variety of encore subjects, such as health education, physical education, information technology, music and visual arts. Information technology will also be integrated into all subject areas. An integrated curriculum is a meaningful approach to primary instruction that assists students to transfer knowledge within and across all subjects and apply skills and processes developed in subjects to real life Bermuda issues.

It is expected that the implemented curriculum will be based on the premise that all students can learn and that instruction should be differentiated to meet the unique needs of the learner. Further, it is expected that the primary school curriculum will be implemented from a Bermudianized and multicultural perspective as much as is feasible.

INFORMATION TECHNOLOGY PHILOSOPHY

Bermuda has entered the new millennium with technological advances appearing on the scene at warp speed. Technology rich working environments, Internet access readily available in homes and wireless digital communications keeping everyone in touch with everyone else-no longer can our island consider itself another world. For these reasons Information Technology (IT), which provides young people with those necessary skills through which they can access and meaningfully interpret information at their disposal, are a critical component of every student's education. Additionally, students cannot wait until they graduate to begin to develop skills with the tools prevalent in their world but must work with the present technologies as they evolve into the technologies of their own futures.

At Learning Phase A students learn about technology as they use it to develop readiness skills and to explore a number of creative programmes. At Learning Phase B students are exposed to a number of information technology applications as they learn subject matter content. They also learn to use IT as a tool and about the impact that IT is having on their lives and society. At Learning Phase C students refine their skills with computer applications through the Business Studies programme. Students apply these and other skills as they use a variety of technologies within the various disciplines. At Learning Phase D the curriculum can be divided into two sections. The Computer Science courses I and II are intended to provide every student with the basic skills and knowledge needed to live and learn in our highly technical environment. These courses are compulsory. The remaining elective courses are designed to provide students with knowledge and skills in specialized areas such as web bases applications, multimedia and hardware/networking maintenance. In each course students are encouraged to build portfolios that will illustrate their interest and growth during their senior years of study. A student's involvement with IT should create a sense of enjoyment, satisfaction and fun through learning while building skills needed for their future.



Information Technology - P1

Level Code: P1 IT



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GOAL 4 **TECHNOLOGY COMMUNICATION TOOLS**

STUDENTS WILL DEVELOP SKILLS WITH TECHNOLOGY COMMUNICATION TOOLS.

- Subgoal 4.1** Students use telecommunications to collaborate, publish and interact with peers, experts and other audiences.
- Subgoal 4.2** Students use a variety of media and formats to gather and communicate information and ideas effectively to multiple audiences.
- Subgoal 4.3** Routinely and efficiently use on-line information resources to meet the needs for collaboration, research, publications, communications and productivity.

GOAL 5 **TECHNOLOGY RESEARCH TOOLS**

STUDENTS WILL DEVELOP SKILLS WITH TECHNOLOGY RESEARCH TOOLS.

- Subgoal 5.1** Students use technology tools to locate, evaluate and collect information from a variety of sources.
- Subgoal 5.2** Students use technology tools to process data and report results.
- Subgoal 5.3** Students research, evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.

GOAL 6 **TECHNOLOGY FOR PROBLEM SOLVING**

STUDENTS WILL DEVELOP THE ABILITY TO USE TECHNOLOGY TO SOLVE PROBLEMS AND MAKE DECISIONS.

- Subgoal 6.1** Students use technology resources for solving problems and making informed decisions.
- Subgoal 6.2** Students employ technology in the development of strategies of resolving problems in the real world.
- Subgoal 6.3** Use and apply a variety of programming strategies and techniques to solve problems.

INFORMATION TECHNOLOGY GOALS AND SUBGOALS

GOAL 1 OPERATION AND TECHNOLOGY CONCEPTS

**STUDENTS WILL DEVELOP THE SKILLS TO OPERATE
VARIOUS TECHNOLOGIES AND AN UNDERSTANDING OF
TECHNOLOGICAL CONCEPTS.**

Subgoal 1.1 Students develop a sound understanding of the nature and operation of technology systems and can make informed choices among technologies.

Subgoal 1.2 Students are proficient in the use of technology.

GOAL 2 SOCIAL AND ETHICAL ISSUES ASSOCIATED WITH TECHNOLOGY

**STUDENTS WILL DEVELOP AN UNDERSTANDING OF THE
SOCIAL, ETHICAL AND HUMAN ISSUES ASSOCIATED WITH
TECHNOLOGY AND ITS USE.**

Subgoal 2.1 Students understand the ethical, cultural and societal issues related to technology.

Subgoal 2.2 Students practice responsible use of information technology systems, and software and advocate legal and ethical behaviours amongst peers, family and community regarding its use.

Subgoal 2.3 Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits and productivity.

GOAL 3 TECHNOLOGY PRODUCTIVITY TOOLS

**STUDENTS WILL DEVELOP SKILLS WITH TECHNOLOGY
PRODUCTIVITY TOOLS.**

Subgoal 3.1 Students use technology tools to enhance learning, increase productivity, and promote creativity.

Subgoal 3.2 Students use productivity tools to construct technology-enhanced models, prepare publications, multimedia and to produce other creative works.

Subgoal 3.3 Develop the ability to use technology tools and resources to manipulate information, use higher order thinking skills (analysis and synthesis) and communicate.

GOAL 1		Students will develop the skills to operate various technologies and an understanding of technological concepts.			
INFORMATION TECHNOLOGY		PERFORMANCE INDICATORS			
Sub Goals		PS - P2 Learning Phase A	P3 - P6 Learning Phase B	M1 - M3* Learning Phase C	S1 - S4 Learning Phase D
1.1	Students develop a sound understanding of the nature and operation of technology systems and can make informed choices among technologies.	with assistance communicate with others about technology using developmentally appropriate and accurate terminology	discuss common uses of technology in daily life and advantages and disadvantages those uses provide	N/A	students develop a sound understanding of the nature and operation of technology systems and can make informed choices among technologies
1.2	Students are proficient in the use of technology.	with assistance successfully operate a variety of technologies and developmentally appropriate multimedia and technology resources for directed and independent learning activities	successfully operate a variety of technologies and developmentally appropriate multimedia and technology resources for directed and independent learning activities	N/A	students are proficient in the use of technology

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GOAL 2		Students will develop an understanding of the social, ethical and human issues associated with technology and its use.			
INFORMATION TECHNOLOGY		PERFORMANCE INDICATORS			
Sub Goals		PS - P2 Learning Phase A	P3 - P6 Learning Phase B	M1 - M3* Learning Phase C	S1 - S4 Learning Phase D
2.1	Students understand the ethical, cultural and societal issues related to technology.	work cooperatively and collaboratively with peers and demonstrate positive social and ethical behaviours when using technology	discuss common uses of technology in daily life and advantages and disadvantages those uses provide	N/A	students understand the ethical, cultural and societal issues related to technology
2.2	Students practice responsible use of information technology systems, and software and advocate legal and ethical behaviours amongst peers, family and community regarding its use.	practice careful and responsible use of technology systems and software	discuss basic issues related to responsible use of technology and information; and describe personal consequences of inappropriate use	N/A	students practice responsible use of information technology systems, and software and advocate legal and ethical behaviours amongst peers, family and community regarding its use
2.3	Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits and productivity.	students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits and productivity	students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits and productivity	N/A	students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits and productivity

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GOAL 3		Students will develop skills with technology productivity tools.			
INFORMATION TECHNOLOGY		PERFORMANCE INDICATORS			
Sub Goals		PS - P2 Learning Phase A	P3 - P6 Learning Phase B	M1 - M3* Learning Phase C	S1 - S4 Learning Phase D
3.1	Students use technology tools to enhance learning, increase productivity, and promote creativity.	use developmentally appropriate technology resources for communication and illustration of thoughts, ideas and stories	use general purpose and content specific productivity tools and peripherals to support personal productivity, and to facilitate learning	N/A	students use technology tools to enhance learning, increase productivity, and promote creativity
3.2	Students use productivity tools to construct technology-enhanced models, prepare publications, multimedia and to produce other creative works.	create developmentally appropriate products with support from teachers, family members or students partners	use technology tools for individual and collaborative writing, communication and publishing activities to create knowledge products for a variety of audiences	N/A	students use productivity tools to construct technology-enhanced models, prepare publications, multimedia and to produce other creative works
3.3	Develop the ability to use technology tools and resources to manipulate information, use higher order thinking skills (analysis and synthesis) and communicate.	use a variety of developmentally appropriate media and technology resources for directed and independent learning activities	with some guidance, develop the ability to use, developmentally appropriate technology tools and resources to manipulate information, use higher order thinking skills and communicate	N/A	develop the ability to use technology tools and resources to manipulate information, use higher order thinking skills (analysis and synthesis) and communicate

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GOAL 4		Students will develop skills with technology communications tools.			
INFORMATION TECHNOLOGY		PERFORMANCE INDICATORS			
Sub Goals		PS - P2 Learning Phase A	P3 - P6 Learning Phase B	M1 - M3* Learning Phase C	S1 - S4 Learning Phase D
4.1	Students use telecommunications to collaborate, publish and interact with peers, experts and other audiences.	use technology resources for communication and illustration of thoughts, ideas and stories	use technology tools for individual and collaborative writing, communication and publishing activities to create knowledge products for various audiences	N/A	students use telecommunications to collaborate, publish and interact with peers, experts and other audiences
4.2	Students use a variety of media and formats to gather and communicate information and ideas effectively to multiple audiences.	gather information and communicate with others using telecommunications, with support from teachers, family members or student partners	develop the ability to use telecommunications efficiently and effectively to access remote information and communicate with others in support of direct and independent learning and for pursuit of personal interests	N/A	students use a variety of media and formats to gather and communicate information and ideas effectively to multiple audiences
4.3	Routinely and efficiently use on-line information resources to meet the needs for collaboration, research, publications, communications and productivity.	with assistance uses on-line information resources to meet the needs for collaboration, research, publications, communications and productivity	develop the ability to use on-line information resources to meet the needs for collaboration, research, publications, communications and productivity	N/A	routinely and efficiently use on-line information resources to meet the needs for collaboration, research, publications, communications and productivity

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GOAL 5		Students will develop skills with technology research tools.			
INFORMATION TECHNOLOGY		PERFORMANCE INDICATORS			
Sub Goals		PS - P2 Learning Phase A	P3 - P6 Learning Phase B	M1 - M3* Learning Phase C	S1 - S4 Learning Phase D
5.1	Students use technology tools to locate, evaluate and collect information from a variety of sources.	use technology resources (e.g., puzzles, logical thinking programs, writing tools, digital cameras, drawing tools) for communication and illustration of thoughts, ideas and stories	use technology resources (e.g., calculators, data collection probes, videos, educational software) for problem-solving, self directed learning and extended learning activities	N/A	students use technology tools to locate, evaluate and collect information from a variety of sources
5.2	Students use technology tools to process data and report results.	N/A	use technology resources for problem solving, self-directed learning and extended learning activities; with assistance determine when technology is useful and select the appropriate tools and technology resources to address a variety of tasks and problems	N/A	students use technology tools to process data and report results
5.3	Students research, evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.	N/A	N/A	N/A	students research, evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks

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GOAL 6		Students will develop the ability to use technology to solve problems and make decisions.			
INFORMATION TECHNOLOGY		PERFORMANCE INDICATORS			
Sub Goals		PS - P2 Learning Phase A	P3 - P6 Learning Phase B	M1 - M3* Learning Phase C	S1 - S4 Learning Phase D
6.1	Students use technology resources for solving problems and making informed decisions.	use technology resources for communication and illustration of thoughts, ideas and stories	evaluate electronic information sources	N/A	students use technology resources for solving problems and making informed decisions
6.2	Students employ technology in the development of strategies of resolving problems in the real world.	N/A	use technology and telecommunications resources for problem-solving activities to develop solutions or products	N/A	students employ technology in the development of strategies of resolving problems in the real world
6.3	Use and apply a variety of programming strategies and techniques to solve problems.	N/A	N/A	N/A	use and apply a variety of programming strategies and techniques to solve problems

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INFORMATION TECHNOLOGY COMPONENTS AND THEIR USE	INFORMATION TECHNOLOGY SCOPE AND SEQUENCE			
	PS - P2 Learning Phase A	P3 - P6 Learning Phase B	M1 - M3* Learning Phase C	S1 - S4 Learning Phase D
Hardware	• basic computer components • computer care and use • key functions: letters, numbers, capitals, other characters • mouse operation • finger placement • other technologies	• computer components • computer care • operate hardware • printer operation • computer concepts • managing electronic information	N/A	• computer components • other technologies • proper handling and use • computer concepts • keyboarding • printer operation • computer concepts • managing electronic information • trouble shooting and repair
Software	• handling and care of software • log on/off • navigating software • multimedia	• launching software • open close restore window • navigating software • help menu • multimedia	N/A	• modifying software options • multimedia
Communication	N/A	• navigating web sites • performing simple internet searches • electronic mail	N/A	• navigating the WWW • electronic mail • web-based technologies • network design • network implementation • network maintenance

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APPLICATIONS	INFORMATION TECHNOLOGY SCOPE AND SEQUENCE			
	PS - P2 Learning Phase A	P3 - P6 Learning Phase B	M1 - M3* Learning Phase C	S1 - S4 Learning Phase D
Productivity Tools	• simple painting tools • open/save files • simple drawing tools • adding graphics • word processing • editing using a word processor	• word processing tools for productivity • editing using a word processor • enhancing your work with graphics • drawing/paint software to produce and print graphics • appropriate tool selection	N/A	• word processing and desktop publishing tools • spreadsheets(charts, graphs) • advanced desktop publishing • graphics
Knowledge Tool	• using software to communicate concepts and interests • skill practice • electronic correspondence	• using software to explore concepts and interests • skill practice • beginning spreadsheets: number concepts • beginning databases: organizing information • conducting keyword searches using electronic resources	N/A	• developing learning tools and materials • surveying the WWW • conducting research using electronic resources and the internet
Problem Solving	• computer simulations	• computer simulations	N/A	• designing simulations • conducting investigations

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PROGRAMMING	INFORMATION TECHNOLOGY SCOPE AND SEQUENCE			
	PS - P2 Learning Phase A	P3 - P6 Learning Phase B	M1 - M3* Learning Phase C	S1 - S4 Learning Phase D
Web Page Design	N/A	N/A	N/A	• web page design
Programming Languages	N/A	N/A	N/A	• computer-aided design • robotics • karel • systems analysis • logic
Multimedia	N/A	N/A	N/A	• website maintenance

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INFORMATION TECHNOLOGY IN SOCIETY AND THE WORKPLACE	INFORMATION TECHNOLOGY SCOPE AND SEQUENCE			
	PS - P2 Learning Phase A	P3 - P6 Learning Phase B	M1 - M3* Learning Phase C	S1 - S4 Learning Phase D
Appreciation	• displays enjoyment when using technology • creative expressions • technology as a shared resource • computer care	• technology benefits • creative expressions • role models	N/A	• creative expressions
Technology In Our Lives	• computer around us • working with technology • you, me, and technology	• computer in daily use • current technology issues: privacy, ethics, security, etc. • you, me and technology	N/A	• current technology issues: privacy, ethics, security, etc. • careers

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INFORMATION TECHNOLOGY IN SOCIETY AND THE WORKPLACE Cont'd.	INFORMATION TECHNOLOGY SCOPE AND SEQUENCE			
	PS - P2 Learning Phase A	P3 - P6 Learning Phase B	M1 - M3* Learning Phase C	S1 - S4 Learning Phase D
Keyboarding	• touch skills • posture • alpha keyboard • homerow keys	• touch skills • posture • ergonomics • alpha keyboard • numeric key pad • punctuations • formatting text	N/A	N/A

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REFERENCES

Qualifications and Curriculum Authority. National Curriculum for England. Department of Education and Employment, 1999.

National Educational Technology Standards for Students. International Society for Technology in Education, 1998.

Information Technology K – 7 Integrated Resource Package. British Columbia Ministry of Education, 1996.

INTRODUCTION TO PRIMARY SCHOOL CURRICULUM

The primary school level continues to provide learning experiences that satisfy the natural curiosity of young children, stimulate their imagination and enhance their appetite for learning. The most important function of the primary level of education is the mastery of the fundamental skills necessary for the continued pursuit of learning.

Primary school education helps all children to:

- acquire permanent literacy and numeracy skills
- communicate effectively
- think scientifically and logically
- develop manipulative skills, artistic talents and physical skills
- cultivate good health habits
- develop spiritual, ethical and social values

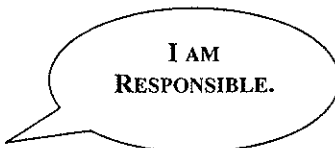
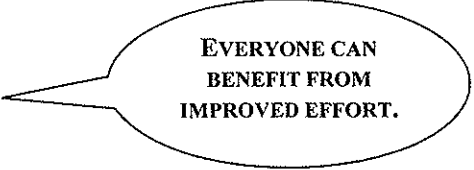
The primary school curriculum is a written guide that identifies the goals and curriculum objectives that teachers establish for students to achieve. It makes visible the articulation necessary for preschool through senior level programmes so that students do not have large gaps in their understanding, skills and competencies. Its scope and sequence also allows teachers to plan linkages across the curriculum so those cross-curricular connections can be made more easily between and among various subjects.

Given the above characteristics, the primary school curriculum is intended to provide students opportunities to:

- discuss, explore, investigate and hypothesize
- find solutions to real problems
- utilize both concrete and abstract reasoning skills
- process information at formal operations level

The following section outlines the curriculum to be taught in the following areas in Bermuda's primary schools.

- English Language Arts
- Mathematics
- Science
- Social Studies
- Health Education
- Information Technology
- Physical Education
- Music
- Visual Arts

BELIEFS ABOUT STUDENT LEARNING	
	
CAUSES	
External Luck Task	Internal Ability Effort
BELIEFS	
Ability defines achievements Ability is limited Intelligence cannot change Intelligence has one dimension Teachers transmit knowledge	Effort improves performance Ability can be acquired Intelligence can be learned There are many intelligent behaviours Learners construct their knowledge
SELF-EFFICACY	
I can not do that I can not learn that	I can learn to do it I can learn the things that I need to know to enable me to do it
CONCEPTS	
Other – referenced They are better than me	Self-referenced I am good at Mathematics
EMOTION	
Negative or Neutral I hate school I do not care	Positive I like to do this Learning makes me happy
OUTCOME	
     	

CURRICULUM TIME ALLOTMENTS

Carroll's (1989) definition of instruction time is "opportunity to learn."

*"The amount of time spent on schoolwork influences school learning."
(Evans-Ardriss, 2000; Berliner, 1990)*

*Instructional time and quality together are one of the three main factors that influences students' educational outcomes.
(Young et. al., 1996)*

The Ministry of Education recognizes the importance of learning time and specifies the number of instructional days that government schools must provide. In addition to the number of days the Ministry also specifies the number of hours of instruction that should occur each school day. In order to determine the best way to apportion these hours, a review of literature was conducted to find exemplars, instances of learning times during school weeks in quality school systems. An assessment of current practices was also taken into consideration.

The Ministry of Education has four goals: literacy, numeracy, infusion of technology and staff development. As the Bermuda government schools introduce new curricula for primary education to support these goals, the curriculum allotment chart will provide guidance as to the optimum time that should be spent delivering each area of learning and also the optimum number of instructional hours that will best promote student literacy and numeracy.

The curriculum time allotment chart outlines the total of contact time between teachers and students at Learning Phase A summing to 1335. This figure is composed of 1300 contact minutes and 35 transition minutes. At Learning Phase B 1465 contact minutes plus 35 transition minutes sums to 1500 minutes per week.

Transition time is defined as the non-instructional time before and after some learning activity (Berliner, 1990). Recess and lunch allow for transitions that do not cut into instructional time. Other transitions occurs between subjects. The allocation of transitional time has been included to provide practical expectations.

It is important to note that transition minutes do not constitute lost time. The best-run classrooms require a short period of time to allow students to conclude their work, change their mind sets, put materials away and to prepare for the coming activity.

CURRICULUM TIME ALLOTMENT CHART

LEARNING PHASE A: PRESCHOOL- PRIMARY TWO* AND LEARNING PHASE B: PRIMARY THREE-PRIMARY SIX**

Subject	Learning Phase A PS-P2*		Learning Phase B P3-P6**	
	Minutes/Week (min/wk)	% Percentage of Time/Week	Minutes/Week (min/wk)	% Percentage of Time/Week
English Language Arts	450	34	450	30
Mathematics	330	24	330	22
Science	120	9	150	10
Social Studies	120	9	150	10
Health Education	60	4.5	60	4
Information Technology	60	4.5	90	6
Physical Education	90	7	120	8
Music	90/2	7	120/2	8
Visual Arts				
Transition Time	15	1	30	2
Totals	1335	100%	1500	100%

All subjects have been written with consideration of the allocated time for each discipline. Each subject is to be delivered as specified for the following duration:

Delivery Weeks/year: 34 weeks
 Optional Weeks: 4 weeks (school events and special projects)
 Total Weeks/year: 38 weeks
 =====

NB: For the purpose of this document, time allocations have not been assigned to subjects at the PreSchool level.

Information Technology - P1

Level Code: P1 IT



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2001

PRIMARY SCHOOL PHASE A OVERVIEW

Subject Title: Information Technology

Subject Code: P1 IT

Time Allotted: 60 min/wk, (10 min. Keyboarding, 50 min. IT)

RATIONALE

The purpose of this primary school Information Technology curriculum is to prepare students to live and learn in highly technological environments by exposing them to a variety of these technologies and their uses as well as the impact they are having on our society and the workplace. It is designed to employ information technologies as learning tools, which allow students to present new information in interesting ways. Students will gain confidence with information technology individually and collaboratively problem solve and conduct research to explore a variety of topics related to other curriculum areas and their own interests.

These goals for students are achieved through:

- providing opportunities for students to learn with and about a variety of technologies
- the development of the skills needed to apply these technologies for different tasks in a variety of settings
- participation in activities that are meaningful, enjoyable and allow them to use their creativity

PRIMARY ONE (P1) REQUIREMENTS

The requirements for this level are as follows:

• Performance Assessment - Participation in discussions - Operation of computer system - Use of tools - Navigate software - Positive behaviour with technology - Use keyboarding techniques	70%
• Product Assessment - Portfolio containing computer generated documents designed for a variety of purposes and audiences	30%
• Written Assessment	N/A
Total	100%

MATERIALS OF INSTRUCTION (Adopted Text)

Milburn, MaryJo Fante. Basic Computer Skills. SRA, 2001

PHASE A OUTLINE

P1 Module Titles A - D	P2 Modules Titles A - D	P3 Modules Titles A - D
A. IT Components and Their Use 8 - computer components - computer operation - equipment care - keyboard and mouse techniques - software handling and care - software navigation - software operation - other technologies	A. IT Components and Their Use 8 - computer components - computer operation - equipment care - keyboard and mouse techniques - software handling and care - software navigation - software operation - other technologies	A. IT Components and Their Use 8 - computer components - operation and care - network use - special purpose keys - files - window/desktop - printing - software resources - Internet - other technologies
B. Computer Applications .. 20 - computer as a tool - simple word processing tools - simple graphics tools - new - edit - document management - computer applications for communicating - computer applications for original work	B. Computer Applications.. 20 - computer as a tool - document, creation & editing - document management - more word processing tools - more graphics tools - computer applications for communicating - computer applications for original work	B. Computer Applications ... 20 - computer as a tool - edit menu - file menu - document management word processing programs and features - simple formatting - using ready-made graphics - practising skills with graphics tools - computer applications for communicating - computer applications for original work

**C. IT In Society and
Workplace 6**

- user etiquette
- sharing
- peer tutoring
- cooperation
- ethics
- positive behaviour
- consideration for others
- care and safety rules
school property
- personal use
- pleasure
- learning
- technology around us
- technology at work

**C. IT In Society and
Workplace 6**

- user etiquette
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Subtotal 34
Optional Weeks 4
Total Weeks 38

Subtotal 34
Optional Weeks 4
Total Weeks 38

Subtotal 34
Optional Weeks 4
Total Weeks 38

PRIMARY SCHOOL

check one: P1 ☒ P2 ☐ P3 ☐ P4 ☐ P5 ☐ P6 ☐

Information Technology

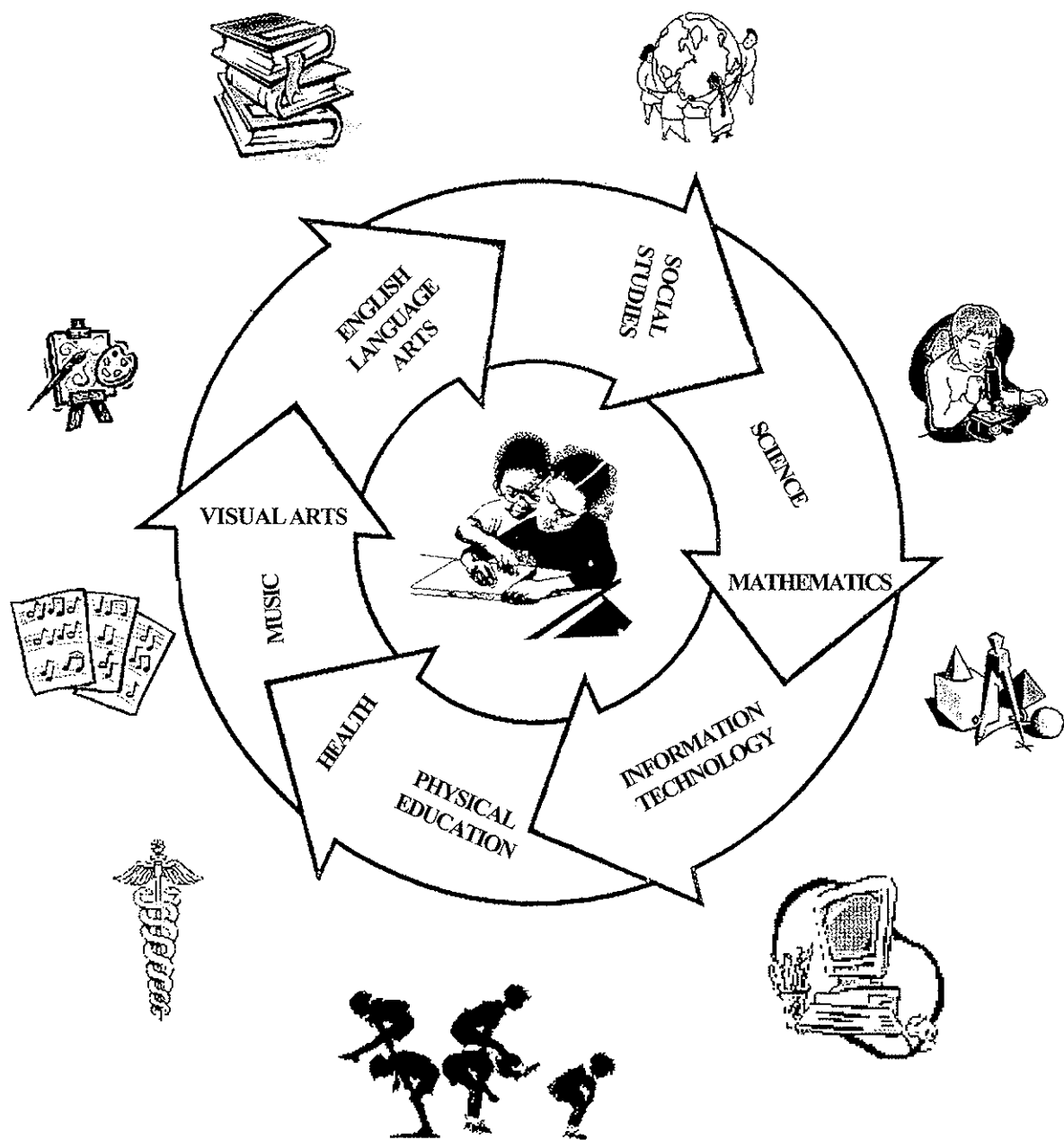
GOALS			SUBGOALS	MODULE & CURRICULUM CORRELATION MATRIX		
1	Operation & Technology Concepts	1.1	Understand technology	x		x
		1.2	Use technology	x		x
2	Social & Ethical Issues Associated With Technology	2.1	Technology issues			
		2.2	Positive use and ethics			x
		2.3	Positive attitudes			x
3	Technology Productivity Tools	3.1	Enhance learning		x	
		3.2	Skills with tools		x	
		3.3	Manage & manipulate data		x	
4	Technology Communication Tools	4.1	Interaction with others			
		4.2	Communication of ideas		x	
		4.3	Tools & resources			
5	Technology Research Tools	5.1	Access data			
		5.2	Process data			
		5.3	Evaluate data & resources			
6	Technology For Problem Solving	6.1	Using resources			
		6.2	Apply solutions & strategies			
		6.3	Programming			
CONTENT STRUCTURE		IT Components And Their Use		x		x
		Applications			x	
		Programming				
		IT in Society And The Workplace				x
			MODULES	A	B	C

MODULE KEY

A - IT Components and Their Use

B - Computer Applications

C - IT in Society and the Workplace



Module A

INFORMATION TECHNOLOGY

Module Title: IT Components and Their Use Time allotted: 8 weeks	Sequence Reference: P1 IT-A						
	PHASE A				PHASE B		
	PS	P1	P2	P3	P4	P5	P6
	☐	☒	☐	☐	☐	☐	☐
Subgoal Emphasis: 1.1 - 1.2 Operation and Technology Concepts	Content Focus: IT Components and Their Use						
Curriculum Objectives:				Content Detail:			
At the end of this module, students will: - identify the basic components of a computer system - identify care of the basic components of a computer system - demonstrate the correct use of the keyboard and mouse - when assisted by the teacher, demonstrate the ability to start and shutdown a computer - use log-on name or number - with assistance open and save files - handle software appropriately - use age-appropriate software - with assistance, navigate age appropriate software - identify and successfully operate other technologies				- basic components: monitor, keyboard, CPU, mouse, printer, headphones, speakers, CD-ROM drive, microphone, etc.; - computer care: classroom help protocol, avoid dust, dirt, food, drinks, careless movements, direct sunlight (disks), use clean hands; safe distance from monitor, mouse pad; - mouse techniques: move, point, click, drag; - keyboard; numbers, letters, spacebar, return/enter; - user protocol: log on. log off/ log in. log out; user name/number, start up, shut down; - software care: careful handling of software diskettes, avoid magnetism, telephones; CD-ROM: inserting and removing a CD-ROM; - types of software: interactive/talking books, educational software, writing software, colouring software, etc.; - getting around the desktop: open file, save menu, save icon ; cursor, scroll bar, hourglass/busy, - navigating software: icons: selection and de-selection of icons, icon meanings; menu: menu choices, pull-down; "hotspots" on the screen, forward and back arrows; exit programme, stop, quit; printing documents, print icon; - VCR/ audio tape recorders, CD player, remote control, etc.			

Module Title: IT Components and Their Use	Sequence Reference: P1 IT-A
Recommended Instructional Strategies:	Recommended Formative Assessment Strategies:
Students develop skills in this area through observation and practice. They should be encouraged to develop independence and confidence as technology users. • Introduce students to the computer. Ask if they have ever used one before. Allow them to describe some of the things they and other people do with computers. (see IT Components and Their Use) Tell them that there are things we do to take care the equipment. Review rules and care: avoid dust, dirt; use clean hands; use careful actions, etc. • Tell students about proper use: not sitting too close, avoid having earphones too loud, etc. • Help students learn the names of computer components by pointing to main parts of system and reciting its name and use. Allow students to play computer bingo where they mark pictures as you call out their names or descriptions. • Have students draw a picture of a computer they have invented. Ask students to identify what their computer can do. Guide students in a discussion of the characteristics and limitations of computers: not alive, a machine, follows instructions, etc. • Explain the relationship between software and the computer. Demonstrate proper techniques when handling software: diskettes, CD-ROMs. • Help students to log on and log off. Encourage students to help each other. • Help students develop their keyboard and mouse techniques by exploring software that requires them to click and drag. When word processing help them to locate letters and number keys and to space words. • Demonstrate opening and saving documents. • Demonstrate launching programmes with icons. Help students to successfully interact with software by helping them to focus on the screen. Help them to interpret the environment. Draw attention to similarities in real environments and real objects as well as how things behave. Show how the cursor changes as you roll over "hot spots" on the screen and how hot spots can make things happen. • Help students to navigate software environments and understand cues such as arrows, scroll bars, clock/hourglass, etc. • Give students opportunities to assist with the operation of a variety of other classroom technologies eg: VCR, disc player, OHP, etc.	Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding. • Students can identify computer components upon request and use the correct names when interacting with peers. • Students participate in discussion and can describe some uses of computers. • Observe how well students obey rules and observe the proper care of equipment. • Have students launch software using an icon on the desktop. Observe the students' ability to use the mouse to point, click and drag with a variety of software types. • Have students launch software using an icon on the desktop. Observe the students' ability to use the keyboard to key letters and numbers.

Summative Assessment:

Assessments given at the end of a module where the data is used to generate grades.

- **Performance:**
 - When orally given the name of a computer component, students can correctly indicate that component by pointing
 - Gauge the students' understanding of the operation of a computer system: At the computer ask students to describe how to log on to the computer; open a particular document; type a few letters or draw a picture; close the document.
 - Ask students to demonstrate their favourite electronic book. Observe how well the student uses keyboard and mouse techniques.

Special Resources:

(materials, equipment & community involvement)

- | | |
|--|---|
| <ul style="list-style-type: none"> • Computer system • MS Works • Amazing Writing Machine • Kid Pix Deluxe Studio • Theme Weavers: Animals • Theme Weavers: Nature | <ul style="list-style-type: none"> • Sammy's Science House • Trudy's Time & Place • Bailey's Book House • teacher-made bingo cards, equipment labels • paper, crayons, modelling clay, etc |
|--|---|

References - Teacher:

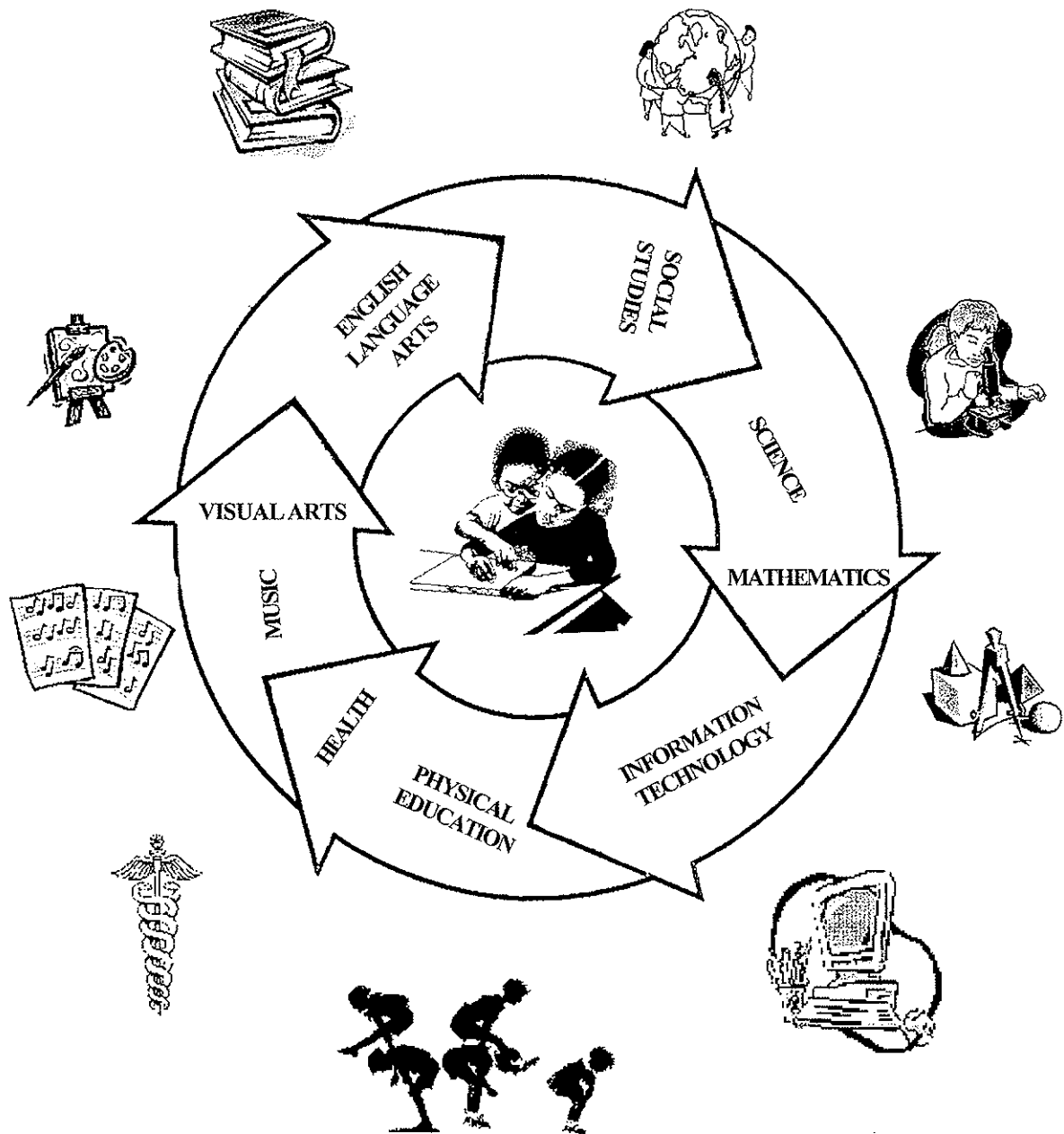
- Willis, Stephens & Matthew, Using Technology In The Classroom. Allyn & Bacon, 1996
- Shelly, Cashman, Counter, Teachers Discovering Computers: A Link to the Future. 1999
- Giesert & Futnell, Teachers, Computers & Curriculum: Using Computers in the Classroom. 1999

References - Student:

- Basic Computer Skills level K

Glossary:

- refer to text



Module B

INFORMATION TECHNOLOGY

Module Title: Computer Applications

Sequence Reference: P1 IT-B

Time allotted: 20 weeks

PHASE A

PHASE B

PS

P1

P2

P3

P4

P5

P6

☐
☒
☐
☐
☐
☐
☐

Subgoal Emphasis:

- 3.1 - 3.3 Technology Productivity Tools
- 4.2 Technology Communication Tools

Content Focus:

- Computer Applications

Curriculum Objectives:

At the end of this module, students will:

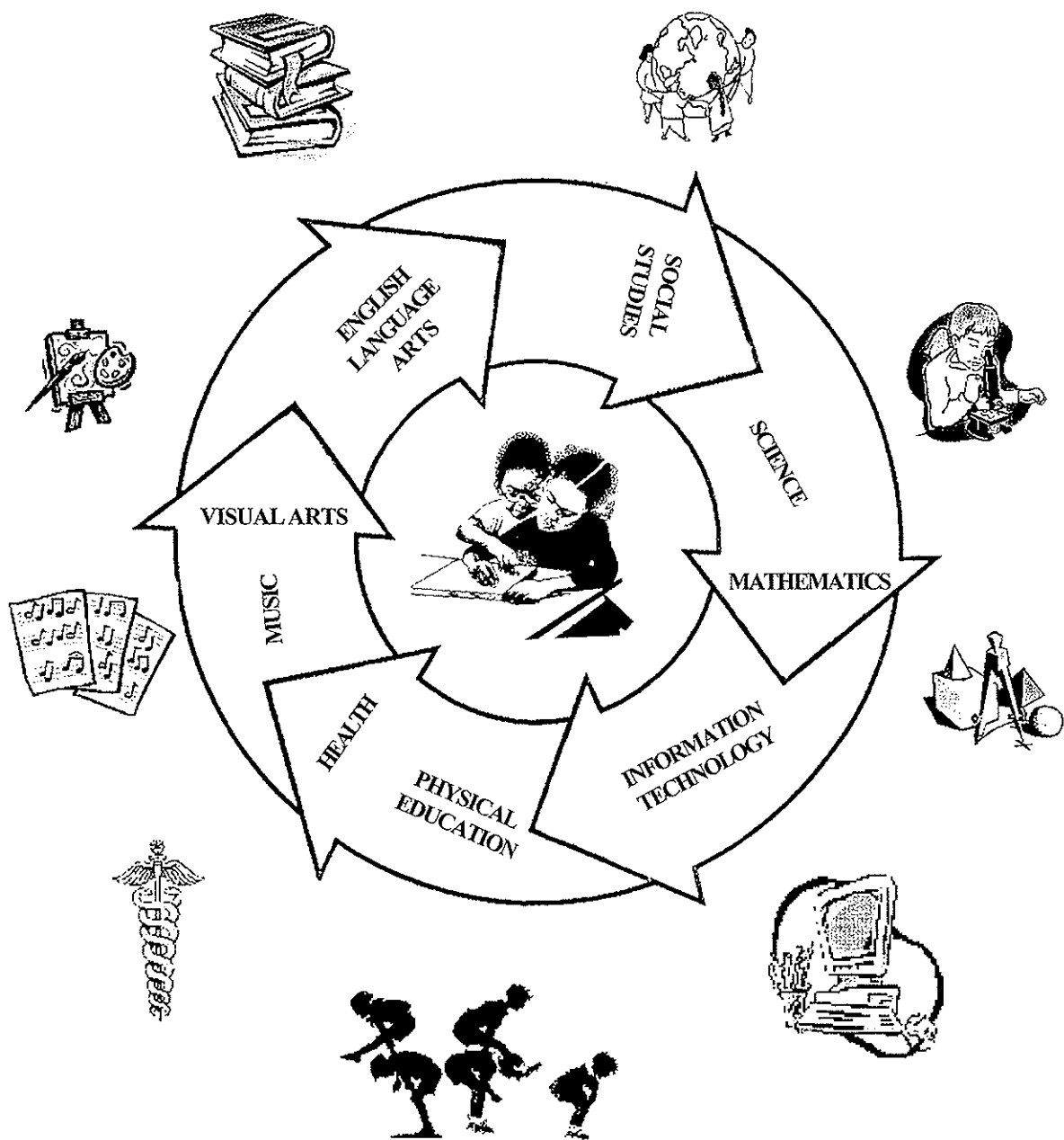
- open, create, save, print and close computer generated documents with the assistance of the teacher
- use age-appropriate applications to edit computer generated documents
- under the guidance of the teacher, use age-appropriate word processing programmes
- under the guidance of the teacher, use colouring programmes
- with the assistance of the teacher explore painting and drawing tools
- with the assistance of the teacher, use application tools to communicate with others
- print simple documents with the assistance of the teacher

Content Detail:

- the computer as a writing tool: word processor,
- type: letters, numbers;
- spacing: spacebar;
- shift: capital letters;
- backspace: erase, delete characters;
- the computer as a tool for pictures: graphics programmes
- graphics menu: lines, shapes, brush, pen, etc.; colour selection
- file menu: open, new/create, save, print and close
- editing: change work; completion of work already started; add text, change/ finish pictures
- writing: words sentences, stories, poems; drawing; colouring;
- communicating with peers, parents and others;
- sharing information,
- creation of original work for pleasure;
- illustration of stories and ideas

Module Title: Computer Applications	Sequence Reference: P1 IT-B
Recommended Instructional Strategies:	Recommended Formative Assessment Strategies:
- As students work through this module, identify opportunities to reinforce file management: open, create, save, print, etc. See IT Components and Their Use module - Have students create a graphic using a variety of paint/draw tools. Demonstrate tools and allow students to try them out. Allow more able students to work independently. Let students use the type tool to write their names on their picture - Let students complete an electronic colouring book page. - Have students use the stamp tool to create a number catalogue. Example: use the type tool to type the number 6; use the stamp tool to stamp 6 butterflies, etc. Allow students to print and save their work. - Have students use paint /draw tool to create a self-portrait. Students can type their names at the bottom - Ask students to supply uses for a word processor. Open a new document. Head the page by having the student type his/her own name. Students can create an alphabet family. Use at least 14 font. Demonstrate pressing return after each letter to create a list. Assist students as they print their work. (This activity continues from the previous one.) After typing all letters, students can add words to each creating word families. Example: A apple, arm, ax; B bird, book, box. Demonstrate how to write words using the keyboard. Point out how the words wrap when they run out of space. Assist them with the appropriate punctuation. Help students find suitable stamps or rebus symbols. Have students save and print their work. - Create a template with a box for inserting a graphic. Have students link strings of words to create funny or silly sentences. Students can work in pairs or with the teacher. Demonstrate how to enlarge stamps and place them in the graphics box. Post this work for all students to share. - Use a greeting card template or wizard to help students create a greeting card. Guide them in the selection of appropriate graphics.	Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding. - Observe students as they work to ensure students are entering letters and numbers correctly. - Observe students as they work to ensure they use the spacebar, backspace and enter keys correctly. - Call out the name of paint/draw tools and ask students to select each and make a shape using it. Look at the monitor to determine if students select the correct one. Let students use the eraser tool before calling the next tool.

Module Title: Computer Applications	Sequence Reference: P1 IT-B
Summative Assessment:	
Assessments given at the end of a module where the data is used to generate grades. • Product Assessment - Student portfolio should contain samples of the following: - colouring book illustrations; original artwork, illustration word processed documents – words, sentences, stories, etc. in support of a variety of curriculum areas • Performance Assessment - student demonstrates competent and confident use of word processing and paint/draw tools	
Special Resources: (materials, equipment & community involvement)	
• Computer system • Amazing Writing Machine • Kid Pix Deluxe Studio	• MS Works • paper, crayons, markers,
References - Teacher:	References - Student:
• Willis, Stephens & Matthew, <u>Using Technology In The Classroom</u>. Allyn & Bacon, 1996 • Shelly, Cashman, Counter, <u>Teachers Discovering Computers: A Link to the Future</u>. 1999 • Giesert & Futnell, <u>Teachers, Computers & Curriculum: Using Computers in the Classroom</u>. 1999	• <u>Basic Computer Skills</u> Level K
References - Student:	
• refer to text	



Module C

INFORMATION TECHNOLOGY

Module Title: IT in Society And The Workplace Time allotted: 6 weeks	Sequence Reference: P1 IT-C						
	PHASE A				PHASE B		
	PS	P1	P2	P3	P4	P5	P6
	☐	☒	☐	☐	☐	☐	☐
Subgoal Emphasis: 1.1 - 1.2 Operation and Technology Concepts 2.2 - 2.3 Social and Ethical Issues Associated with Technology	Content Focus: IT in Society And The Workplace						
Curriculum Objectives:				Content Detail:			
At the end of this module, students will: - work cooperatively with peers and others when using technology - demonstrate positive and ethical social behaviour when using technology - demonstrate a willingness to use technology - use technology for creative expression - observe care and safety rules when operating technology - explain the importance of technology in their own lives - in age-appropriate language, describe how they use technology - use age-appropriate language to identify persons who use technology				- sharing: peer to peer sharing, sharing with others, technology tutors, assisting others, task sharing, taking turns, time management - noise management, respect; - consideration for: settings, privacy of others, work of other students; - appropriate treatment of shared equipment - software for: music, visual art, creative writing - observe school rules; - care: avoid dust, dirt, food, drinks, magnetism, careless movements, direct sunlight (disks), use clean hands; - operate at safe distance from monitor; - personal experiences of students - playing games, with parents, learn new skills, drawing & painting, listen to stories, etc. - other technologies: telephone, TV, stereo, video, cash register, microwave & other appliances, grocery scanners, etc.			

Module Title: IT in Society and Workplace	Sequence Reference: P1 IT-C
Recommended Instructional Strategies:	Recommended Formative Assessment Strategies:
• Set the stage for working with technologies by having discussions of the rules. Help students learn to apply these rules by presenting them with and “what if...” & “what would you do...” situations. Reinforce positive behaviour and habits. • Allow students to take turns assisting with caring for the computer: dusting the keyboard, wiping off the monitor, etc. • Assign computer buddies. Have students draw pictures of themselves and computer buddies and describe what activity they are doing. • Help students to identify when it is their turn to use the computer. • Encourage students to share: Use a piece of wool and have students take turns and press the keys on their side of the keyboard. Reinforce the use of keyboarding techniques during this activity. • Develop the self-concept of students being technology user by reinforcing when and how students are using a variety of technologies. Ensure that students each get the opportunity to use the tape recorder, the CD player, computer games, multimedia stories, remote for TV or VCR, etc. • Have students draw pictures of themselves using technology. Use as part of a class collage of technology users. • Show students pictures of technology users. Encourage them to participate in discussions of where they have seen this activity taking place and perhaps what they think the people were doing.	Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding. • Observation of actions and interactions amongst students. • Observation of the participation of individual students during discussions • Observation of the participation of individual students in the care and maintenance of classroom technologies.

Module Title: IT in Society and Workplace

Sequence Reference: P1 IT-C

Summative Assessment:

Assessments given at the end of a module where the data is used to generate grades.

- **Performance Assessment**
 - Students should consistently demonstrate positive behaviour with peers when interacting with technology.
 - Students can describe how they and others use technology.
 - Students can be observed adhering to care and use rules.

Special Resources:

(materials, equipment & community involvement)

- Computer system
- Draw/paint program
- magazines
- paper, crayons, markers

References - Teacher:

- Willis, Stephens & Matthew, Using Technology In The Classroom. Allyn & Bacon, 1996
- Shelly, Cashman, Counter, Teachers Discovering Computers: A Link to the Future. 1999
- Giesert & Futnell, Teachers, Computers & Curriculum: Using Computers in the Classroom. 1999

References - Student:

- Basic Computer Skills Level K

Glossary:

- refer to text

Information Technology - P2

Level Code: P2 IT



MINISTRY OF EDUCATION

Bermuda
2001

PRIMARY SCHOOL PHASE A OVERVIEW

Subject Title: Information Technology

Subject Code: P2 IT

Time Allotted: 60 min/wk, (10 min. Keyboarding, 50 min. IT)

RATIONALE

The purpose of this primary school Information Technology curriculum is to prepare students to live and learn in highly technological environments by exposing them to a variety of these technologies and their uses as well as the impact they are having on our society and the workplace. It is designed to employ information technologies as learning tools, which allow students to present new information in interesting ways. Students will gain confidence with information technology individually and collaboratively problem solve and conduct research to explore a variety of topics related to other curriculum areas and their own interests.

These goals for students are achieved through:

- providing opportunities for students to learn with and about a variety of technologies
 - the development of the skills needed to apply these technologies for different tasks in a variety of settings
- participation in activities that are meaningful, enjoyable and allow them to use their creativity

PRIMARY TWO (P2) REQUIREMENTS

The requirements for this level are as follows:

• Performance Assessment - Participation in discussions - Operation of computer system - Use and navigate software - Use software tools - Demonstrate software tools and features - Positive behaviour with technology - Use keyboarding techniques	70%
• Product Assessment - Portfolio containing computer generated documents designed for a variety of purposes and audiences	30%
• Written Assessment	N/A
Total	100%

MATERIALS OF INSTRUCTION (Adopted Text)

Milburn, MaryJo Fante. Basic Computer Skills. SRA, 2001

PHASE A OUTLINE

P1 Module Titles A - D	P2 Modules Titles A - D	P3 Modules Titles A - D
A. IT Components and Their Use 8 - computer components - computer operation - equipment care - keyboard and mouse techniques - software handling and care - software navigation - software operation - other technologies	A. IT Components and Their Use 8 - computer components - computer operation - equipment care - keyboard and mouse techniques - software handling and care - software navigation - software operation - other technologies	A. IT Components and Their Use 8 - computer components - operation and care - network use - special purpose keys - files - window/desktop - printing - software resources - Internet - other technologies
B. Computer Applications .. 20 - computer as a tool - simple word processing tools - simple graphics tools - new - edit - document management - computer applications for communicating - computer applications for original work	B. Computer Applications.. 20 - computer as a tool - document, creation & editing - document management - more word processing tools - more graphics tools - computer applications for communicating - computer applications for original work	B. Computer Applications ... 20 - computer as a tool - edit menu - file menu - document management word processing programs and features - simple formatting - using ready-made graphics - practising skills with graphics tools - computer applications for communicating - computer applications for original work

C. IT In Society and Workplace 6	C. IT In Society and Workplace 6	C. IT In Society and Workplace 6
- user etiquette	- user etiquette	- user etiquette
- sharing	- sharing	- sharing
- peer tutoring	- peer tutoring	- peer tutoring
- cooperation	- cooperation	- cooperation
- ethics	- ethics	- ethics
- positive behaviour	- positive behaviour	- positive behaviour
- consideration for others	- consideration for others	- consideration for others
- care and safety rules	- care and safety rules	- care and safety rules
school property	school property	school property
- personal use	- personal use	- personal use
- pleasure	- pleasure	- pleasure
- learning	- learning	- learning
- technology around us	- technology around us	- technology around us
- technology at work	- technology at work	- technology at work

Subtotal 34	Subtotal 34	Subtotal 34
Optional Weeks 4	Optional Weeks 4	Optional Weeks 4
Total Weeks 38	Total Weeks 38	Total Weeks 38

PRIMARY SCHOOL

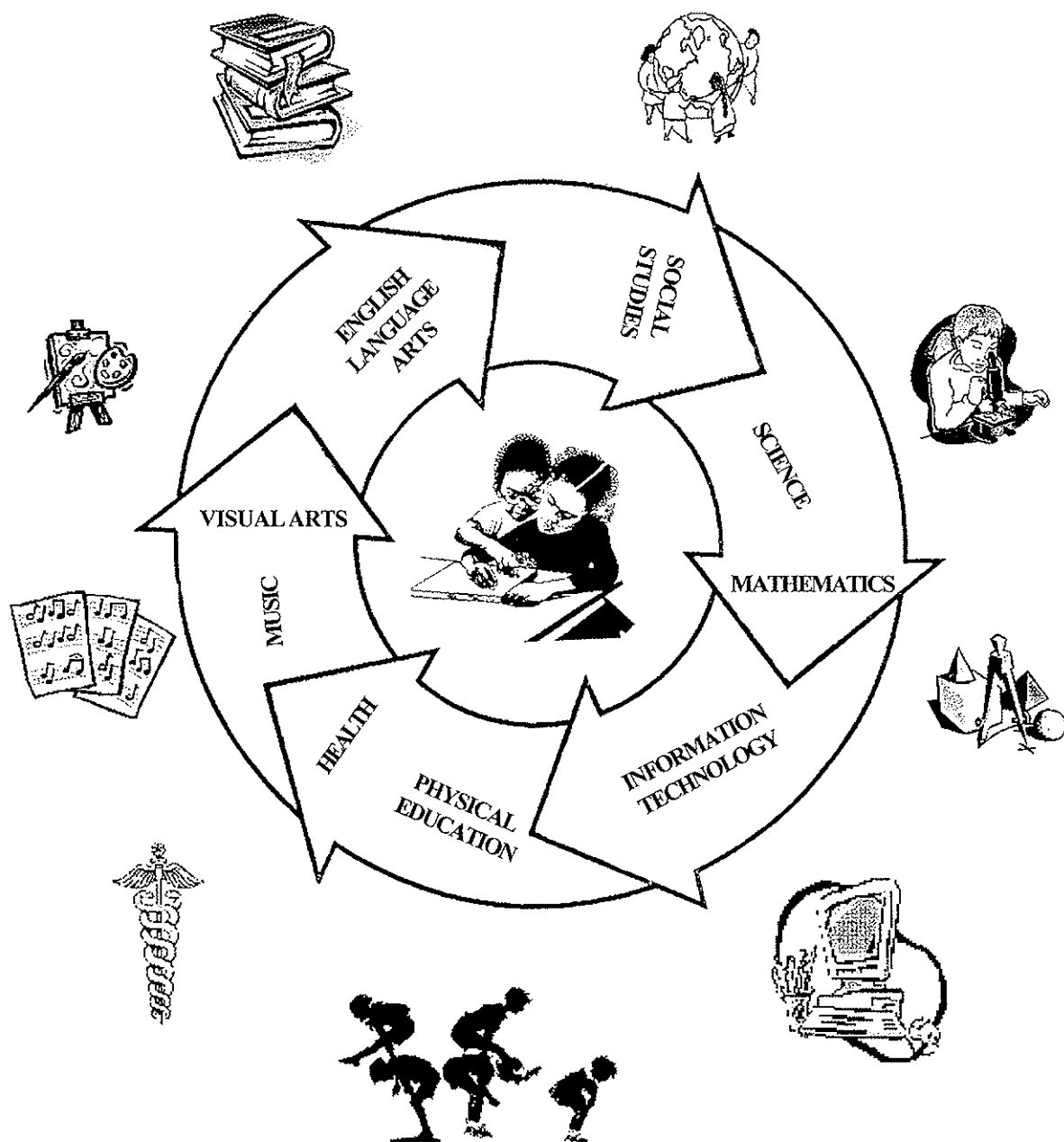
check one: P1 ☐ P2 ☒ P3 ☐ P4 ☐ P5 ☐ P6 ☐

Information Technology

GOALS			SUBGOALS	MODULE & CURRICULUM CORRELATION MATRIX		
1	Operation & Technology Concepts	1.1	Understand technology	x		x
		1.2	Use technology	x		x
2	Social & Ethical Issues Associated With Technology	2.1	Technology issues			
		2.2	Positive use and ethics			x
		2.3	Positive attitudes			x
3	Technology Productivity Tools	3.1	Enhance learning		x	
		3.2	Skills with tools		x	
		3.3	Manage & manipulate data		x	
4	Technology Communication Tools	4.1	Interaction with others		x	
		4.2	Communication of ideas		x	
		4.3	Tools & resources		x	
5	Technology Research Tools	5.1	Access data			
		5.2	Process data			
		5.3	Evaluate data & resources			
6	Technology For Problem Solving	6.1	Using resources			
		6.2	Apply solutions & strategies			
		6.3	Programming			
CONTENT STRUCTURE		IT Components And Their Use		x		
		Applications			x	
		Programming				
		IT in Society And The Workplace				x
			MODULES	A	B	C

MODULE KEY

- A - IT Components and Their Use
- B - Computer Applications
- C - IT in Society and the Workplace



Module A

INFORMATION TECHNOLOGY

Module Title: IT Components and Their Use

Sequence Reference: P2 IT-A

Time allotted: 8 weeks

PHASE A

PHASE B

PS

P1

P2

P3

P4

P5

P6



Subgoal Emphasis:

- 1.1 - 1.2 Operation and Technology Concepts

Content Focus:

- IT Components and Their Use

Curriculum Objectives:

At the end of this module, students will:

- identify the basic components of a computer system
- identify care of the basic components of a computer system
- demonstrate the correct use of the keyboard and mouse
- when assisted by the teacher, demonstrate the ability to start and shutdown a computer
- use log on name or number
- with assistance open and save files
- handle software appropriately
- use age-appropriate software
- navigate age appropriate software
- identify and successfully operate other technologies
- briefly describe the Internet using age-appropriate language

Content Detail:

- basic components: monitor, keyboard, CPU, mouse, printer, headphones, speakers, CD-ROM drive, microphone, etc.;
- computer care: classroom help protocol, avoid dust, dirt, food, drinks, careless movements, direct sunlight (disks), use clean hands; safe distance from monitor, mouse pad;
- mouse techniques: move, point, click, double click, drag;
- keyboard; numbers, letters, spacebar, return/enter;
- user protocol: log on. log off/ log in. log out; user name/number, start up, shut down;
- directory, save menu, save icon ; cursor, scroll bar, hourglass/busy,
- windows: resize, maximize, minimize;
- software care: careful handling of software diskettes, avoid magnetism, telephones; CD-ROM: inserting and removing a CD-ROM;
- types of software: interactive/talking books, educational software, writing software, colouring software, etc.;
- getting around the desktop: open file, file names,
- navigating software: icons: selection and de-selection/de-selection of icons, icon meanings; menu: menu choices, pull-down; "hotspots" on the screen, forward, back arrows; exit program, stop, quit; printing documents, print icon;
- VCR/ audio tape recorders, CD player, remote control, etc.

Recommended Instructional Strategies:

Students develop skills in this area through observation and practice. They should be encouraged to develop independence and confidence as technology users.

- Review the names of components. Include any additional components: headphones, etc. Ask students what they do with each component: hear sounds, see/create pictures or stories, etc., listen without disturbing anyone.
- Review rules and tell students about proper use: not sitting too close, avoid having earphones too loud, etc. Model the use of correct terminology. Demonstrate proper techniques when handling software.
- Demonstrate the correct procedure for turning the computer on and off and signing on and off. Allow students to practise when appropriate.
- Help students develop their keyboard and mouse techniques, including double clicking, by exploring software. Help them to recognize how they are using technology to accomplish tasks. Illustrate how technology is used by others in a variety of settings. (see **IT in Society and the Workplace**)
- When word processing, help them to space words, make capital letters and to press return/enter for a new line.
- Use opportunities to reinforce file management. Guide students in opening documents within an application. Identify the open document icon where available. Help students locate the save icon in a variety of applications/ activities.
- Demonstrate resizing windows.
- Illustrate how students' work is saved. Show the names of work that was done previously.
- Guide students in launching programs. Help students to successfully interact with software ensuring they understand the activity and objectives. Help students to understand the virtual worlds and characters found in some software. Highlight the ways that students can control events and interact within computer-generated environments. Where possible relate these activities to real-world student experiences.
- Help students to navigate software environments by demonstrating exiting the program, stop, quit, print icon, etc.

Recommended Formative Assessment Strategies:

Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding.

- Students can identify computer components with few or no cues and use the correct names when interacting with peers.
- Observe how well students obey rules and observe the proper care of equipment and software.
- Have students launch software using an icon on the desktop. Students should be able to confidently navigate age-appropriate software by using the mouse to point, click and drag and the keyboard to key letters and numbers. These skills should be evident across a variety of applications.
- Students should manage files by opening and saving them with little assistance.

Module Title: IT Components and Their Use

Sequence Reference: P2 IT-A

Summative Assessment:

Assessments given at the end of a module where the data is used to generate grades.

- **Performance:**
 - Students provide the name of the computer component upon request.
 - Gauge students' knowledge of operation of computer and navigation of software by having students log on to system and launch software independently. Observe the student's keyboard and mouse techniques as they navigate software making menu choices, identifying icons, creating (opening and saving files) and quit/exit.
 - Ask students to demonstrate their favourite software. Observe how well the students use mouse techniques.

Special Resources:

(materials, equipment & community involvement)

- Computer system
- MS Works
- Amazing Writing Machine
- Kid Pix Deluxe Studio
- Theme Weavers: Animals
- Theme Weavers: Nature
- Sammy's Science House
- Trudy's Time & Place
- Bailey's Book House
- teacher-made bingo cards, equipment labels
- paper, crayons, modelling clay, etc

References - Teacher:

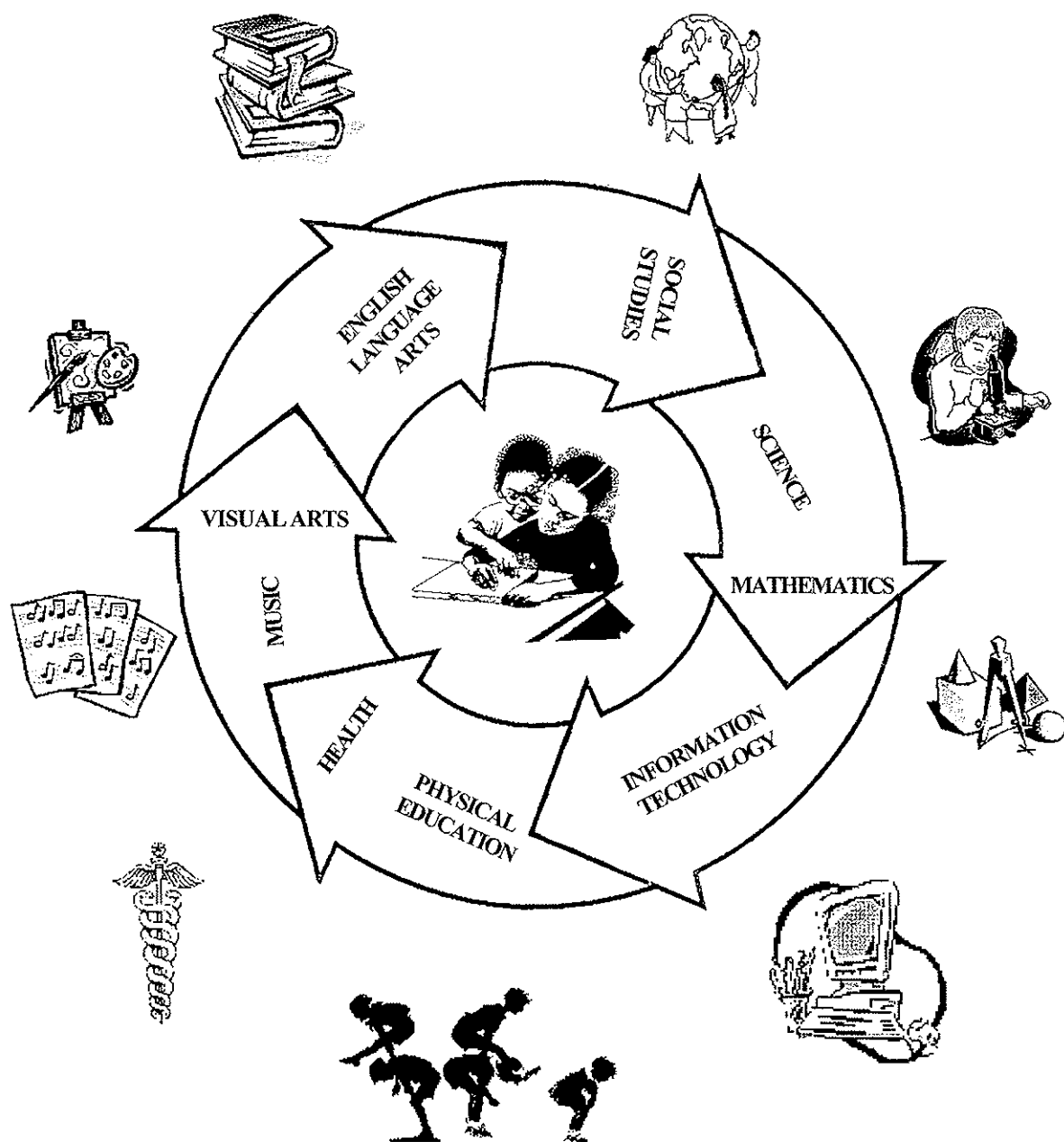
- Willis, Stephens & Matthew, Using Technology In The Classroom. Allyn & Bacon, 1996
- Shelly, Cashman, Counter, Teachers Discovering Computers: A Link to the Future. 1999
- Giesert & Futnell, Teachers, Computers & Curriculum: Using Computers in the Classroom. 1999

References - Student:

- Basic Computer Skills Level 1

Glossary:

- refer to text



Module B

INFORMATION TECHNOLOGY

Module Title: Computer Applications Time allotted: 20 weeks	Sequence Reference: P2 IT-B						
	PHASE A				PHASE B		
	PS	P1	P2	P3	P4	P5	P6
	☐	☐	☒	☐	☐	☐	☐
Subgoal Emphasis: 3.1 - 3.3 Technology Productivity Tools 4.1 - 4.3 Technology Communication Tools	Content Focus: Applications						
Curriculum Objectives:				Content Detail:			
At the end of this module, students will: - with the assistance of the teacher open, create, save, print and close computer generated documents - use age-appropriate applications to edit computer generated documents - use age-appropriate word processing programs under the guidance of the teacher - use colouring programs - with the assistance of the teacher explore simple painting and drawing tools - with the assistance of the teacher, use application tools to communicate with others				- the computer as a writing tool: word processor, - keyboard, mouse; - backspace: erase, delete characters; - the computer as a tool for pictures: graphics programs - graphics menu: lines, shapes, brush, paint bucket, patterns fill, etc.; colour selection; - the computer allows us to: create new documents, save documents; print documents; - file menu: open, new/create, save, print and close - editing: change work; completion of work already started; add text, change/ finish pictures - writing: words, sentences, stories, poems; - drawing; colouring; - communicating with peers, parents and others; - sharing information; - creation of original work for pleasure; - illustration of stories and ideas			

Module Title: Computer Applications	Sequence Reference: P2 IT-B
Recommended Instructional Strategies:	Recommended Formative Assessment Strategies:
• Demonstrate procedures for starting the programme from the desktop. Allow students to start the programme on their own by clicking on the icon • Demonstrate the procedure for opening a document as students work on templates or open previously saved work. Show students how to save and close their work. Reinforce how to print work, gradually allowing students to print, save and close independently • Help students develop the concept of the computer as a word processor by having them create increasingly more complex documents. Continuing with words, encourage students to develop longer documents by increasing the number of related sentences. Demonstrate the use of the spacebar. Have students erase errors by using the backspace key. • Demonstrate capital letters, punctuation as per the English language arts curriculum; • Introduce font by showing students the different designs in which the same letter can appear • To help students create documents to communicate ideas and express themselves, have students illustrate their stories, etc. • To help students get started, develop a template with a set illustration/ stamp for them to write about, progressing from one page to first books. • Students can create original work or retell stories. • Allow students to practice using the colour palette, paint a program • Reinforce individual paint/draw tools by demonstrating to small groups. Help students to develop their dexterity with drawing tools by allowing them to draw free form with; brush, pen, spray gun, etc. Progress to asking students to draw specific objects. Where possible ask students to demonstrate specific tools for you. Ask them to identify which tool would be best to a specific task. Review pictures with students and ask them to guess which tool was used for particular effects. Create a class gallery.	Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding. • Monitor students performances as they open, creates, save, etc. • Students should produce an increasing number of word-processed documents that demonstrate an increase in skills with tools: no extra spacing; capital letters; punctuation; etc. • Students should develop manual dexterity with mouse and paint/draw tools.

Module Title: Computer Applications

Sequence Reference: P2 IT-B

Summative Assessment:

Assessments given at the end of a module where the data is used to generate grades.

- **Performance Assessment**
 - Have individual students coach the teacher on what to do for the following procedures: open, create, save, etc.
- **Product Assessment**
 - Students portfolios should contain samples of the following:
 - colouring book illustrations, original artwork, illustrations of word processed documents – words, sentences, stories, etc. in support of a variety of curriculum areas for a variety of purposes

Special Resources:

(materials, equipment & community involvement)

- Computer system
- MS Works
- Kid Pix Deluxe
- Amazing Writing Machine

References - Teacher:

Teacher Resources

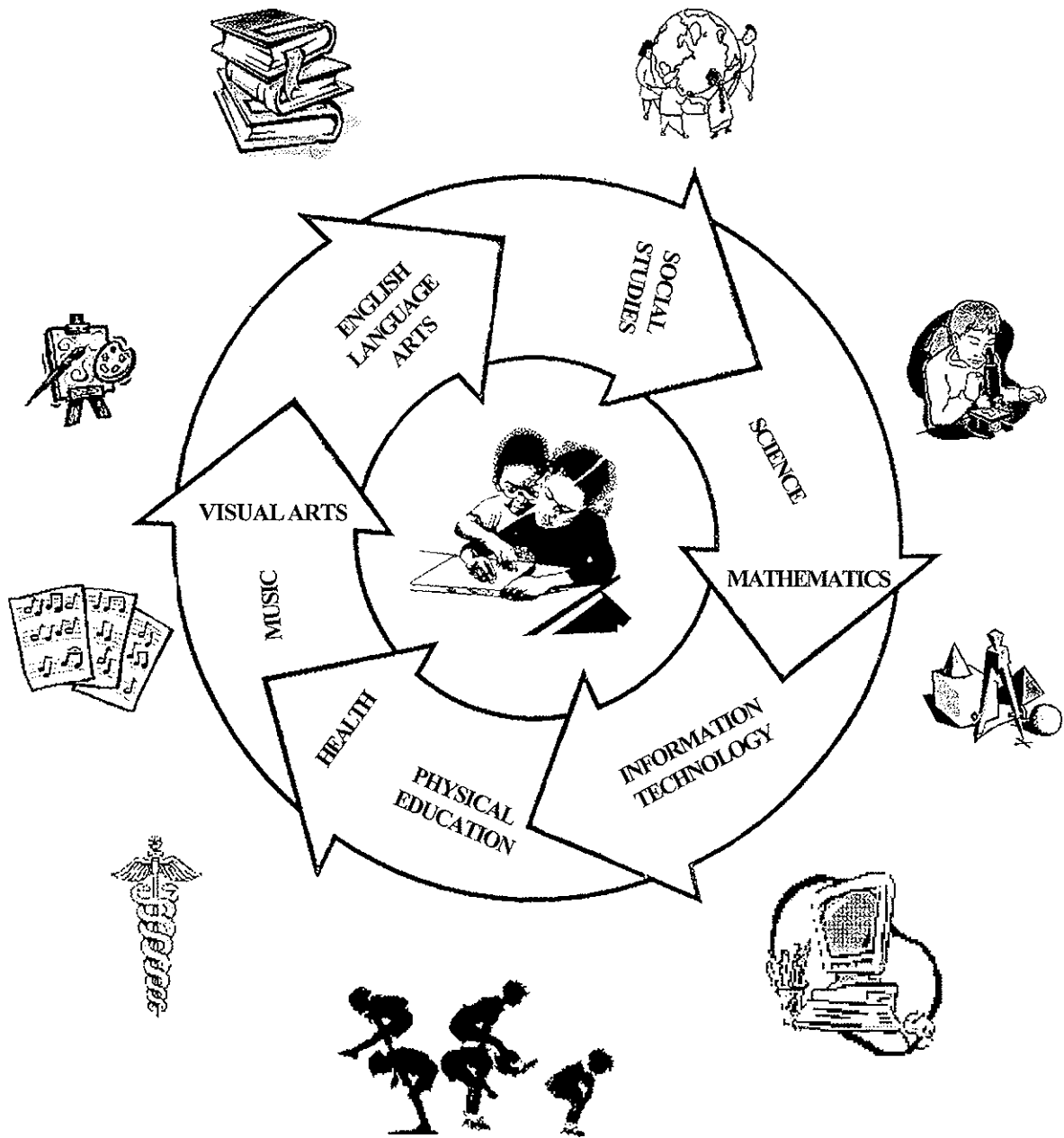
- Willis, Stephens & Matthew, Using Technology In The Classroom. Allyn & Bacon, 1996
- Shelly, Cashman, Counter, Teachers Discovering Computers: A Link to the Future. 1999
- Giesert & Futnell, Teachers, Computers & Curriculum: Using Computers in the Classroom. 1999

References - Student:

- Basic Computer Skills Level 1

Glossary:

- refer to text



Module C

COMPUTER SCIENCE

Module Title: IT in Society and Workplace

Sequence Reference: P2 IT-C

Time allotted: 6 weeks

PHASE A

PHASE B

PS

P1

P2

P3

P4

P5

P6

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Subgoal Emphasis:

- 1.1 - 1.2 Operation and Technology Concepts
- 2.2 - 2.3 Social and Ethical Issues Associated with Technology

Content Focus:

- IT in Society and Workplace

Curriculum Objectives:

At the end of this module, students will:

- work cooperatively with peers and others when using technology
- demonstrate positive and ethical social behaviour when using technology
- demonstrate a willingness to use technology
- use technology for creative expression
- observe care and safety rules when operating technology
- explain the importance of technology in their own lives
- in age-appropriate language, describe how they use technology
- use age-appropriate language to identify persons who use technology

Content Detail:

- sharing: peer to peer sharing, sharing with others, technology tutors, assisting others, task sharing, taking turns, time management
- noise management,
- respect; school rules, treatment of shared equipment;
- consideration for: settings, privacy of others, work of other students;
- software for: music, visual arts, creative writing
- observe school rules;
- care: avoid dust, dirt, food, drinks, magnetism, careless movements, direct sunlight (disks), use clean hands;
- operation at safe distance from monitor;
- personal experiences of students
- playing games, uses of technology with parents, learn new skills, drawing and painting, listen to stories, etc.
- other technologies: telephone, TV, stereo, video, cash register, microwave and other appliances, grocery scanners, digital camera, etc.

Module Title: IT in Society and Work Place	Sequence Reference: P2 IT-C
Recommended Instructional Strategies:	Recommended Formative Assessment Strategies:
• Lead students in a discussion of rules and behaviour around technology. Ask individual students to explain what they do to be careful and considerate when using technology at school or in the home. Reinforce positive behaviour and habits. • Allow students to take turns assisting with / caring for the computer: dusting the keyboard, wiping off the monitor, making sure the area is neat and tidy, etc. • Assign computer buddies for some activities. Monitor how each pair is getting along. Identify positive behaviour. Model appropriate behaviour explaining why you are doing things in a particular way. • Ask students to identify things they like to do for fun using a computer. Point out activities that they appear to enjoy in the classroom. Ask them about technology uses at home. • Arrange for students to pair up with technology mentors, perhaps older students. Have mentor students show how they do simple tasks on the computer e.g. a graphic with the younger student's name. • Allow students to select a computer-based activity of their own choice. Allow them to share their interests with other students and to print any documents they may produce. • Take pictures of other staff members using technology. Example: secretary, principal, other teachers. Discuss their activities. Explain that other people in the school use technology to do their jobs. • Help students to compile a list of other persons who use technology to do their jobs. Allow students to collect pictures of persons in these occupations and to draw one that they would like to know more about. • Use opportunities, during class visits, to highlight technology use. Invite speakers in to conduct a hands-on activity with the students. Example: students can speak about what they like, know and would like to and know about using video cameras while being filmed by a videographer.	Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding. • Observation of actions and interactions amongst students. • Observation of the participation of individual students during discussions • Observation of the participation of individual students in the care and maintenance of classroom technologies. • Recognition of persons carrying out activities involving technology.

Module Title: IT in Society and Work Place

Sequence Reference: P2 IT-C

Summative Assessment:

Assessments given at the end of a module where the data is used to generate grades.

- **Performance**
 - Students can describe occupations and activities where technology is used.
 - Students can describe ways in which they use technology for learning and fun.
 - Students should consistently demonstrate positive behaviour with peers and others when using technology
 - Students can be observed adhering to care and use rules.

Special Resources:

(materials, equipment & community involvement)

- computer system
- other technologies: see content detail
- drawing materials: paper, crayons, markers
- magazine clippings

References - Teacher:

Teacher Resources

- Willis, Stephens & Matthew, Using Technology In The Classroom. Allyn & Bacon, 1996
- Shelly, Cashman, Counter, Teachers Discovering Computers: A Link to the Future. 1999
- Giesert & Futnell, Teachers, Computers & Curriculum: Using Computers in the Classroom. 1999

References - Student:

- Basic Computer Skills Level 1

Glossary:

- refer to text

Information Technology - P3

Level Code: P3 IT



MINISTRY OF EDUCATION

Bermuda
2001

**PRIMARY SCHOOL
PHASE A OVERVIEW**

Subject Title: Information Technology

Subject Code: P3 IT

Time Allotted: 60 min/wk, (10 min. Keyboarding 50 min. IT)

RATIONALE

The purpose of this primary school Information Technology curriculum is to prepare students to live and learn in highly technological environments by exposing them to a variety of these technologies and their uses as well as the impact they are having on our society and the workplace. It is designed to employ information technologies as learning tools, which allow students to present new information in interesting ways. Students will gain confidence with information technology individually and collaboratively problem solve and conduct research to explore a variety of topics related to other curriculum areas and their own interests.

These goals for students are achieved through:

- providing opportunities for students to learn with and about a variety of technologies
- the development of the skills needed to apply these technologies for different tasks in a variety of settings
- participation in activities that are meaningful, enjoyable and allow them to use their creativity

PRIMARY THREE (P3) REQUIREMENTS

The requirements for this level are as follows:

• Performance Assessment - Participation in discussions - Operation of computer system - Select software - Demonstrate features and techniques - Demonstrate positive behaviour with technology - Use keyboarding techniques	70%
• Product Assessment - Portfolio containing computer generated documents designed for a variety of purposes and audiences	30%
• Written Assessment	N/A
Total	100%

MATERIALS OF INSTRUCTION (Adopted Text)

Milburn, MaryJo Fante. Basic Computer Skills. SRA, 2001

PHASE A OUTLINE

P1 Module Titles A - D	P2 Modules Titles A - D	P3 Modules Titles A - D
A. IT Components and Their Use 8 - computer components - computer operation - equipment care - keyboard and mouse techniques - software handling and care - software navigation - software operation - other technologies	A. IT Components and Their Use 8 - computer components - computer operation - equipment care - keyboard and mouse techniques - software handling and care - software navigation - software operation - other technologies	A. IT Components and Their Use 8 - computer components - operation and care - network use - special purpose keys - files - window/desktop - printing - software resources - Internet - other technologies
B. Computer Applications .. 20 - computer as a tool - simple word processing tools - simple graphics tools - new - edit - document management - computer applications for communicating - computer applications for original work	B. Computer Applications.. 20 - computer as a tool - document, creation & editing - document management - more word processing tools - more graphics tools - computer applications for communicating - computer applications for original work	B. Computer Applications ... 20 - computer as a tool - edit menu - file menu - document management word processing programs and features - simple formatting - using ready-made graphics - practising skills with graphics tools - computer applications for communicating - computer applications for original work

C. IT In Society and Workplace	6
- user etiquette	
- sharing	
- peer tutoring	
- cooperation	
- ethics	
- positive behaviour	
- consideration for others	
- care and safety rules	
school property	
- personal use	
- pleasure	
- learning	
- technology around us	
- technology at work	

C. IT In Society and Workplace	6
- user etiquette	
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school property	
- personal use	
- pleasure	
- learning	
- technology around us	
- technology at work	

Subtotal	34	Subtotal	34	Subtotal	34
Optional Weeks	<u>4</u>	Optional Weeks	<u>4</u>	Optional Weeks	<u>4</u>
Total Weeks	38	Total Weeks	38	Total Weeks	38

PRIMARY SCHOOL

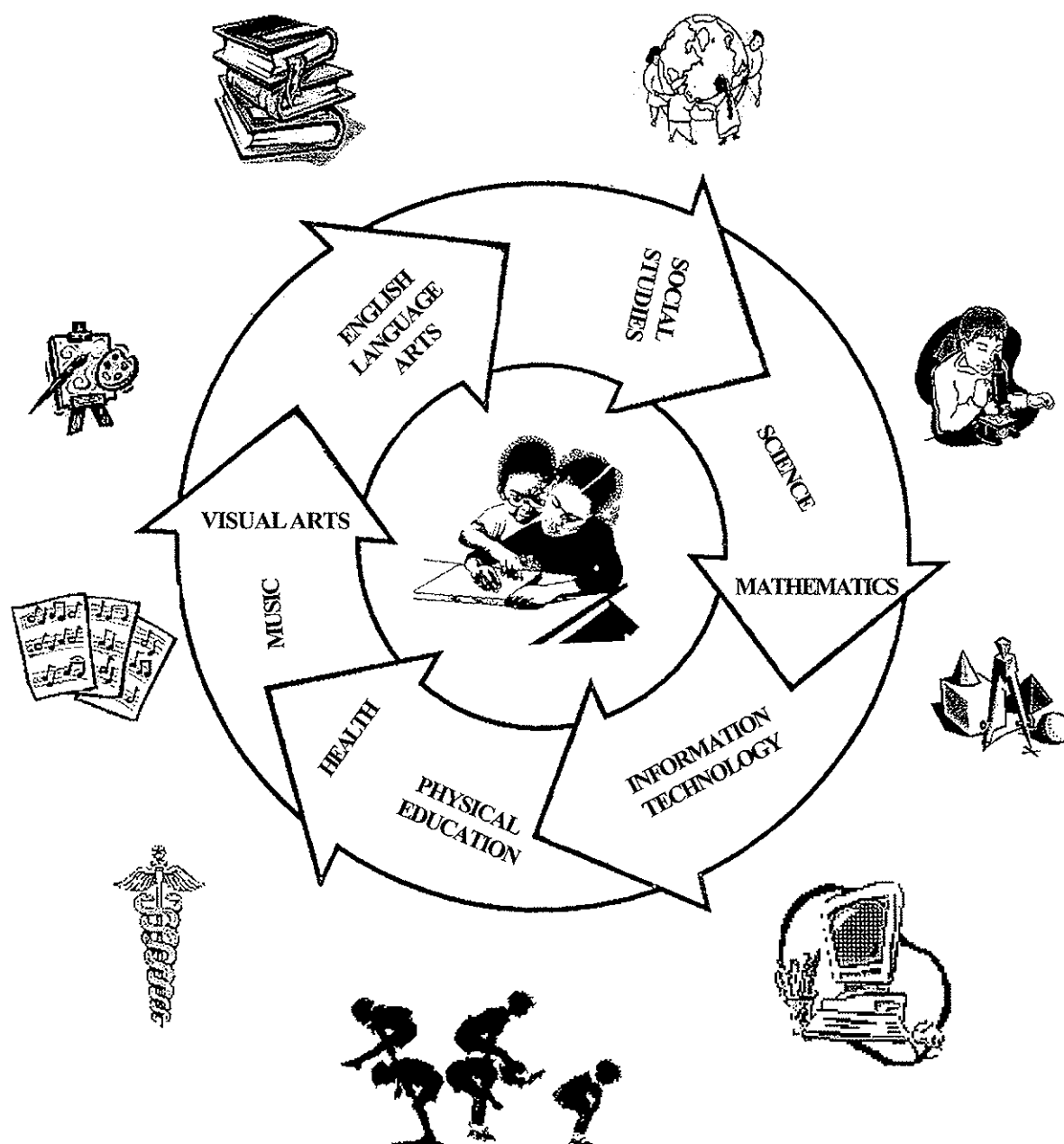
check one: P1 ☐ P2 ☐ P3 ☒ P4 ☐ P5 ☐ P6 ☐

Information Technology

GOALS			SUBGOALS	MODULE & CURRICULUM CORRELATION MATRIX		
1	Operation & Technology Concepts	1.1	Understand technology	x		x
		1.2	Use technology	x		x
2	Social & Ethical Issues Associated With Technology	2.1	Technology issues			
		2.2	Positive use and ethics			x
		2.3	Positive attitudes			x
3	Technology Productivity Tools	3.1	Enhance learning		x	
		3.2	Skills with tools		x	
		3.3	Manage & manipulate data			
4	Technology Communication Tools	4.1	Interaction with others			
		4.2	Communication of ideas		x	
		4.3	Tools & resources		x	
5	Technology Research Tools	5.1	Access data			
		5.2	Process data			
		5.3	Evaluate data & resources			
6	Technology For Problem Solving	6.1	Using resources			
		6.2	Apply solutions & strategies			
		6.3	Programming			
CONTENT STRUCTURE		IT Components And Their Use		x		
		Applications			x	
		Programming				
		IT in Society And The Workplace				x
			MODULES	A	B	C

MODULE KEY

- A - IT Components and Their Use
- B - Computer Applications
- C - IT in Society and the Workplace



Module A

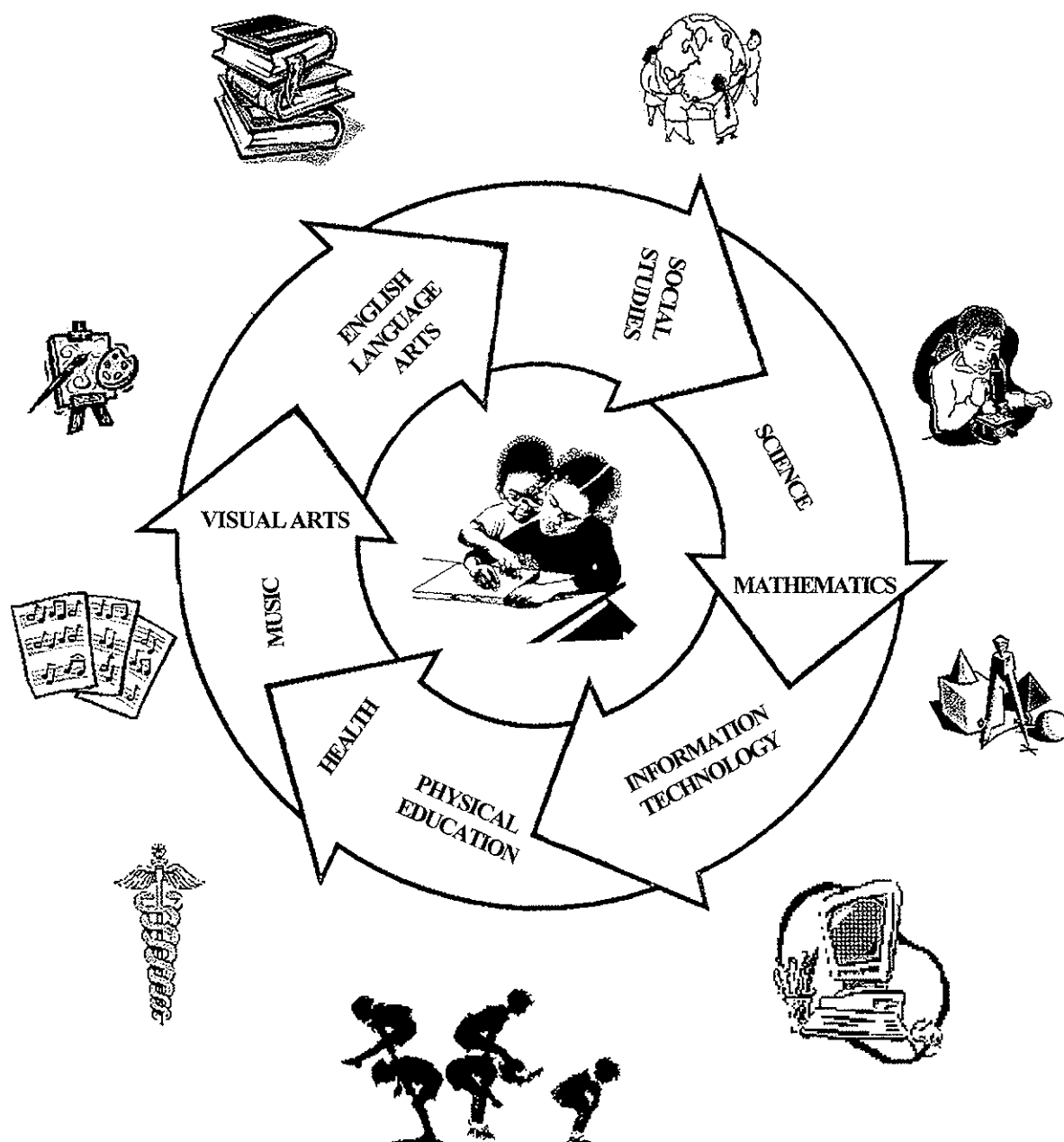
INFORMATION TECHNOLOGY

Module Title: IT Components And Their Use Time allotted: 8 weeks	Sequence Reference: P3 IT- A						
	PHASE A				PHASE B		
	PS	P1	P2	P3	P4	P5	P6
	☐	☐	☐	☒	☐	☐	☐
Subgoal Emphasis: 1.1 - 1.2 Operation and Technology Concepts				Content Focus: IT Components and Their Use			

Curriculum Objectives:	Content Detail:
At the end of this module, students will: - name and describe the basic components of a computer system - describe and apply the appropriate care of the basic components of a computer system - demonstrate the ability to start, restart and shutdown a computer - use log-on name or number - demonstrate the correct use of the keyboard and mouse - open and save files - handle software appropriately - use software and multimedia resources for specific purposes - with assistance, navigate age-appropriate software - operate other technologies - briefly describe the Internet using age-appropriate language	- hardware vs. software; - computer components: network; hard drive, floppy drive, file server, head phones etc.; - computer care: classroom help protocol, avoid dust, dirt, food, drinks, careless movements, direct sunlight (disks), use clean hands, safe distance from monitor, mouse pad; - mouse techniques: move, point, click, double click, drag; - keyboard: special keys: delete, tab, escape, backspace, enter; - user protocol: log on. log off/ log in. log out, user name/number; - start up, power up, boot; shut down; - getting around the desktop: open file, retrieve; directory, file names, save menu, save icon, save as; disk, CD-ROM, open folder - windows: resize, maximize, minimize - software care: careful handling of software diskettes copyright, licence, privacy, - CD-ROM: inserting and removing a CD-ROM; - software types: games, word processing, interactive/ talking books, educational software;, junior encyclopedias colour/paint/drawing ; - navigating software: icons: selection and de-selection of icons, icon meanings; menu: menu choices, pull-down; "hotspots" on the screen; select / deselect; cursor, scroll bar, hourglass/busy; next, back; forward, back arrows; I bar, pointer; hand insert objects; exit programme, stop, quit; printing documents; - Internet: links between remote computers; web site: source of information, fun and entertainment; - VCR/ audio tape recorders, CD player, remote control, etc.

Module Title: IT Components and Their Use	Sequence Reference: P3 IT-A
Recommended Instructional Strategies:	Recommended Formative Assessment Strategies:
Students develop skills in this area through observation and practice. They should be encouraged to develop independence and confidence as technology users. • Reinforce knowledge of computer components by having students independently name components and describe how they use them. • Help students to gain a broader understanding of computers and related technologies by highlighting their use in a variety of settings. (see also IT in Society and The Workplace) discuss how the students themselves use technology in similar or different ways. • Assign students to care for the computer station on a weekly basis. Allow them to assist other students with log on, log off, etc. Observe student carrying out duties. • Help students to use special keys where necessary according to software specifications. Incorporate these keyboarding techniques in English language arts activities by using templates. Example: Use the delete key to erase the word that does not belong (subject-verb agreement). Use the tab key to indent the first word in a paragraph. • Reinforce skills with software and file management as students work with applications and content-specific software. • Help students learn about saving files and storage devices. Show students the similarities between keeping work in real folders and folders on the desktop. Open a floppy disk and show students files and folders on the disk. Reinforce proper techniques when handling software. • Allow students to open their documents within an application. Help students locate their own work in directories. Demonstrate and have students use the pull down menus, to save and save as to their folders. Help students locate the save icon in a variety of applications/ activities where applicable. • Expose students to the concept of windows and demonstrate how windows can be re-sized. • • Introduce students to the Internet by using the KWL technique. Ask students if they have ever used the Internet: e-mail websites, etc. Allow students to observe a guided tour of a teacher selected web site that supports a topical subject.	Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding. • Have students describe basic components and their use upon request and observe participation in care of computer station. • Have students coach each other on start up and shut down procedures. • Observe individual student's participation in discussion ability to navigate software and interpret icons. • Ask students to research web site to locate specific information.

Module Title: IT Components and Their Use	Sequence Reference: P3 IT-A
Summative Assessment:	
Assessments given at the end of a module where the data is used to generate grades. • Performance - Students can provide the names of individual basic components with no prompting and give brief descriptions of use and operation - Students can perform or describe the procedure for starting up and shutting down computer - To gauge students' ability to operate a computer system and handle software, have students load and run a CD-ROM from a desktop icon. Have students describe and demonstrate activities in age-appropriate language. - To gauge students' knowledge of software, have them select correct software to paint or write, create, save and print the document.	
Special Resources: (materials, equipment & community involvement)	
• Internet access • Computer system • Assorted software: talking books, Golden Encyclopedia, Millie's Math House, Trudy's Time and Place, Bailey's Book House, Theme Weavers Animals and Theme Weavers Nature, Thinking Things, etc. • teacher made templates • Amazing Writing Machine	
References - Teacher:	References - Student:
• Willis, Stephens & Matthew, <u>Using Technology In The Classroom</u>. Allyn & Bacon, 1996 • Shelly, Cashman, Counter, <u>Teachers Discovering Computers: A Link to the Future</u>. 1999 • Giesert & Futnell, <u>Teachers, Computers & Curriculum: Using Computers in the Classroom</u>. 1999 • <u>Internet for Kids</u>. Teacher Created Materials. 1996	• <u>Basic Computer Skills</u> Level 2
Glossary:	
• refer to text	



Module B

INFORMATION TECHNOLOGY

Module Title: Computer Applications

Sequence Reference: P3 IT-B

Time allotted: 20 weeks

PHASE A

PHASE B

PS

P1

P2

P3

P4

P5

P6

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Subgoal Emphasis:

- 3.1 - 3.2 Technology Productivity Tools
- 4.2 - 4.3 Technology Communications Tools

Content Focus:

- Computer Applications

Curriculum Objectives:

At the end of this module, students will:

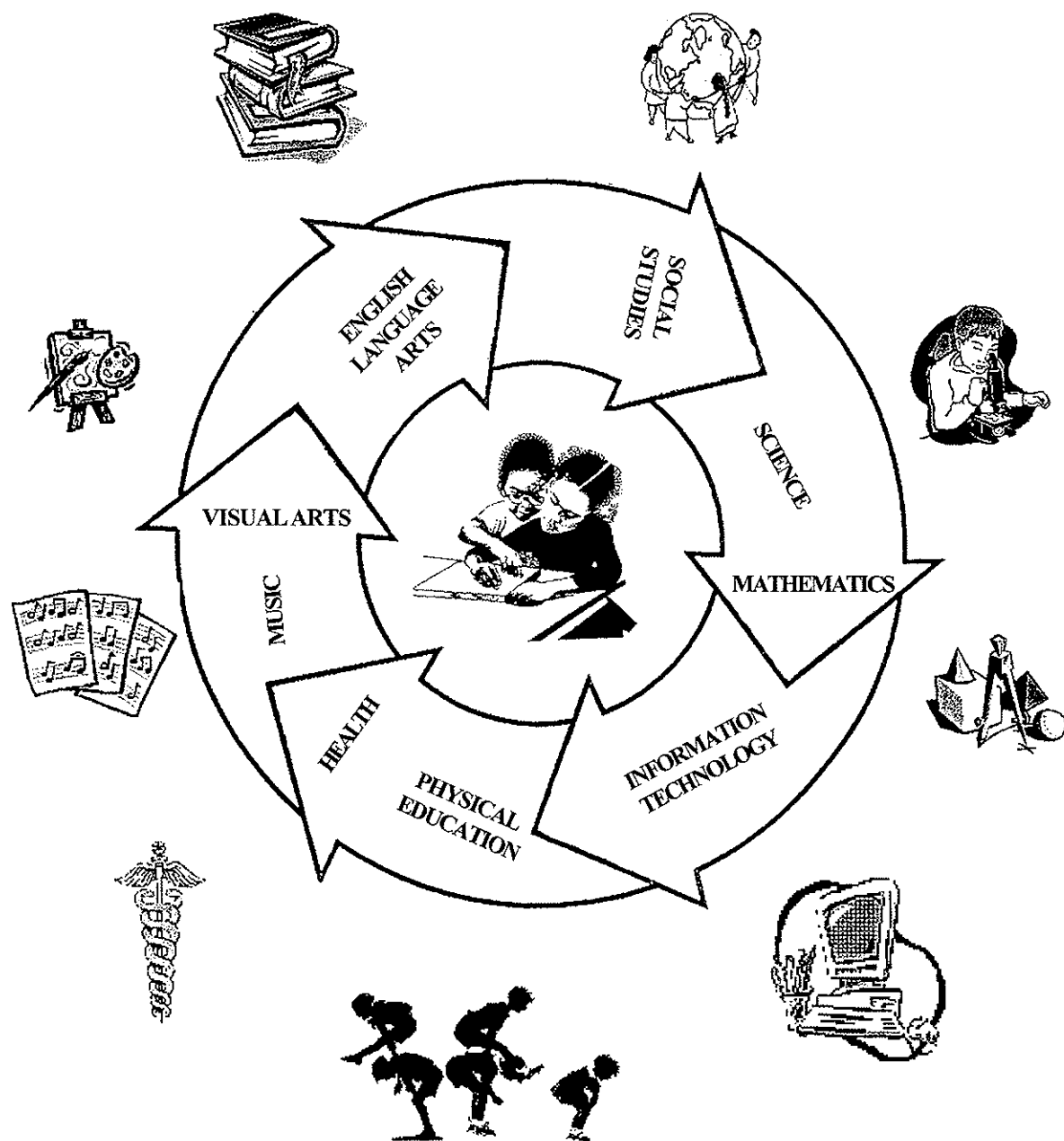
- open, create, save, print and close computer-generated documents
- use age-appropriate applications to edit computer generated documents
- use age-appropriate word processing programs to enter text
- use simple desktop publishing techniques
- use simple painting and drawing tools
- identify/select appropriate tool for task
- with the assistance of the teacher, use application tools to communicate with others

Content Detail:

- word processing programs: MS Works, Student Writing Center, Amazing Writing Machine; starting the program;
- graphics programs: KidWorks, Amazing Writing Machine
- file menu: documents: new, open, save, print, close;
- characters: letters, numbers, capital letters, period, comma, spacebar; delete characters, backspace;
- shift: question mark,
- font: select font, font size,
- alignment: centering titles,
- graphics tools: brush shape, spray gun, line tool, shapes, etc.; colour selection;
- graphics: clip art, insert graphics,
- editing: insert text, insert/change/finish pictures, resizing pictures/graphics: select, handles, hand/pointer
- writing: words, sentences, stories, poems;
- drawing; colouring;
- communicating with peers, parents and others;
- sharing information;
- creation of original work for pleasure;
- illustration of stories and ideas

Module Title: Computer Applications	Sequence Reference: P3 IT-B
Recommended Instructional Strategies:	Recommended Formative Assessment Strategies:
Computer applications provide the teacher with the opportunity to enrich the learning experience. Students must make connections with previously learned knowledge and increase their understanding of it in order to present new information for a variety of audiences. This requires the development of skills with technology applications, higher order thinking and problem solving. • Allow students to develop independent skills with starting the programs and creating new, naming, opening, closing, saving printing documents. • Have students develop their skills with the word processor by creating their first book. Create a template with a beginning middle and end (page 1, page 2, page 3). Include spaces for graphics on each page. Have students enlarge stamps for illustrations. More able students can draw their own graphics. Introduce the concept of editing each time students reopen a document to make changes. • Students can practise creating new documents by increasing the use of the word processor or draw/paint programs to support learning in other subject areas. These can be short projects where the emphasis is on supporting subjects currently being taught. • Increase the opportunity for students to develop their skills with the word processor by incorporating it into language arts activities: sentences, stories, poems, story starters, etc. • Introduce students to simple desktop publishing techniques: demonstrate how a graphic makes written words more interesting and gives the reader a better understanding. Use books from the classroom library to illustrate this idea. When assisting students with graphics into their documents, ask them where they think the graphic would look best. Ask them to explain their choice. • Help students to increase their skills with draw/paint tools by adding patterns and the spray gun to their tool selection. Point out patterns in their environment: paper towel patterns, textbook covers, and clothing; ask students to collect samples from magazine illustrations. Create a template with shapes; show students how to fill in the shapes with patterns. Demonstrate selection of different patterns. • Have students develop the tool use of paint/draw software by using them to create science illustrations, maps or to accompany math problems they create. • Allow students to use paint/draw tools for creative expression to illustrate original works.	Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding. • Gauge student expertise by asking questions such: How would I...; what would you do to ... as you move around the room monitoring students' work. Gradually increase the use of the application's features with each lesson. • Monitor students through writing process: prewriting, first draft, editing/revisions and publishing. • Observe their use of keyboard characters, file menu, editing strategies and paint/draw tools. • Students gradually develop an eye for balance and layout techniques

Module Title: Computer Applications	Sequence Reference: P3 IT-B
Summative Assessment:	
Assessments given at the end of a module where the data is used to generate grades. • Portfolio: - Pieces of work (text and graphics) displaying a range of abilities with tools used across an array of subject areas. These items should show the development of skills over time. - Students should be able to describe their progress during student –teacher conference. • Performance: - Students can demonstrate competency with application software tools as they create, save and print graphics and text documents.	
Special Resources: (materials, equipment & community involvement)	
• Computer system in classroom and lab • MS Works • Amazing Writing Machine • Kid Pix Deluxe	• CD-ROM dictionaries • other multimedia resources • Student Writing Machine • paper, crayons, markers, book covers, etc.
References - Teacher:	References - Student:
Teacher Resources • Willis, Stephens & Matthew, <u>Using Technology In The Classroom</u>. Allyn & Bacon, 1996 • Shelly, Cashman, Counter, <u>Teachers Discovering Computers: A Link to the Future</u>. 1999 • Giesert & Futnell, <u>Teachers, Computers & Curriculum: Using Computers in the Classroom</u>. 1999 • Sterling, Mary Ellen, <u>Write All About It</u>. Teacher Created Materials, 1993	• <u>Basic Computer Skills Level 2</u>
Glossary:	
• refer to text	



Module C

INFORMATION TECHNOLOGY

Module Title: IT in Society and Workplace Time allotted: 6 weeks	Sequence Reference: P3 IT-C						
	PHASE A				PHASE B		
	PS	P1	P2	P3	P4	P5	P6
	☐	☐	☐	☒	☐	☐	☐
Subgoal Emphasis: 1.1 - 1.2 Operation and Technology Concepts 2.2 - 2.3 Social and Ethical Issues Associated with Technology	Content Focus: IT In Society and the Workplace						
Curriculum Objectives:				Content Detail:			
At the end of this module, students will: - in age-appropriate language, briefly describe history of computers - work cooperatively with peers and others when using technology - demonstrate positive and ethical social behaviour when using technology - demonstrate a willingness to use technology - use technology for creative expression - observe care and safety rules when operating technology - in age-appropriate language, describe how they use technology - use age-appropriate language to identify persons who use technology				- today: small, many uses, found everywhere - sharing: peer to peer sharing, sharing with others, technology tutors, assisting others, task sharing, taking turns, time management - respect: privacy of others, work of other students; school rules, treatment of shared equipment, consideration for other workers - care and safe operation: avoid dust, dirt, food, magnetism, drinks, careless movements, direct sunlight (disks), use clean hands, operate at safe distance from monitor; - uses of technology: music, visual arts, creative writing, playing games, learn new skills, drawing & painting, listen to stories, work, etc. - other technologies: telephone, TV, stereo, video, cash register, microwave & other appliances, grocery scanners, digital camera, etc.			

Module Title: IT in Society and Work Place	Sequence Reference: P3 IT-C
Recommended Instructional Strategies:	Recommended Formative Assessment Strategies:
• Have students review rules and care of technology and let them construct posters to decorate the school and computer lab. • Discuss the advantages of working cooperatively. Encourage students to help each other with peer-to-peer coaching and as students develop skills ask them to volunteer as student tutors for the class. • Ensure that students are aware of the correct procedure for opening files and the importance of not tampering with the work of other students. Discuss the possible outcome of tampering: loss of work, unwanted changes, loss of privacy, etc. • Help students to recognize how pervasive technology and its use is in our society. Briefly describe how technology is used in occupations in Bermuda. To help them recognize technology users, have students collect pictures of people using a variety of technologies from magazines, etc. and create a montage. Ask students to describe what they see and to identify those activities they would like to know more about. • Highlight technology users during field trips and visits. Discuss if and how these uses were related to the site visit. • Develop a simple questionnaire and ask students to interview a relative or family friend about how they use technology for work. Collect and display all responses in a pictograph. Sort and have students discuss most common uses, technologies, etc. Help them to explore their conclusions about technology use.	Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding. • Monitor work on students' posters. • Observation of actions and interactions amongst students. • Observation of the participation of individual students during discussions • Observation of the participation of individual students in the care and maintenance of classroom technologies. • Monitor the completion of the questionnaires and surveys.

Module Title: IT in Society and Work Place

Sequence Reference: P3 IT-C

Summative Assessment:

Assessments given at the end of a module where the data is used to generate grades.

- **Performance**
 - Students should consistently demonstrate positive behaviour with peers and others when using technology
 - Students can be seen adhering to care and use rules consistently
 - Students should describe at least two occupations where people use technology
 - Students can discuss ways in which they use technology.
- **Product Assessment**
 - Student surveys and results

Special Resources:

(materials, equipment & community involvement)

- Computer system
- Field trips
- Magazines
- Word processor
- Draw/paint programme

References - Teacher:

- Willis, Stephens & Matthew, Using Technology In The Classroom. Allyn & Bacon, 1996
- Shelly, Cashman, Counter, Teachers Discovering Computers: A Link to the Future. 1999
- Giesert & Futnell, Teachers, Computers & Curriculum: Using Computers in the Classroom. 1999

References - Student:

- Basic Computer Skills Level 2

Glossary:

- refer to text

Information Technology - P4

Level Code: P4 IT



MINISTRY OF EDUCATION

Bermuda
2001

**PRIMARY SCHOOL
PHASE B OVERVIEW**

Subject Title: Information Technology

Subject Code: P4 IT

Time Allotted: 90 min/wk, (15 min Keyboarding, 70 min IT)

RATIONALE

The purpose of this primary school Information Technology curriculum is to prepare students to live and learn in highly technological environments by exposing them to a variety of these technologies and their uses as well as the impact they are having on our society and the workplace. It is designed to employ information technologies as learning tools, which allow students to present new information in interesting ways. Students will gain confidence with information technology individually and collaboratively problem solve and conduct research to explore a variety of topics related to other curriculum areas and their own interests.

These goals for students are achieved through:

- providing opportunities for students to learn with and about a variety of technologies
- the development of the skills needed to apply these technologies for different tasks in a variety of settings
- participation in activities that are meaningful, enjoyable and allow them to use their creativity

PRIMARY FOUR (P4) REQUIREMENTS

The requirements for this level are as follows:

• Performance Assessment - Participation in discussions - Operation of computer system - Demonstrate appropriate and ethical behaviour with technology - Operation of software tools and features - File management - Use keyboarding techniques - Use Internet resources - Operation of browser	60%
• Product Assessment - Portfolio containing computer generated documents designed for a variety of purposes and audiences - Help manual - Occupation list	40%
• Written Assessment	N/A
Total	100%

MATERIALS OF INSTRUCTION (Adopted Text)

Milburn, MaryJo Fante. Basic Computer Skills. SRA, 2001

PHASE B OUTLINE

P4 Module Titles A - D	P5 Modules Titles A - D	P6 Modules Titles A - D
A. IT Components and Their Use 6 - uses of computer components and peripherals - troubleshooting - storage devices - computer care and operation - network structure - special keys - user protocols - file management - menu types - intro to the Internet - sending e-mail - Web applications - other technologies	A. IT Components and Their Use 6 - computer components and peripherals - troubleshooting - computer care and operation - network components and structure - user protocols - file management - window/desktop - software selection and use - Web applications - E-mail etiquette - Internet navigation - other technologies	A. IT Components and Their Use 6 - computer components and peripherals - troubleshooting - hardware and software manuals - acceptable use policies - software licensing - software selection and use - Web applications - searching the Internet - research websites
B. Keyboarding 6 - keyboarding posture - fingers on keys - speed and accuracy - keyboarding habits	B. Keyboarding 6 - keyboarding posture - fingers on keys - speed and accuracy - keyboarding habits	B. Keyboarding 6 - keyboarding posture - fingers on keys - speed and accuracy - keyboarding habits
C. Computer Applications 17 - use of computer applications - special printing features - edit menu - formatting text - illustrating ideas with graphics tools - introduction to presentation software - presentation skills - format of communications - tool- task matching - search, organize information - multimedia resources - communication tools and strategies - collaboration and problem solving	C. Computer Applications 17 - use of computer applications - writing aids - document layout - creating presentations - introduction to databases - introduction to spreadsheets - search, organize information - multimedia resources - tool-task matching - search, manage and organize information - communication tools and strategies - collaboration and problem solving	C. Computer Applications 17 - use of computer applications - editing graphics - refining skills with presentations - enhancing presentations - refining skills with databases - refining skills with spreadsheets - personal uses for computer applications - multimedia resources - tool-task matching - search, manage and organize information - communication tools and strategies - collaboration and problem solving

D. IT In Society and Workplace	5
- early computers	
- computers then and now	
- user etiquette	
- sharing	
- peer tutoring	
- cooperation	
- rules	
- care	
- user ethics	
- uses of technology	
- working with technology	
- improper uses of technology	
- impact of technology on society	
- impact of technology on personal life	
- topical technology issues	

D. IT In Society and Workplace	5
- early counting tools	
- calculating machines	
- first modern computers	
- contemporary computers	
- sharing	
- peer tutoring	
- cooperation	
- rules	
- care	
- user ethics	
- privacy	
- copyright	
- flaming	
- hacking	
- software and technologies for the arts	
- personal IT use	
- working with technology	
- consequences of improper uses of technology	
- positive and negative impact of technology on society	
- impact of technology on personal life	
- topical technology issues	

D. IT In Society and Workplace	5
- uses of early counting machines	
- development of technology innovations	
- sharing	
- peer tutoring	
- cooperation	
- rules	
- care	
- user ethics	
- respect	
- viruses	
- privacy of personal information	
- personal IT use	
- working with technology	
- consequences of improper uses of technology	
- positive and negative impact of technology on society	
- impact of technology on personal life	
- topical technology issues	

Subtotal	34	Subtotal	34	Subtotal	34
Optional Weeks	<u>4</u>	Optional Weeks	<u>4</u>	Optional Weeks	<u>4</u>
Total Weeks	38	Total Weeks	38	Total Weeks	38

PRIMARY SCHOOL

check one: P1 ☐ P2 ☐ P3 ☐ P4 ☒ P5 ☐ P6 ☐

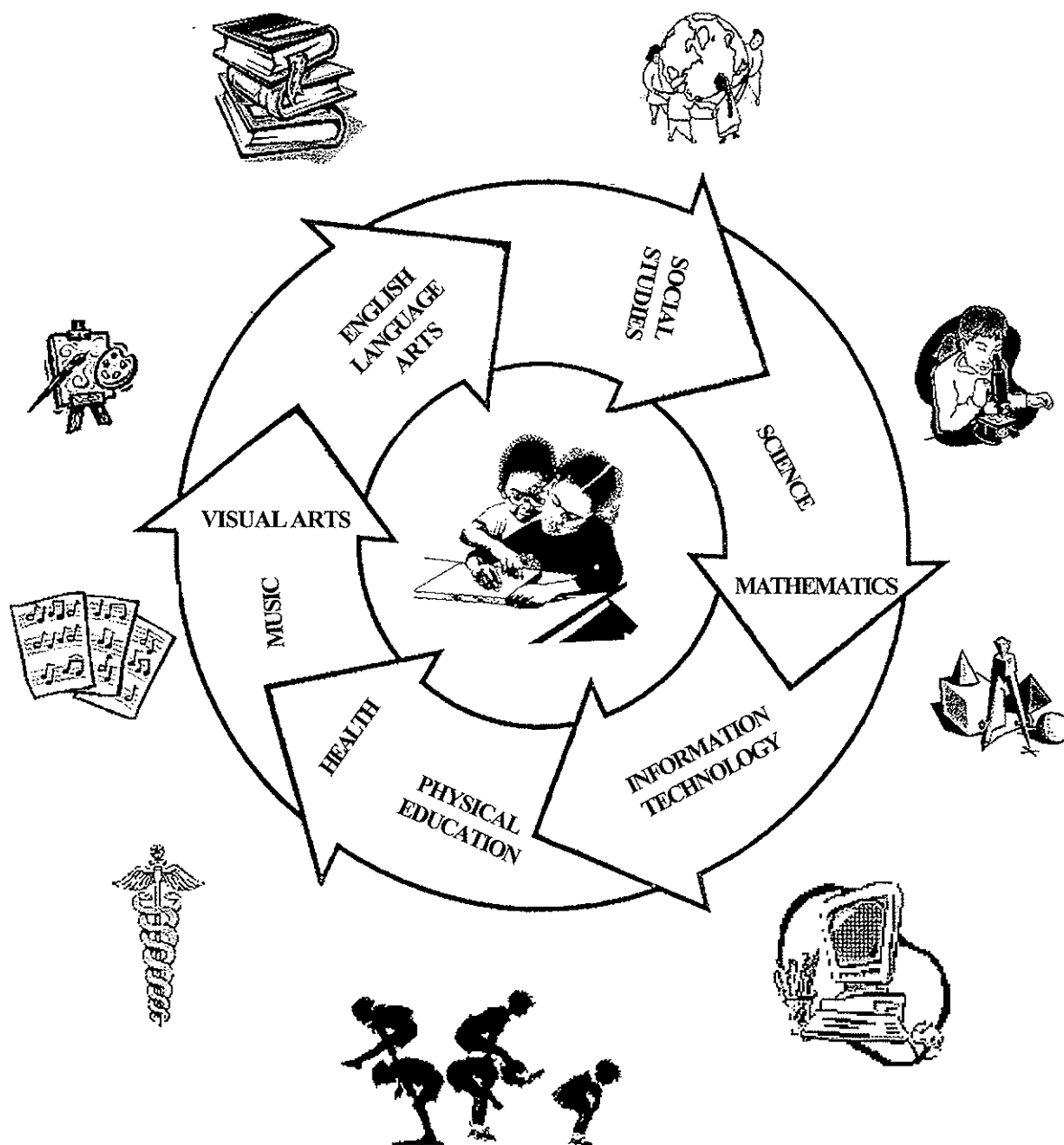
Information Technology

GOALS			SUBGOALS	MODULE & CURRICULUM CORRELATION MATRIX			
1	Operation & Technology Concepts	1.1	Understand technology	x	x		x
		1.2	Use technology	x	x		x
2	Social & Ethical Issues Associated With Technology	2.1	Technology issues				x
		2.2	Positive use and ethics				x
		2.3	Positive attitudes				x
3	Technology Productivity Tools	3.1	Enhance learning			x	
		3.2	Skills with tools			x	
		3.3	Manage & manipulate data			x	
4	Technology Communication Tools	4.1	Interaction with others	x		x	
		4.2	Communication of ideas	x		x	
		4.3	Tools & resources	x		x	
5	Technology Research Tools	5.1	Access data			x	
		5.2	Process data			x	
		5.3	Evaluate data & resources			x	
6	Technology For Problem Solving	6.1	Using resources			x	
		6.2	Apply solutions & strategies				
		6.3	Programing				
CONTENT STRUCTURE		IT Components And Their Use		x			x
		Applications		x			
		Programing					
		IT in Society And The Workplace					x
			MODULES	A	B	C	D

MODULE KEY

A - IT Components and Their Use
B - Keyboarding

C - Computer Applications
D - IT in Society and the Workplace



Module A

INFORMATION TECHNOLOGY

Module Title: IT Components and Their Use Time allotted: 6 weeks	Sequence Reference: P4 IT-A						
	PHASE A				PHASE B		
	PS	P1	P2	P3	P4	P5	P6
	☐	☐	☐	☐	☒	☐	☐
Subgoal Emphasis: 1.1 - 1.2 Operation and Technology Concepts 4.1 - 4.3 Technology Communication Tools				Content Focus: IT Components and Their Use			

Curriculum Objectives:	Content Detail:
At the end of this module, students will: - briefly describe the use of the basic components of a computer system - briefly describe the care of the basic components of a computer system - demonstrate the ability to start, restart and shutdown a computer - demonstrate the correct use of special keys of the keyboard - open and save files - handle and use software appropriately - discriminate between software tools and multimedia resources for specific purposes - navigate-age appropriate software - operate other technologies - communicate with others using e-mail - identify uses of the Internet using age-appropriate language - navigate a teacher-selected website	- hardware vs. software: peripherals, hardware manual, network; hard drive, floppy drive, file server, scanner, digital camera, etc., workstations - hardware care: classroom help protocol, avoid dust, dirt, food, drinks, careless movements, magnets, direct sunlight (disks), use clean hands, operate at safe distance from monitor, use mouse pad; troubleshooting strategies - keyboard techniques; special keys: - delete, tab, escape, backspace, enter - user protocol: log on, log off network, log in, log out network; start up, power up, boot; shut down; acceptable use policy - getting around the desktop: open file, open CD-ROM, open folder; retrieve; directory, file names, - save menu: save icon, save as; - windows: resize, maximize, minimize; active/ inactive - software types: games, productivity tools: word processing, draw/paint graphics, spreadsheets, databases, - reference: performing searches, key words, junior encyclopedias: multimedia; - navigating/using software: menu types, menu choices, scroll bar, arrows; exit, printing; tool bars, tools, key words, searches, help menu - other technologies: VCR/ audio tape recorders, CD, DVD players, remote control, calculators, etc. - Internet advantages: - access, communication of information, to others known and unknown, sharing of ideas, convenience of sources, access to information, etc.; - Web applications: business: - sales, product information & support, personalized services, etc.; entertainment, hobbies - e-mail: etiquette, send, reply, forward to, address, - internet navigation: forward and back buttons, open, home

Recommended Instructional Strategies:

Students develop skills and confidence with IT as they use technology in a variety of settings and for different uses. A deeper understanding of the operation and nature of technology should emerge as students become more fluent with technology-related terms and the ability to troubleshoot hardware and software problems.

- Extend students' knowledge of computer components by introducing scanner, digital camera, etc. Provide opportunities for students to use these peripherals to produce graphics. Example: import digital images for use in word-processed documents. Review care of components and use of other technologies.
- Highlight the basic structure of a network by identifying workstations, server, cabling, network printer, etc. Trace path/direction that data travels.
- Review classroom/lab help protocol. Review protocol for using networks including acceptable use guidelines set up by class, school, and system. Indicate help resources in manuals and on the desktop of most software. Have students create their own help manuals including: an annotated diagram of a computer system; operating instructions; software reviews; glossary of terms.
- Gradually introduce students to power keys through a variety of applications. Show them how these keys are often the same across applications.
- Encourage the proper handling of software by discussing usage guidelines included in software packages. Inform students of copyright, licence and privacy issues. Ask them what they know of these topics.
- Help students distinguish between the different types of software and what they are used for: application vs. content/skill based vs. resources. Ask them to identify software of each type. Have students match software selections to specific tasks/needs. Have them explain their choices. As they use applications, reinforce skills with file management. Have students compile this information as part of their software review.
- Establish e-pals for students. Have students write to each other to discuss issues of mutual interest or to work on a common project. Show students how to send e-mail and then allow them to practise in pairs. Help students to make comparisons between communities exchanging data and findings. Use the scanner and digital camera to send visual information and to introduce students to attachments.
- Allow students to explore a previewed web site preferably one, which supports a current topic. Have students practise their navigation skills as they explore the site to collect information. Have students discuss their findings. Compile a list of things they still want to know and demonstrate for the group how to find the answers.

Recommended Formative Assessment Strategies:

Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding.

- Observe students use of equipment and compliance with rules
- Monitor development of manual. Conference with individual students on their manual's contents.
- Check students as they send, forward and replying to e-mail
- As students explore web site, check monitors to see that they are following instructions

Module Title: IT Components and Their Use

Sequence Reference: P4 IT-A

Summative Assessment:

Assessments given at the end of a module where the data is used to generate grades.

- **Performance Assessment**
 - Observe independent competencies and appropriate behaviour with technology.
 - Students can open file, make changes, save file with a new name to own folder.
 - Students can correspond with e-pal telling him/her about a recently visited web site.
 - Students can navigate a teacher-selected webs site to locate answers to a prepared list of questions.
- **Product Assessment**
 - Conference with students to review the help manual.

Special Resources:

(materials, equipment & community involvement)

- Computer system (lab)
- Internet access
- reviewed web sites
- supplies, paper, markers, etc
- E-pals
- Student Writing Centre
- Internet browser with E- Mail

References - Teacher:

Teacher Resources

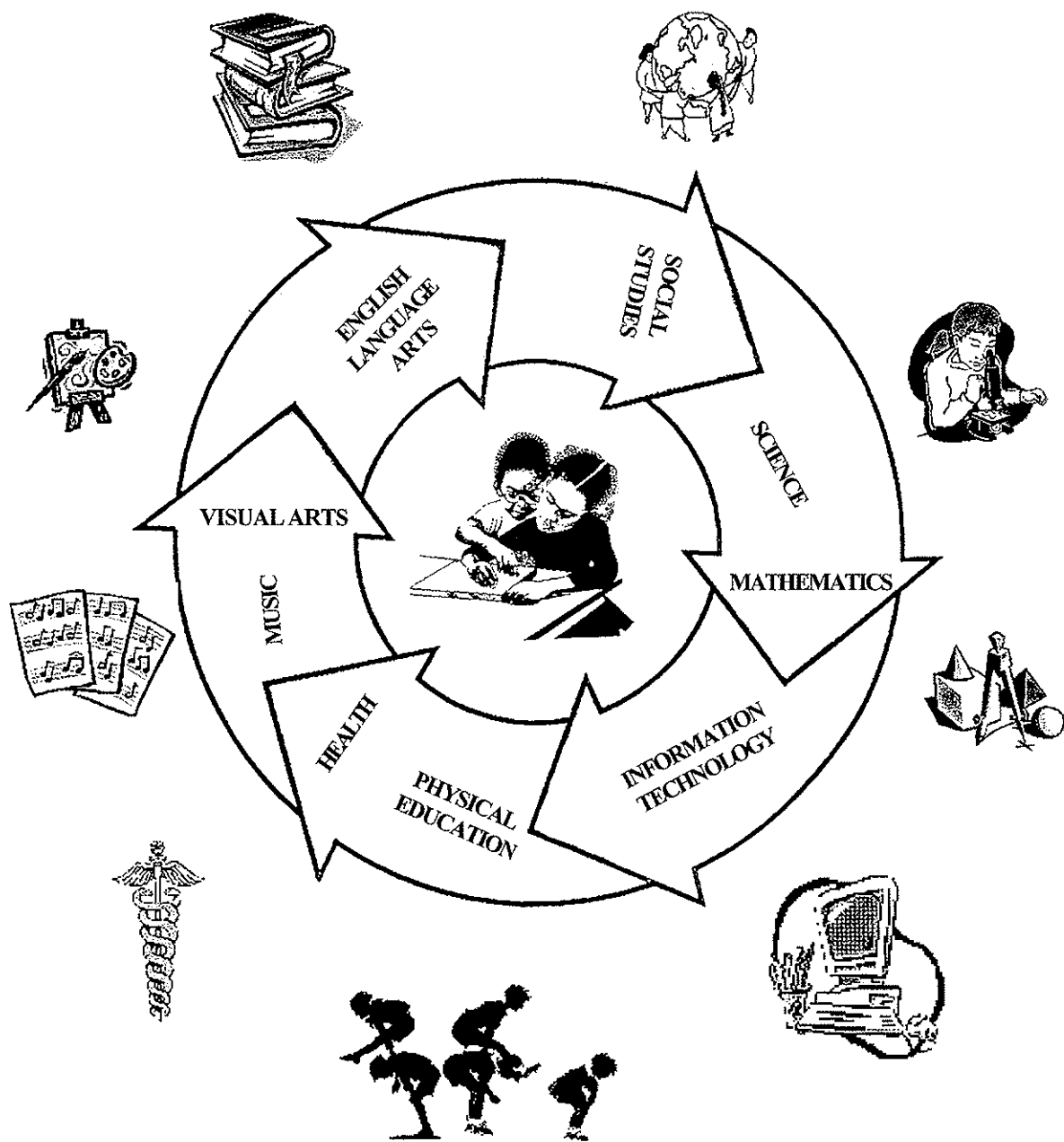
- Willis, Stephens & Matthew, Using Technology In The Classroom. Allyn & Bacon, 1996
- Shelly, Cashman, Counter, Teachers Discovering Computers: A Link to the Future. 1999
- Giesert & Futnell, Teachers, Computers & Curriculum: Using Computers in the Classroom. 1999
- Steoien, Senn & Sepien. The Internet & Problem-Based Learning. Zephyr Press, 2000

References - Student:

- Basic Computer Skills Level 3

Glossary:

- refer to text



Module B

INFORMATION TECHNOLOGY

Module Title: Keyboarding

Sequence Reference: P4 IT-B

Time allotted: 6 weeks

PHASE A

PHASE B

PS

P1

P2

P3

P4

P5

P6

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Subgoal Emphasis:

- 1.1 - 1.2 Operation and Technology Concepts

Content Focus:

- IT Components and Their Use

Curriculum Objectives:

At the end of this module, students will:

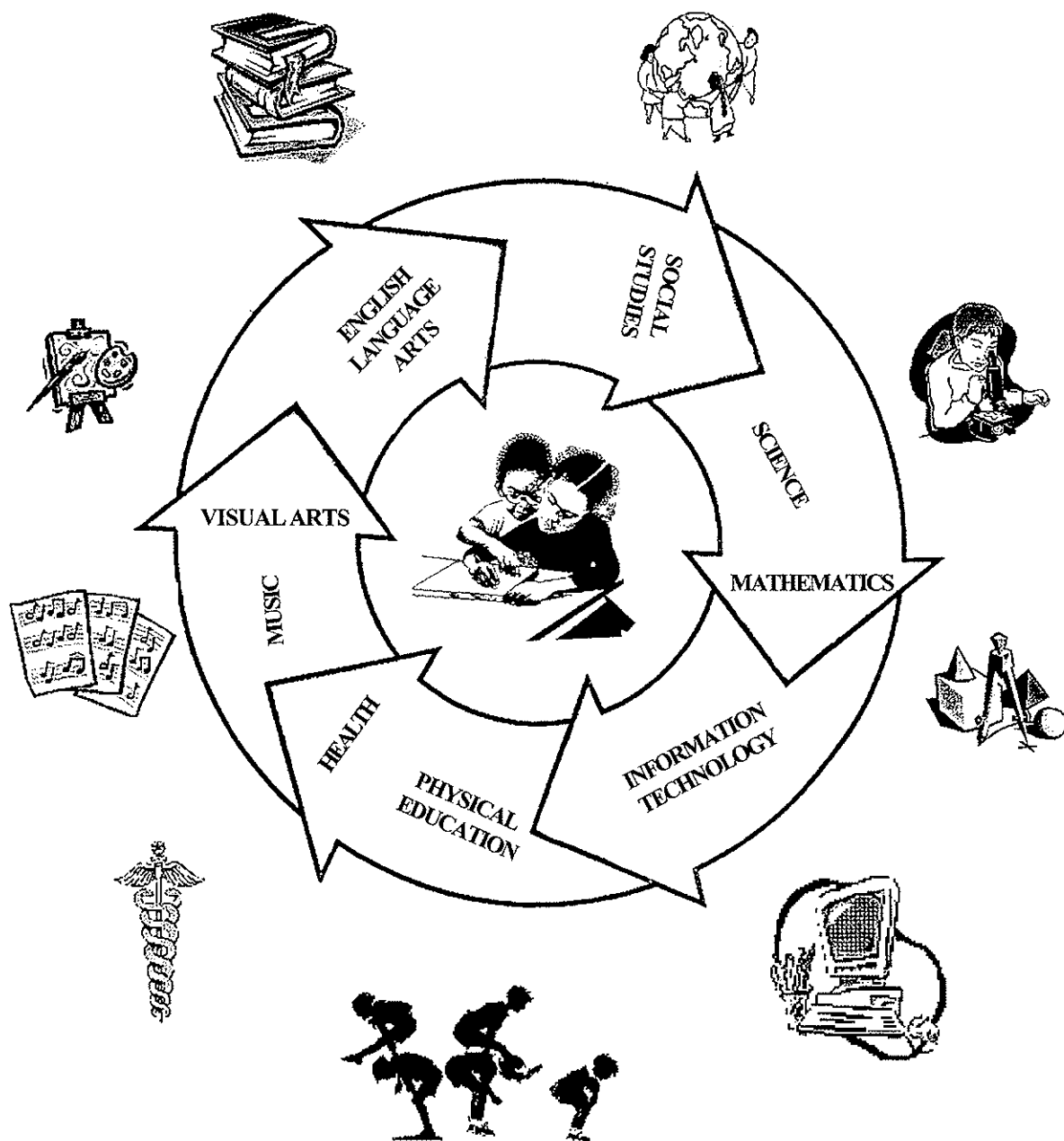
- key the entire keyboard by touch using correct fingering
- demonstrate the proper use of shift keys
- demonstrate the correct posture when keyboarding
- use keyboard skills in other curriculum areas
- keyboard by touch using correct fingering with 80% accuracy

Content Detail:

- home keys/home row;
- correct keys to fingers;
- eyes on copy or screen
- shift (pinky finger of each hand);
- fingers return to home keys
- as part of correct posture: straight spine; elbows close to sides; forearms parallel to floor, fingers curved, centre of body in front of keyboard;
- maintaining keyboarding posture and techniques in uses outside of keyboarding activities

Module Title: Keyboarding	Sequence Reference: P4 IT-B
Recommended Instructional Strategies:	Recommended Formative Assessment Strategies:
• as per software and text • keyboarding to be taught for 15 minutes during each of 34 lessons i.e. 15 of 90 minutes	Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding. • as per practice and speed tests in software

Module Title: Keyboarding	Sequence Reference: P4 IT-B
Summative Assessment:	
Assessments given at the end of a module where the data is used to generate grades. Students maintain proper posture and fingering when completing assessment contained in software.	
Special Resources: (materials, equipment & community involvement)	
- Computer system - Microsoft Works - Paws In Typing Town	
References - Teacher:	References - Student:
Teacher Resources - Willis, Stephens & Matthew, <u>Using Technology In The Classroom</u>. Allyn & Bacon, 1996 - Giesert & Futnell, <u>Teachers, Computers & Curriculum: Using Computers in the Classroom</u>. 1999	<u>Basic Computer Skills Level 3</u>
Glossary:	
refer to text	



Module C

INFORMATION TECHNOLOGY

Module Title: Computer Applications

Sequence Reference: P4 IT-C

Time allotted: 17 weeks

PHASE A

PHASE B

PS

P1

P2

P3

P4

P5

P6

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Subgoal Emphasis:

- 3.1 - 3.3 Technology Productivity Tools
- 4.1 - 4.3 Technology Communication Tools
- 5.1 - 5.3 Technology Research Tools
- 6.1 Technology for Problem Solving

Content Focus:

- Applications

Curriculum Objectives:

At the end of this module, students will:

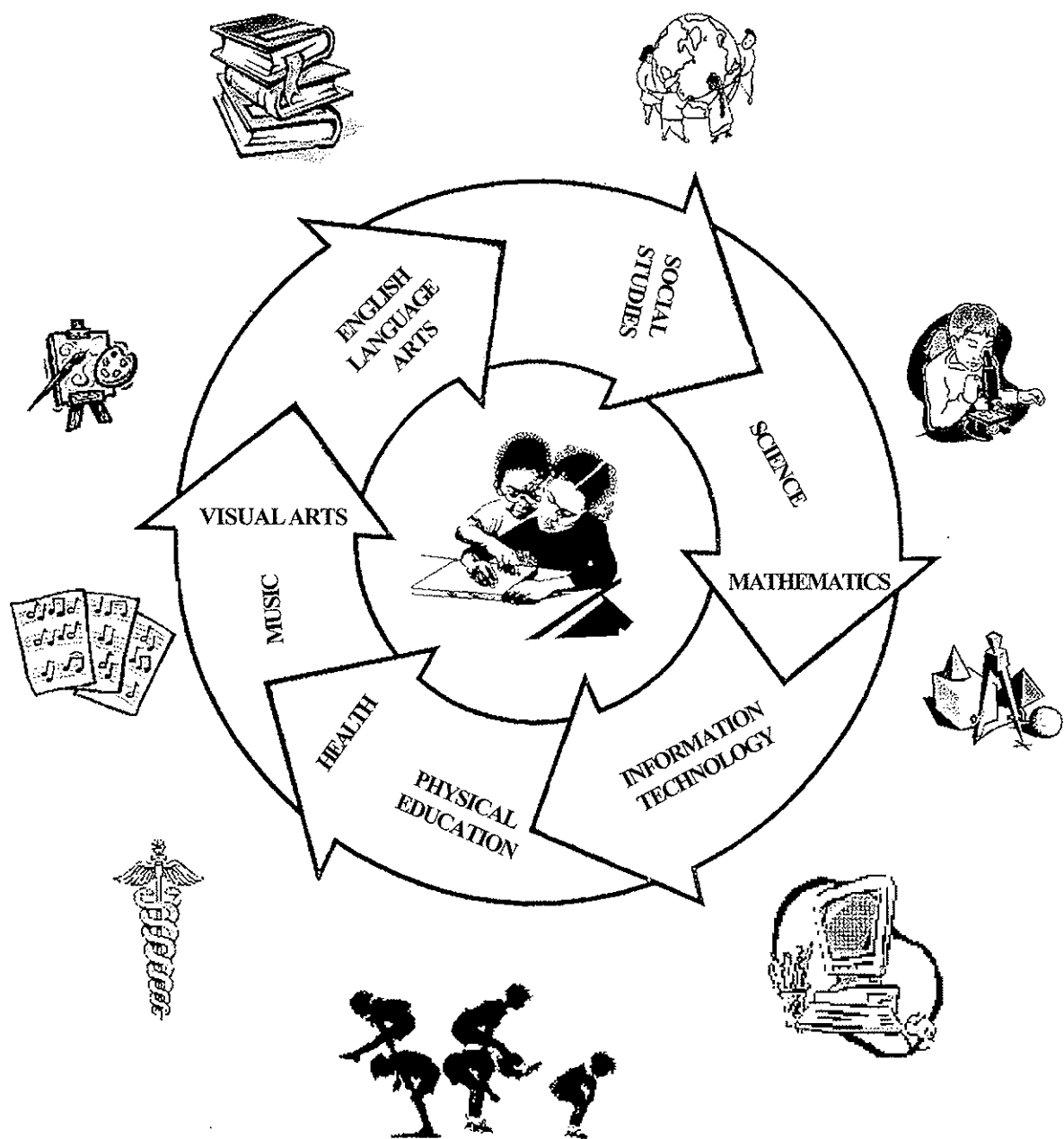
- manage computer generated documents
- use age appropriate applications to edit computer generated documents
- format text using a word processor
- use basic desktop publishing techniques
- use graphics software tools
- uses basic presentation software tools
- identify/ select appropriate tool for task
- use application tools to communicate with others
- use technology tools to collaborate with others to solve problems or present ideas

Content Detail:

- use of computer applications for communication and problem-solving: word processing program for writing; graphics programs for pictures; presentation tools: for groups, projects; data bases and spreadsheets to manage information and explore solutions to problems
- file menu: save as, printing parts of a document
- find,
- spell check
- font: font size, style, colour
- tab: indent,
- alignment: justification, centering titles,
- edit: cut, paste, insert text, insert/change/ finish pictures; resizing pictures/graphics: select, handles, hand/pointer,
- document layout: headlines, borders, balance, purpose, design;
- graphics tools: brush shape, spray gun size, line tool width, shapes, etc.; colour palette;
- presentation software: PowerPoint, ClarisWorks; deliver information to individuals or larger groups, projects;
- presentation: create slides, slide layout text box; background;
- presentation: slide view, forward/next, back/previous
- communication: purpose, target group, medium
- presentations to a group: audience, posture, delivery skills, voice projection, eye contact
- graphical, textual, multimedia communications
- sharing information,
- using multimedia resources, Internet;
- creation of original stories and ideas;

Module Title: Computer Applications	Sequence Reference: P4 IT-C
Recommended Instructional Strategies:	Recommended Formative Assessment Strategies:
Computer applications provide the teacher with the opportunity to enrich the learning experience. Students must make connections with previously learned knowledge and increase their understanding of it in order to present new information for a variety of audiences. This requires the development of skills with technology applications, higher order thinking and problem solving. • Monitor students' ability to manage files as they complete assignments. Assist them with researching multimedia and Internet resources. • Have students practise skills with formatting text by creating their own books, reports and letters. Whenever possible, encourage the use of the word processor as a productivity tool for a variety of writing assignments. • Demonstrate the use of the word processor's functions, special keys. Include opportunities in writing activities for students to practice them. Example: Demonstrate the spell check function: show how to select this function from the pull down menu; explain the features of the spell check window; highlight the way the spell check handles proper nouns and suggests alternatives; point out how spell check does not handle the use of wrong words. Allow students to practise using a template that you have created. Emphasize the need for proof-reading by including samples of correct spellings in the wrong places. • Introduce students to presentation software by showing them a sample document. Show them how to navigate through the presentation. Demonstrate how similar the presentation software is to other applications that they are familiar with. Show them that the presentation is made of a number of slides with the outline view. Create a template with a title page and 2 to 3 additional bulleted slides. Have students edit a template adding text and graphics in support of a common theme or topic of interest. Coach students on giving oral presentations. • To develop student's understanding of design techniques have students create an advertisement or poster of a school event. Allow students to review ads in a magazine or newspaper. Ask students to identify the characteristics that make an attractive, eye-catching ad. Have students try to incorporate some of these ideas, including clip art, original artwork, in their own work. • Students can practise their skills with draw/ paint tools by creating map describing how to get from point A to B and so on. Encourage students to use patterns and to create a key for their maps.	Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding. • Gauge students expertise by asking questions and observing as they complete assignments. • Gradually increase the use of the application's features with each lesson or assignment. Students should develop a natural feel for software tools and features. Monitor students through writing process: prewriting, first draft, editing/revisions and publishing. • Students develop the ability to recognize suitable sources of information and the ability to incorporate this information into documents. • Observe their use of keyboard characters, file menu, editing strategies and paint/draw tools. • Students gradually develop an eye for designing layouts. • Students can navigate through the presentation and its various views.

Module Title: Computer Applications	Sequence Reference: P4 IT-C
Summative Assessment:	
Assessments given at the end of a module where the data is used to generate grades. • Portfolio Assessment: - Pieces of work (various documents, presentations, e-mail communications) displaying a range of abilities with tools used across an array of subject areas. These items should show the development of skills over time. - Students should be able to describe their progress during student –teacher conference. • Performance Assessment: - Students demonstrate competency with application tools, multimedia and Internet resources. - Participation in discussions and group work.	
Special Resources: (materials, equipment & community involvement)	
• Computer system in classroom and lab • MS Works, MS Office • Multimedia resources • Kid Pix Deluxe	• CD-ROM dictionaries • other multimedia resources • Student Writing Centre • paper, crayons, markers, book covers, etc.
References - Teacher:	References - Student:
• Willis, Stephens & Matthew, <u>Using Technology In The Classroom</u>. Allyn & Bacon, 1996 • Shelly, Cashman, Counter, <u>Teachers Discovering Computers: A Link to the Future</u>. 1999 • Giesert & Futnell, <u>Teachers, Computers & Curriculum: Using Computers in the Classroom</u>. 1999 • Sterling, Mary Ellen, <u>Write All About It</u>. Teacher Created Materials, 1993	• <u>Basic Computer Skills Level 3</u>
Glossary:	
• refer to text	



Module D

INFORMATION TECHNOLOGY

Module Title: IT in Society and Workplace Time allotted: 5 weeks	Sequence Reference: P4 IT-D						
	PHASE A				PHASE B		
	PS	P1	P2	P3	P4	P5	P6
	☐	☐	☐	☐	☒	☐	☐
Subgoal Emphasis: 1.1 - 1.2 Operation and Technology Concepts 2.1 - 2.3 Social and Ethical Issues Associated with Technology	Content Focus: - IT Components and Their Use - IT in Society and the Workplace						
Curriculum Objectives:				Content Detail:			
At the end of this module, students will: - briefly describe history of computers - work cooperatively with peers and others when using technology - discuss and demonstrate positive and ethical social behaviour when using technology - use technology for creative expression - observe care and safety rules when operating technology - explain the importance of technology to their own lives - identify persons who require technology for their jobs - discuss current technology issues				- history: early counting tools, abacus, first computers used mostly for math – multiplication and division, - characteristics of first computers: did not always use electricity, were very large, used cards instead of diskettes, very few, slow - characteristics of today's computers: electrical machines, small, use digital information, are everywhere, used for many things, very fast - sharing: peer to peer sharing, sharing with others, technology tutors, assisting others, task sharing, taking turns, time management - school rules: appropriate treatment of school equipment, - respect: privacy of work of others; - ethics: with shared files and resources; privacy of personal information, copyright, licensing, piracy, hacking, flaming, viruses, - care: avoid dust, dirt, food, drinks, careless movements, direct sunlight (disks), use clean hands; safe distance from monitor; See IT Components and Their Use - uses of technology: music, visual arts, creative writing, playing games, learn new skills, drawing and painting, listen to stories, work, with parents, others, in industry, business, education, home; - issues for discussion: hacking, sabotage; software piracy; lack of privacy, time spent with technology vs. time spent with family, with nature, advances in science, etc.			

Module Title: IT in Society and Work Place	Sequence Reference: P4 IT-D
Recommended Instructional Strategies:	Recommended Formative Assessment Strategies:
• Discuss the development of computer technology with students. Use a chart to help students to contrast the early machines with modern ones. Have students use drawing tools to produce a poster on technology yesterday, today and tomorrow. Let students write a description of what their new computer of tomorrow will be able to do. • Review rules for responsible technology use. Have students identify why these rules are needed: for safety, for proper use, for respect for others. Have students discuss consequences for breaking rules. • Ask students to survey parents and relatives about the acceptable use policies in their workplaces. What are some of the rules? Why are these rules in place? What are some of the consequences? • Ask students to keep a diary of how they use/ or are affected by technology in a 24 hour period. Record these examples and ask students to think about how different their day would have been without these technologies. Have students write a short story about the day in the life of a fictional character who woke to discover that all of the modern technologies had disappeared. • Have students work in groups to identify employment opportunities involving technology skills in the help wanted advertisements. Help students to identify the different applications of technology to tasks and the quantity and type of job requests. Tie in aspects of Bermuda's economy where possible. Chart the results. Discuss the results with students. Ask them to draw conclusions on their findings. • Have students explore web sites designed for younger audiences. Ask students to review the site based on criteria established by the group. Students can collect these reviews and present/publish them in an annotated list.	Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding. • Participation in discussion • Compliance with school rules • Student-student-teacher interaction • Question students on history details • Production of poster • Collect survey results on policies and give examples of comments • Diary entries • Check development of a story and review list • Observe student's ability to navigate web sites

Module Title: IT in Society and Work Place	Sequence Reference: P4 IT-D
Summative Assessment:	
Assessments given at the end of a module where the data is used to generate grades. • Performance Assessment: - Students can provide a brief oral description of the history of the computer using his/her poster as an aid. - Students can be seen to behave in a positive and ethical manner with peers and others. - Students describe occupations involving technology and type of business that might employ them. • Product Assessment: - Students participates in research and contributes to group's list of occupations.	
Special Resources: (materials, equipment & community involvement)	
• Newspapers • Computer system	• Web sites for kids • samples of acceptable use policies
References - Teacher:	References - Student:
Teacher Resources • Willis, Stephens & Matthew, <u>Using Technology In The Classroom</u>. Allyn & Bacon, 1996 • Shelly, Cashman, Counter, <u>Teachers Discovering Computers: A Link to the Future</u>. 1999 • Giesert & Futnell, <u>Teachers, Computers & Curriculum: Using Computers in the Classroom</u>. 1999	• <u>Basic Computer Skills Level 3</u>
Glossary:	
• refer to text	

Information Technology - P5

Level Code: P5 IT



MINISTRY OF EDUCATION

Bermuda
2001

PRIMARY SCHOOL PHASE B OVERVIEW

Subject Title: Information Technology

Subject Code: P5 IT

Time Allotted: 90 min/wk, (15 min. Keyboarding, 70 min. IT)

RATIONALE

The purpose of this primary school Information Technology curriculum is to prepare students to live and learn in highly technological environments by exposing them to a variety of these technologies and their uses as well as the impact they are having on our society and the workplace. It is designed to employ information technologies as learning tools, which allow students to present new information in interesting ways. Students will gain confidence with information technology individually and collaboratively problem solve and conduct research to explore a variety of topics related to other curriculum areas and their own interests.

These goals for students are achieved through:

- providing opportunities for students to learn with and about a variety of technologies
- the development of the skills needed to apply these technologies for different tasks in a variety of settings
- participation in activities that are meaningful, enjoyable and allow them to use their creativity

PRIMARY FIVE (P5) REQUIREMENTS

The requirements for this level are as follows:

• Performance Assessment - Participation in discussions - Operation of computer system - Demonstrate appropriate and ethical behaviour with technology - Operation of software tools and features - File management - Use keyboarding techniques - Use Internet resources - Operation of browser	60%
• Product Assessment - Portfolio containing computer generated documents designed for a variety of purposes and audiences - Survey - Web site collection - Occupations chart	40%
• Written Assessment	N/A
Total	100%

MATERIALS OF INSTRUCTION (Adopted Text)

Milburn, MaryJo Fante. Basic Computer Skills. SRA, 2001

PHASE B OUTLINE

P4 Module Titles A - D	P5 Modules Titles A - D	P6 Modules Titles A - D
A. IT Components and Their Use 6 - uses of computer components and peripherals - troubleshooting - storage devices - computer care and operation - network structure - special keys - user protocols - file management - menu types - intro to the Internet - sending e-mail - Web applications - other technologies	A. IT Components and Their Use 6 - computer components and peripherals - troubleshooting - computer care and operation - network components and structure - user protocols - file management - window/desktop - software selection and use - Web applications - E-mail etiquette - Internet navigation - other technologies	A. IT Components and Their Use 6 - computer components and peripherals - troubleshooting - hardware and software manuals - acceptable use policies - software licensing - software selection and use - Web applications - searching the Internet - research websites
B. Keyboarding 6 - keyboarding posture - fingers on keys - speed and accuracy - keyboarding habits	B. Keyboarding 6 - keyboarding posture - fingers on keys - speed and accuracy - keyboarding habits	B. Keyboarding 6 - keyboarding posture - fingers on keys - speed and accuracy - keyboarding habits
C. Computer Applications 17 - use of computer applications - special printing features - edit menu - formatting text - illustrating ideas with graphics tools - introduction to presentation software - presentation skills - format of communications - tool- task matching - search, organize information - multimedia resources - communication tools and strategies - collaboration and problem solving	C. Computer Applications 17 - use of computer applications - writing aids - document layout - creating presentations - introduction to databases - introduction to spreadsheets - search, organize information - multimedia resources - tool-task matching - search, manage and organize information - communication tools and strategies - collaboration and problem solving	C. Computer Applications 17 - use of computer applications - editing graphics - refining skills with presentations - enhancing presentations - refining skills with databases - refining skills with spreadsheets - personal uses for computer applications - multimedia resources - tool-task matching - search, manage and organize information - communication tools and strategies - collaboration and problem solving

D. IT In Society and Workplace	5
- early computers	
- computers then and now	
- user etiquette	
- sharing	
- peer tutoring	
- cooperation	
- rules	
- care	
- user ethics	
- uses of technology	
- working with technology	
- improper uses of technology	
- impact of technology on society	
- impact of technology on personal life	
- topical technology issues	

D. IT In Society and Workplace	5
- early counting tools	
- calculating machines	
- first modern computers	
- contemporary computers	
- sharing	
- peer tutoring	
- cooperation	
- rules	
- care	
- user ethics	
- privacy	
- copyright	
- flaming	
- hacking	
- software and technologies for the arts	
- personal IT use	
- working with technology	
- consequences of improper uses of technology	
- positive and negative impact of technology on society	
- impact of technology on personal life	
- topical technology issues	

D. IT In Society and Workplace	5
- uses of early counting machines	
- development of technology innovations	
- sharing	
- peer tutoring	
- cooperation	
- rules	
- care	
- user ethics	
- respect	
- viruses	
- privacy of personal information	
- personal IT use	
- working with technology	
- consequences of improper uses of technology	
- positive and negative impact of technology on society	
- impact of technology on personal life	
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Subtotal	34
Optional Weeks	<u>4</u>
Total Weeks	38

Subtotal	34
Optional Weeks	<u>4</u>
Total Weeks	38

Subtotal	34
Optional Weeks	<u>4</u>
Total Weeks	38

PRIMARY SCHOOL

check one: P1 ☐ P2 ☐ P3 ☐ P4 ☐ P5 ☒ P6 ☐

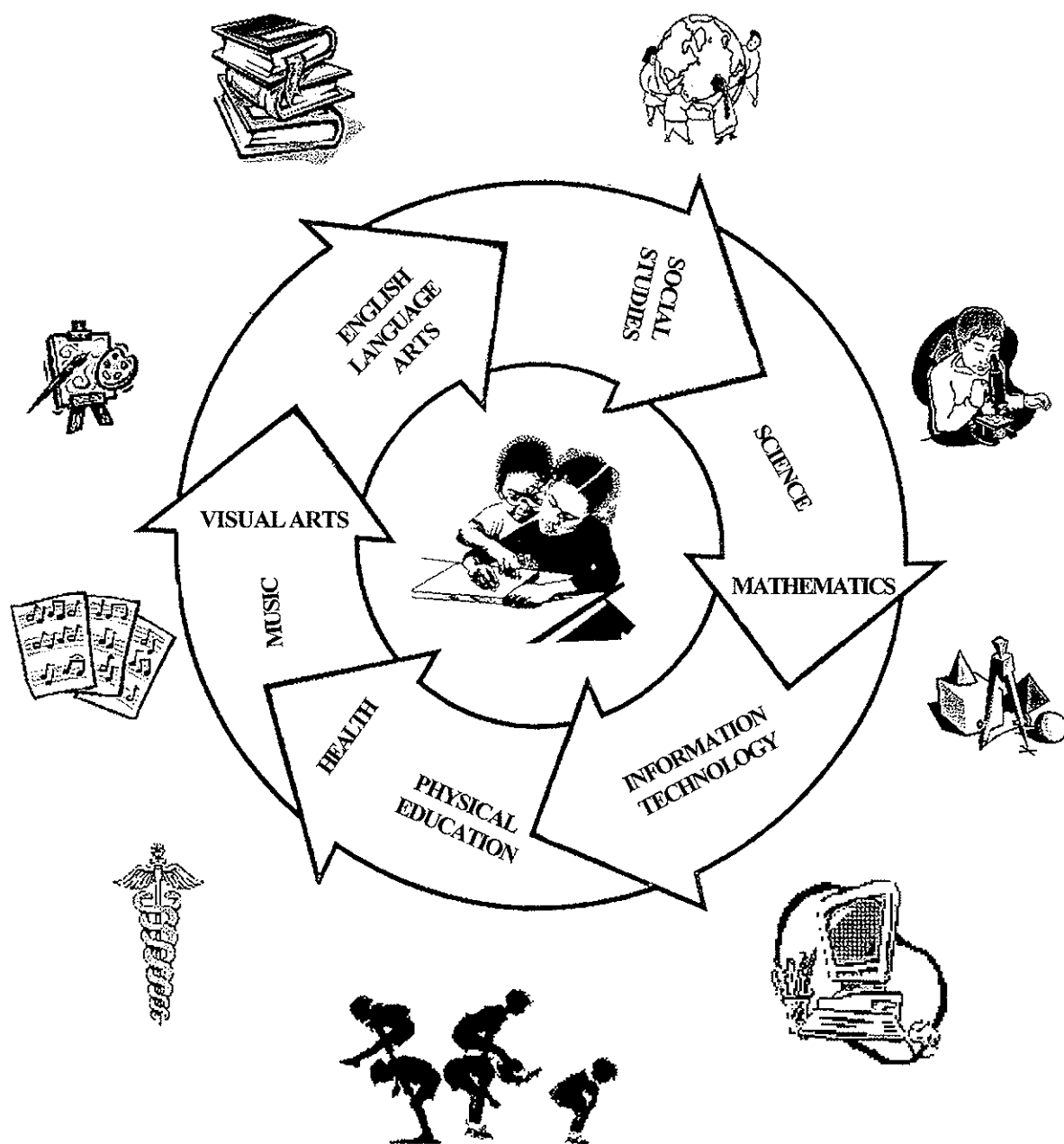
Information Technology

GOALS			SUBGOALS	MODULE & CURRICULUM CORRELATION MATRIX			
1	Operation & Technology Concepts	1.1	Understand technology	x	x		x
		1.2	Use technology	x	x		x
2	Social & Ethical Issues Associated With Technology	2.1	Technology issues				x
		2.2	Positive use and ethics				x
		2.3	Positive attitudes				x
3	Technology Productivity Tools	3.1	Enhance learning			x	
		3.2	Skills with tools			x	
		3.3	Manage & manipulate data			x	
4	Technology Communication Tools	4.1	Interaction with others	x		x	
		4.2	Communication of ideas	x		x	
		4.3	Tools & resources	x		x	
5	Technology Research Tools	5.1	Access data			x	
		5.2	Process data			x	
		5.3	Evaluate data & resources			x	
6	Technology For Problem Solving	6.1	Using resources			x	
		6.2	Apply solutions & strategies				
		6.3	Programing				
CONTENT STRUCTURE		IT Components And Their Use		x	x		
		Applications				x	
		Programing				x	
		IT in Society And The Workplace					x
			MODULES	A	B	C	D

MODULE KEY

A - IT Components and Their Use
B - Keyboarding

C - Computer Applications
D - IT in Society and the Workplace



Module A

INFORMATION TECHNOLOGY

Module Title: IT Components And Their Use

Sequence Reference: P5 IT-A

Time allotted: 6 weeks

PHASE A

PHASE B

PS

P1

P2

P3

P4

P5

P6

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Subgoal Emphasis:

- 1.1 - 1.2 Operation and Technology Concepts
- 4.1 - 4.3 Technology Communication Tools

Content Focus:

- IT Components and Their Use

Curriculum Objectives:

Content Detail:

At the end of this module, students will:

- briefly describe the use of the basic components of a computer system
- briefly describe the care of the basic components of a computer system
- demonstrate the correct use of special keys of the keyboard
- manage computer files
- handle and use software appropriately
- select software tools and multimedia resources for specific purposes
- navigate age-appropriate software
- operate other technologies
- communicate with others using e-mail
- briefly describe uses of the Internet, using age appropriate language
- access a teacher-selected website for research

- hardware vs. software;
- peripherals: scanner, digital camera, etc., user manual,
- network: file server, connectivity, linking workstations;
- hardware care: classroom help protocol, avoid dust, dirt, food, drinks, careless movements, magnets, direct sunlight (disks), use clean hands, operate at safe distance from monitor, use mouse pad;
- network user protocol: privacy, respect, folder, acceptable use policy
- getting around the desktop: directory, file names, file types, open folder, open CD-ROM, copy
- windows: resize, maximize, minimize; start menu
- save: save window, save as;
- keyboard techniques; special keys: escape, control, power keys;
- software types: matching to task, games, productivity tools: word processing, draw/paint graphics, spreadsheets, databases, encyclopedias; reference materials: performing searches, key word(s), multimedia;
- careful handling of software: software manual, help menu, copyright, licence agreement, privacy, virus protection;
- other technologies: VCR/ audio tape recorders, CD, DVD players, remote control, calculators, etc.
- Web applications: WWW, business: sales, product information & support, personalized services, etc.; entertainment, hobbies;
- e-mail: etiquette, send, reply, forward to, address, copy to, sending attachments;
- Internet navigation: forward and back buttons, open, home, search, keyword go, scrolling;

Module Title: IT Components and Their Use	Sequence Reference: P5 IT-A
Recommended Instructional Strategies:	Recommended Formative Assessment Strategies:
Students develop skills and confidence with IT as they use technology in a variety of settings and for different uses. A deeper understanding of the operation and nature of technology should emerge as students become more fluent with technology-related terms and the ability to troubleshoot hardware and software problems. • Reinforce students' knowledge of computer components by creating opportunities for them to use them. Example: Scanned images of maps can be included in social science reports; digital cameras can be taken on field trips to collect information for science presentations. Review the basic structure of a network and draw comparisons with the Internet. (see IT in Society and the Workplace) • Have students review network and protocol for help, signing on/ off. Discuss network etiquette: accessing files; passwords, sharing files and software, etc. • Ensure that students can differentiate between software and hardware. Help them to recognize the relative size of floppy vs. CD-ROM vs. hard drive vs. file server. • Discuss the management of files. Demonstrate viewing disk contents. Help students to locate their own folders, files, size, type, date, etc. Discuss common problems with files and have them share troubleshooting strategies. • As students receive assignments ask them to identify applications, electronic resources or other software packages that would assist with the task. Ask students to give reasons for their answers. • Integrate communications with other class groups to enrich the learning experience. Partner with a class participating in an on-line project. Use e-mail to encourage collaboration and to share projects. Subscribe to electronic newsletters with related topics. • Discuss acceptable use: etiquette; protocol for attachments; etc. Review sending mail features: address format, send, and forward. • Give students the opportunity to explore pre-selected web sites that support specific topics or subject areas. Allow them to conduct web quests of specific sites to discover answers to specific questions that you set up. Include questions that students would like to ask other students. Talk to students about using material off the web and the importance of paraphrasing material; using their own words. • Encourage students to collect addresses of sites they find interesting. Have students develop reviews for their sites.	Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding. • Observe students use of equipment and compliance with rules • Participation in discussion • Students can identify correct application tool for assignment • Have students research particular help topics using search • Students can display directory and manage files • Students can send and open e-mail • Students can use web browser • Students can locate information on web site • Check the development of favourite sites list

Module Title: IT Components and Their Use

Sequence Reference: P5 IT-A

Summative Assessment:

Assessments given at the end of a module where the data is used to generate grades.

- **Performance Assessment**
 - Independent competencies and appropriate behaviour with technology.
 - Students can locate a teacher selected web site and research the answers to questions.
 - Students can independently copy files and save them to their own folder.
 - Students can correspond sending attachments and site addresses using e-mail.
- **Product Assessment**
 - Student's list of reviewed sites with descriptions.

Special Resources:

(materials, equipment & community involvement)

- Computer system (lab)
- MS Works
- Internet access
- Internet browser with e-mail
- e-pals
- Student Writing Centre
- reviewed web sites
- supplies, paper, markers, etc

References - Teacher:

Teacher Resources

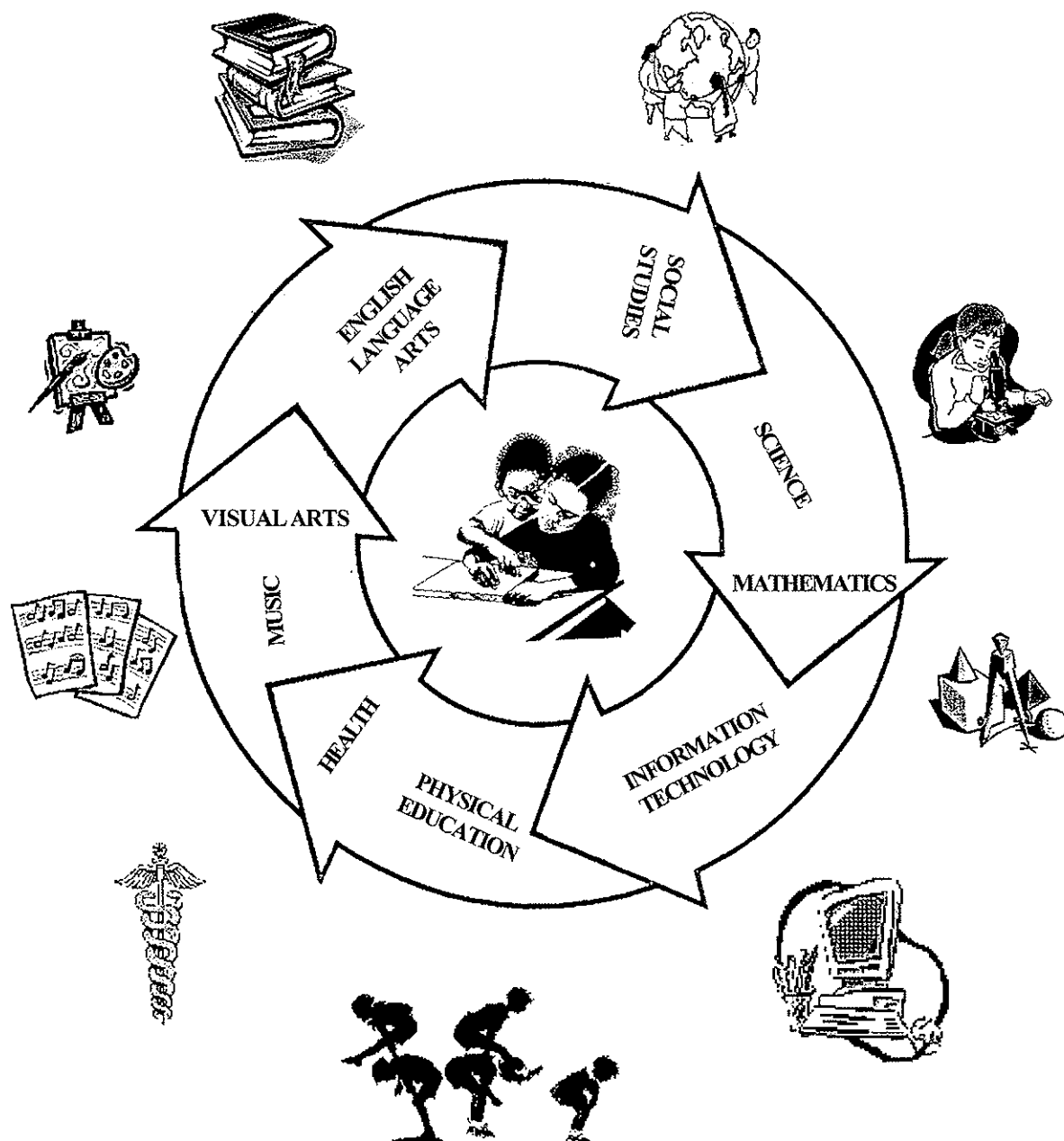
- Willis, Stephens & Matthew, Using Technology In The Classroom. Allyn & Bacon, 1996
- Shelly, Cashman, Counter, Teachers Discovering Computers: A Link to the Future. 1999
- Giesert & Futnell, Teachers, Computers & Curriculum: Using Computers in the Classroom. 1999
- Steoien, Senn & Sepien. The Internet & Problem-Based Learning. Zephyr Press, 2000

References - Student:

- Basic Computer Skills Level 4

Glossary:

- refer to text



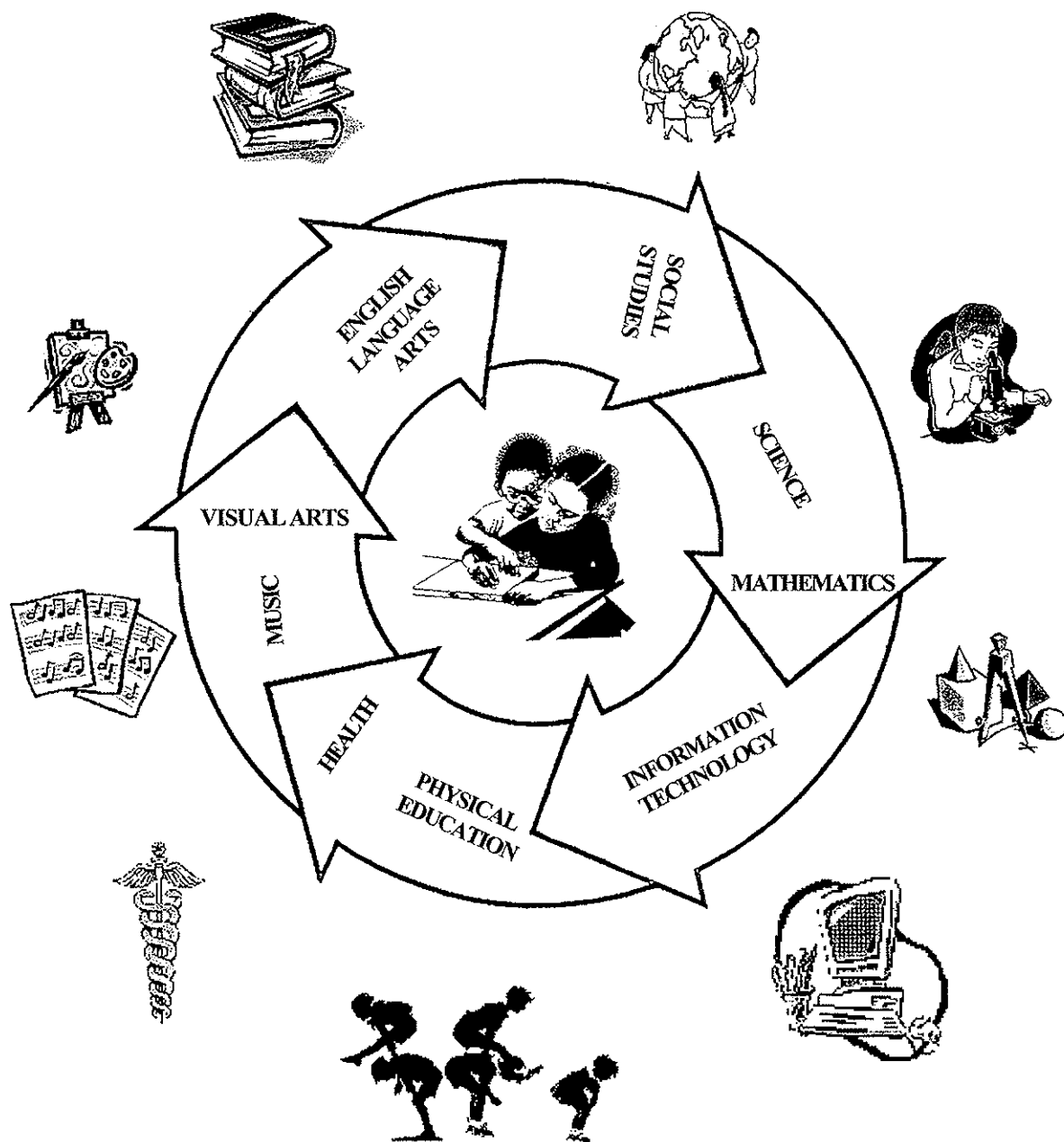
Module B

INFORMATION TECHNOLOGY

Module Title: Keyboarding Time allotted: 6 weeks	Sequence Reference: P5 IT-B						
	PHASE A				PHASE B		
	PS	P1	P2	P3	P4	P5	P6
	☐	☐	☐	☐	☐	☒	☐
Subgoal Emphasis: 1.1 - 1.2 Operation and Technology Concepts	Content Focus: IT Components and Their Use						
Curriculum Objectives:				Content Detail:			
At the end of this module, students will: - demonstrate the correct posture when keyboarding - use keyboard skills in other curriculum areas - increase speed and accuracy keying the entire keyboard by touch using correct fingering with 85% accuracy				- as part of correct posture: straight spine; elbows close to sides; forearms parallel to floor, fingers curved, centre of body in front of keyboard; - as per computer programme - maintaining keyboarding posture and techniques outside of keyboarding activities			

Module Title: Keyboarding	Sequence Reference: P5 IT-B
Recommended Instructional Strategies:	Recommended Formative Assessment Strategies:
• as per software and text • keyboarding to be taught for 15 minutes during each of 34 lessons i.e. 15 of 90 minutes	Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding. • as per practice and speed tests in software

Module Title: Keyboarding	Sequence Reference: P5 IT-B
Summative Assessment:	
Assessments given at the end of a module where the data is used to generate grades. Students maintain proper posture and fingering when completing assessment contained in software.	
Special Resources:	
(materials, equipment & community involvement)	
References - Teacher: Teacher Resources - Willis, Stephens & Matthew, <u>Using Technology In The Classroom</u>. Allyn & Bacon, 1996 - Shelly, Cashman, Counter, <u>Teachers Discovering Computers: A Link to the Future</u>. 1999 - Giesert & Futnell, <u>Teachers, Computers & Curriculum: Using Computers in the Classroom</u>. 1999	
References - Student: <u>Basic Computer Skills</u> Level 4	
Glossary:	
refer to text	



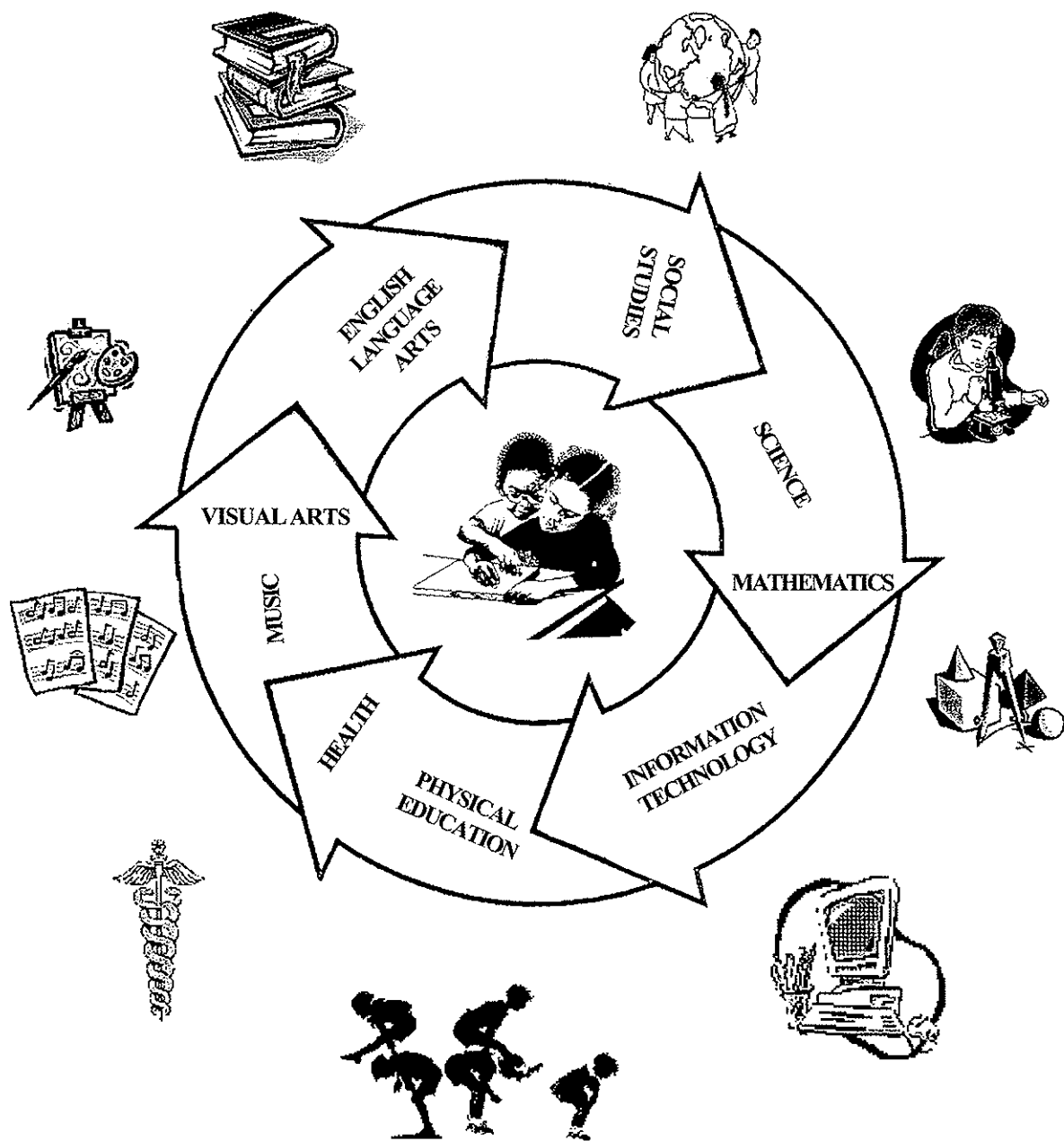
Module C

INFORMATION TECHNOLOGY

Module Title: Computer Applications Time allotted: 17 weeks	Sequence Reference: P5 IT-C						
	PHASE A				PHASE B		
	PS	P1	P2	P3	P4	P5	P6
	☐	☐	☐	☐	☐	☒	☐
Subgoal Emphasis: 3.1 - 3.3 Technology Productivity Tools 4.1 - 4.3 Technology Communication Tools 5.1 - 5.3 Technology Research Tools 6.1 Technology for Problem Solving	Content Focus: Applications						
Curriculum Objectives:				Content Detail:			
At the end of this module, students will: - create and manage computer generated documents - use age-appropriate applications to create and edit computer generated documents - format text using a word processor to produce a variety of documents - use basic desktop publishing techniques - use graphics software tools - use basic presentation software tools - use electronic databases - use databases to manage and explore information - solve problems using spreadsheet software - use technology tools to collaborate with others to solve problems or present ideas - use application tools to communicate with others				- uses of computer applications for communication and problem-solving: word processing program for writing; graphics programs for pictures; presentation tools: for groups, projects; data bases and spreadsheets to manage information and explore solutions to problems - file menu: find - edit menu: cut, paste, copy; word processor: spell check, thesaurus; graphics: tools, crop - font: effects, underline; indent - line spacing: single, double - document layout: headlines, borders, banner, balance, purpose, design - presentation: create presentation, slide layout, text box, background - navigating presentation: slide view, forward/next, back/previous - presentations to a group: audience, posture, delivery skills, voice projection, eye contact - parts of a database: field, form, record, traditional databases: phone book, address books, dictionary - using a database: list view, record view, adding records, search, new/add records - real-life applications: banks, supermarkets, stores, hospitals, etc. - electronic resources: encyclopedias, CD-ROM, Internet, performing simple searches - spreadsheet: cells, addresses - insert: label, numbers/values - navigating the spreadsheet: - real-life applications: business, budget planning, graphing, etc.			

Module Title: Computer Applications	Sequence Reference: P5 IT-C
Recommended Instructional Strategies:	Recommended Formative Assessment Strategies:
Computer applications provide the teacher with the opportunity to enrich the learning experience. Students must make connections with previously learned knowledge and increase their understanding of it in order to present new information for a variety of audiences. This requires the development of skills with technology applications, higher order thinking and problem solving. As students work on assignments, encourage them to exchange and share ideas and problem solve amongst themselves. Facilitate collaboration during problem solving and investigations with students in other schools and countries. • To increase skills with presentation tools, have students create a slide presentation beginning with a template. Help students to identify key ideas and to create a new slide for each. Students can insert graphics or original artwork. Students should complete the project with a short oral presentation to teachers, parents and/or peers. • Introduce students to databases with examples of traditional databases: phone book, encyclopedias, dictionaries. Have students collect information on the interests of their classmates on index cards. Ask students to perform searches amongst their cards on one field, progressing to two fields. Discuss the advantages of electronic databases. • Create a simple electronic database using the same fields as the card database. Ask students to create new records and enter their own personal information. Add some fictional students. Ask students to predict the outcome of searches. Demonstrate searches using this database and discuss the findings. Allow students to conduct research using electronic databases. • Working alone or in pairs, have students organize labels and values for a budget spreadsheet on paper. Have them calculate totals, etc. Change quantities and have students calculate the budget again. Have students analyze how they worked with their budget. Introduce the terms, cells, addresses, labels, values, operations, etc. Show them how a spreadsheet can calculate mathematical operations by adding each value and then adding cell addresses, etc. Have students solve a simple budget problem using their spreadsheet. • Have students record data from a variety of sources into spreadsheets. Calculate graphs using the graphing tool. Draw students' attention to examples of graphical information found in everyday sources. Discuss the advantages of displaying information in this way	Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding. • Students demonstrate an increasingly confident use of the applications. Observe their use of the applications and the quality of their documents. • Students can plan presentations on paper. Check for content before students progress to making slides. • Monitor the design of the records for the database. Ensure that the records are the same and that information is entered in a consistent manner. • Observe students as they sort through cards. Let students <u>be</u> the cards. Have them sort themselves according to criteria you call out and move to various areas of the room accordingly. • Question students about the information in the chart to determine the meaning they derive from its organization. • Have students work out their solutions on paper before entering it into the spreadsheet. Discuss these solutions to determine their understanding.

Module Title: Computer Applications	Sequence Reference: P5 IT-C
Summative Assessment:	
Assessments given at the end of a module where the data is used to generate grades. • Portfolio: - Pieces of work (various documents, presentations, e-mail communications) displaying a range of abilities with tools used across an array of subject areas. These items should show the development of skills over time. - Students should be able to describe their progress during student–teacher conference. • Performance: - Students demonstrate competency with application tools, multimedia and internet resources. - Participation in discussions and group work.	
Special Resources: (materials, equipment & community involvement)	
• Computer system in classroom and lab • MS Works, MS Office • Multimedia resources • Kid Pix Deluxe.	• CD-ROM dictionaries • other multimedia resources • Student Writing Center • paper, crayons, markers, book covers, etc
References - Teacher:	References - Student:
Teacher Resources • Willis, Stephens & Matthew, <u>Using Technology In The Classroom</u>. Allyn & Bacon, 1996 • Shelly, Cashman, Counter, <u>Teachers Discovering Computers: A Link to the Future</u>. 1999 • Giesert & Futnell, <u>Teachers, Computers & Curriculum: Using Computers in the Classroom</u>. 1999 • Sterling, Mary Ellen, <u>Write All About It</u>. Teacher Created Materials, 1993	• <u>Basic Computer Skills Level 4</u>
Glossary:	
• refer to text	



Module D

INFORMATION TECHNOLOGY

Module Title: IT in Society and Workplace Time allotted: 5 weeks	Sequence Reference: P5 IT-D						
	PHASE A				PHASE B		
	PS	P1	P2	P3	P4	P5	P6
Subgoal Emphasis: 1.1 - 1.2 Operation and Technology Concepts 2.1 - 2.3 Social and Ethical Issues Associates With Technology	Content Focus: IT in Society and the Workplace						
Curriculum Objectives:				Content Detail:			
At the end of this module, students will: - briefly describe history of computers - work cooperatively and collaborate with peers and others when using technology - discuss, demonstrate and promote ethical conduct and the consequences of misuse - use technology for creative expression - observe care and safety rules when operating technology - explain the importance of technology to their own lives - describe how people use technology in a variety of occupations - discuss current technology issues - identify and discuss positive and negative impact technology has on our lives				- history: early tools assisted with counting: feet, hands, rocks, pebbles, - abacus: help with calculations, use spread from China - first calculating machines: punch cards, used mostly for math - first modern computers: large, slow, expensive, few, - first modern computers uses: counting people, scientific research, design weapons, etc - modern computers: small to very small, fast, perform many functions, relatively cheap, found in a variety of settings - sharing: peer-to-peer sharing, sharing with others, technology tutors, assisting others, task sharing, taking turns, time management - school rules: appropriate treatment of school equipment; - respect; privacy of others, flaming, - ethics with shared files and resources; copyright, licensing, piracy, hacking, viruses, - software & other technologies for: music, visual arts, animation, creative writing expression, etc. - care: avoid dust, dirt, food, magnetism, drinks, careless movements, direct sunlight (disks), use clean hands; operate at safe distance from monitor; See IT Components and Their Use - uses of technology: music, visual arts, creative writing, playing games, learn new skills, drawing and painting, listen to stories, work, with parents, others, in industry, business, education, home; service, research and entertainment applications; - impact of inappropriate uses - discuss current issues; positive and negative impact, productivity, hacking, sabotage; software piracy; lack of privacy, advances in science, quality of life, etc.			

Module Title: IT in Society and Work Place	Sequence Reference: P5 IT-D
Recommended Instructional Strategies:	Recommended Formative Assessment Strategies:
• Have students research the history of computers. Help students to identify key events and to develop a time line marking key events. Students can work in groups to research these topics. • Help students to develop a sense of ownership for school equipment by volunteering to help care for the computer lab and equipment. Make them aware that other students are looking to them as examples. Students may also offer to assist in computer clubs for younger students. • Lead students in discussions of issues regarding the appropriate use of technology. Point out the need for persons to exercise mutual respect and to conform to rules and security procedures to ensure uninterrupted access/service. Ask them to identify how they can encourage proper use of equipment and other resources. Have groups of students use technology to present their suggestions. • Have students conduct a survey of parents and relatives to ask what their jobs were like before technology was introduced. Discuss if they think things were better or are they worse since new technologies have been introduced. Help students chart the results. Ask students if the results were as they expected. Help students to draw correlations with their findings and current issues. Example: increased use of technology has meant that some jobs are easier. People lose their jobs because less are needed • As students study Bermuda's economy and occupations, help them to identify how technology is used in these areas. Help students to identify how people trained for these positions and the qualifications required. Assist students in assessing their own skills by doing an inventory of programs they can use.	Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding. • Compliance with school rules • Student-student-teacher interaction • Participation in discussion and group work • List of suggestions; personal inventory • Monitor how students conduct survey: produce questionnaire, collect data, chart data

Module Title: IT in Society and Work Place	Sequence Reference: P5 IT-D
Summative Assessment:	
Assessments given at the end of a module where the data is used to generate grades. • Product Assessment: - Survey results compiled with interview instrument and conclusions. - Chart containing occupations and qualifications as well as skills. • Performance Assessment: - Participation in presentation on promoting care and proper use of equipment. - Group participation/ teamwork in presentation preparation. - Students can be seen to behave in a positive and ethical manner with peers and others.	
Special Resources: (materials, equipment & community involvement)	
• Computer system • Internet access • Magazines, electronic encyclopedias	
References - Teacher:	References - Student:
Teacher Resources • Willis, Stephens & Matthew, <u>Using Technology In The Classroom</u>. Allyn & Bacon, 1996 • Shelly, Cashman, Counter, <u>Teachers Discovering Computers: A Link to the Future</u>. 1999 • Giesert & Futnell, <u>Teachers, Computers & Curriculum: Using Computers in the Classroom</u>. 1999	• <u>Basic Computer Skills</u> Level 4
Glossary:	
• refer to text	

Information Technology - P6

Level Code: P6 IT



MINISTRY OF EDUCATION

Bermuda
2001

PRIMARY SCHOOL PHASE B OVERVIEW

Subject Title: Information Technology

Subject Code: P6 IT

Time Allotted: 90 min/wk, (20 min. Keyboarding, 70 min. IT)

RATIONALE

The purpose of this primary school Information Technology curriculum is to prepare students to live and learn in highly technological environments by exposing them to a variety of these technologies and their uses as well as the impact they are having on our society and the workplace. It is designed to employ information technologies as learning tools, which allow students to present new information in interesting ways. Students will gain confidence with information technology individually and collaboratively problem solve and conduct research to explore a variety of topics related to other curriculum areas and their own interests.

These goals for students are achieved through:

- providing opportunities for students to learn with and about a variety of technologies
- the development of the skills needed to apply these technologies for different tasks in a variety of settings
- participation in activities that are meaningful, enjoyable and allow them to use their creativity

PHASE REQUIREMENTS

The requirements for this level are as follows:

• Performance Assessment - Participation in discussions - Operation of computer system - Demonstrate appropriate and ethical behaviour with technology - Operation of software tools and features - Use keyboarding techniques - Use Internet resources - Operate of browser	60%
• Product Assessment - Portfolio containing computer generated documents designed for a variety of purposes and audiences - Group history presentation - Web site collection - Occupations list	40%
• Written Assessment	N/A
Total	100%

MATERIALS OF INSTRUCTION (Adopted Text)

Milburn, MaryJo Fante. Basic Computer Skills. SRA, 2001

PHASE B OUTLINE

P4 Module Titles A - D	P5 Modules Titles A - D	P6 Modules Titles A - D
A. IT Components and Their Use 6 - uses of computer components and peripherals - troubleshooting - storage devices - computer care and operation - network structure - special keys - user protocols - file management - menu types - intro to the Internet - sending e-mail - Web applications - other technologies	A. IT Components and Their Use 6 - computer components and peripherals - troubleshooting - computer care and operation - network components and structure - user protocols - file management - window/desktop - software selection and use - Web applications - E-mail etiquette - Internet navigation - other technologies	A. IT Components and Their Use 6 - computer components and peripherals - troubleshooting - hardware and software manuals - acceptable use policies - software licensing - software selection and use - Web applications - searching the Internet - research websites
B. Keyboarding 6 - keyboarding posture - fingers on keys - speed and accuracy - keyboarding habits	B. Keyboarding 6 - keyboarding posture - fingers on keys - speed and accuracy - keyboarding habits	B. Keyboarding 6 - keyboarding posture - fingers on keys - speed and accuracy - keyboarding habits
C. Computer Applications 17 - use of computer applications - special printing features - edit menu - formatting text - illustrating ideas with graphics tools - introduction to presentation software - presentation skills - format of communications - tool- task matching - search, organize information - multimedia resources - communication tools and strategies - collaboration and problem solving	C. Computer Applications 17 - use of computer applications - writing aids - document layout - creating presentations - introduction to databases - introduction to spreadsheets - search, organize information - multimedia resources - tool-task matching - search, manage and organize information - communication tools and strategies - collaboration and problem solving	C. Computer Applications 17 - use of computer applications - editing graphics - refining skills with presentations - enhancing presentations - refining skills with databases - refining skills with spreadsheets - personal uses for computer applications - multimedia resources - tool-task matching - search, manage and organize information - communication tools and strategies - collaboration and problem solving

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Subtotal 34
Optional Weeks 4
Total Weeks 38

Subtotal 34
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Total Weeks 38

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Total Weeks 38

PRIMARY SCHOOL

check one: P1 ☐ P2 ☐ P3 ☐ P4 ☐ P5 ☐ P6 ☒

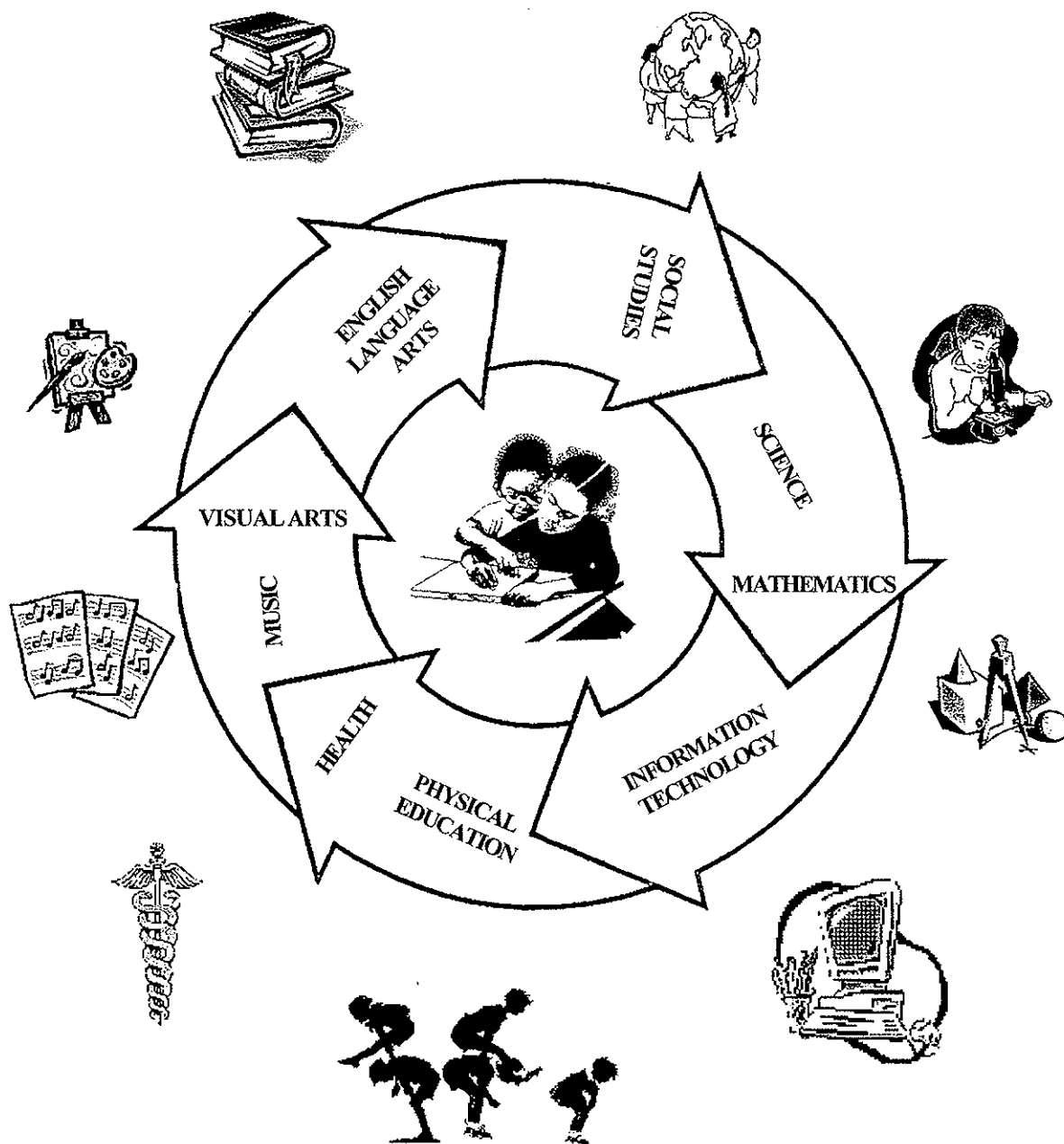
Information Technology

GOALS			SUBGOALS	MODULE & CURRICULUM CORRELATION MATRIX			
1	Operation & Technology Concepts	1.1	Understand technology	x	x		x
		1.2	Use technology	x	x		x
2	Social & Ethical Issues Associated With Technology	2.1	Technology issues				x
		2.2	Positive use and ethics	x			x
		2.3	Positive attitudes				x
3	Technology Productivity Tools	3.1	Enhance learning			x	
		3.2	Skills with tools			x	
		3.3	Manage & manipulate data	x		x	
4	Technology Communication Tools	4.1	Interaction with others			x	
		4.2	Communication of ideas			x	
		4.3	Tools & resources			x	
5	Technology Research Tools	5.1	Access data			x	
		5.2	Process data			x	
		5.3	Evaluate data & resources			x	
6	Technology For Problem Solving	6.1	Using resources			x	
		6.2	Apply solutions & strategies				
		6.3	Programing				
CONTENT STRUCTURE		IT Components And Their Use		x	x	x	x
		Applications		x		x	
		Programing					
		IT in Society And The Workplace					x
		MODULES		A	B	C	D

MODULE KEY

A - IT Components and Their Use
B - Keyboarding

C - Computer Applications
D - IT in Society and the Workplace



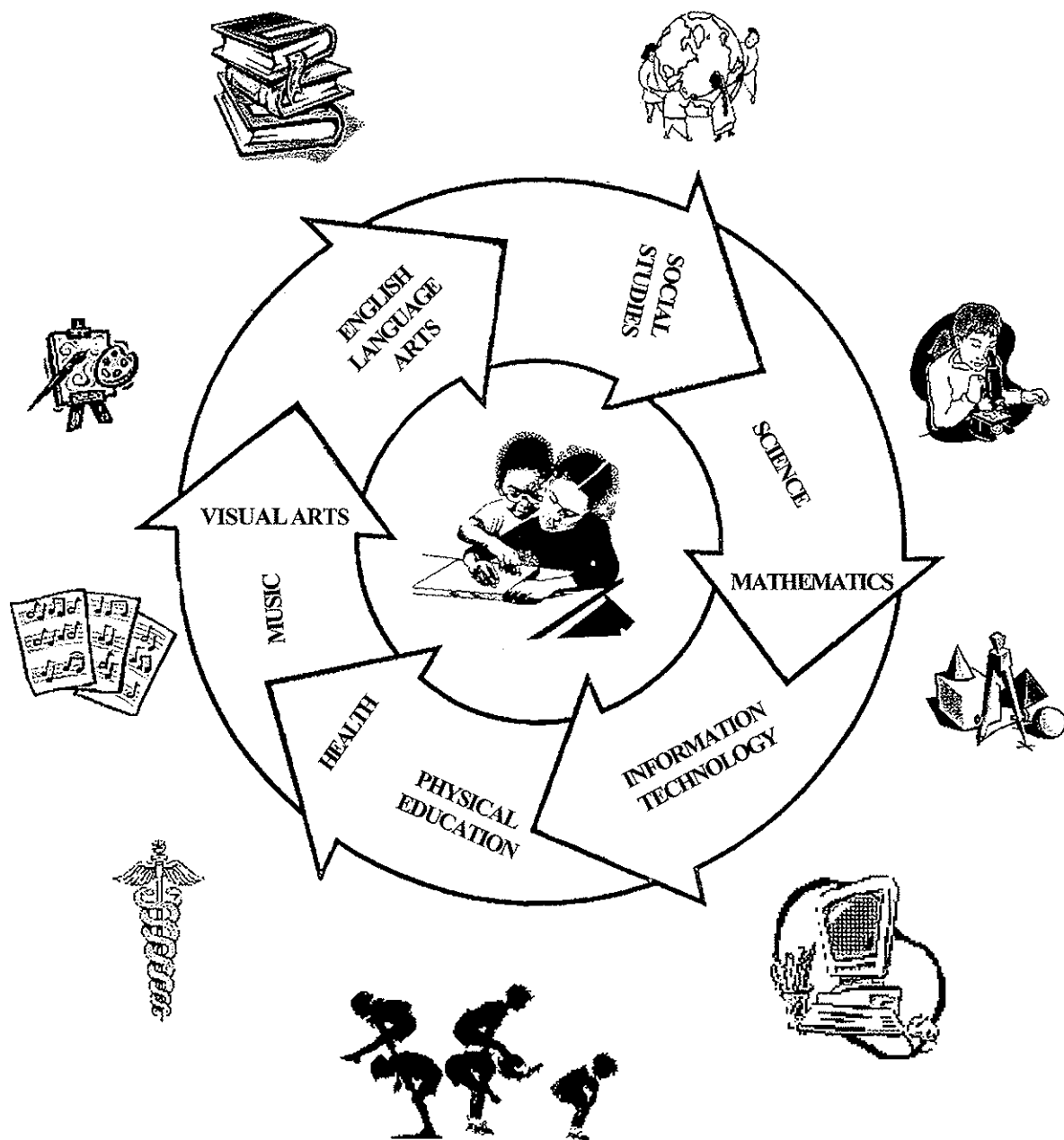
Module A

INFORMATION TECHNOLOGY

Module Title: IT Components And Their Use Time allotted: 6 weeks	Sequence Reference: P6 IT-A						
	PHASE A				PHASE B		
	PS	P1	P2	P3	P4	P5	P6
	☐	☐	☐	☐	☐	☐	☒
Subgoal Emphasis: 1.1 - 1.2 Operation and Technology Concepts 2.2 Social and Ethical Issues Associated with Technology 3.3 Technology Communication Tools	Content Focus: Operation and Technology Concepts						
Curriculum Objectives:				Content Detail:			
At the end of this module, students will: - briefly describe the use of the basic components of a computer system - briefly describe the care of the basic components of a computer system - demonstrate the correct use of special keys managing computer files - handle and use software appropriately - discriminate amongst software tools and multimedia as appropriate resources for specific purposes - operate other technologies - communicate with others using e-mail - discuss the advantages and disadvantages of the internet, using age appropriate language - access and navigate teacher-selected web sites for research				- hardware vs. software; troubleshooting: help resources, using computer/software manual, - network: workstation; - hardware care: classroom help and network protocol, - acceptable use protocol: privacy, respect, directory, files, folders, passwords - keyboard techniques; special keys: control, power keys; - software types: matching to task - software care: software manual, copyright, licence agreement, privacy, virus protection - software uses: games, productivity tools: word processing, draw/paint, presentation, database, spreadsheet tools, , educational software; reference materials: encyclopedias, key word(s), multimedia, virus protection; - other technologies: VCR/ audiotape recorders, CD player, remote control, calculators, etc. - Web applications: business: sales, product information and support, personalized services, etc.; entertainment, hobbies; - e-mail: etiquette, send, reply, forward to, address, copy to, opening and sending attachments - internet navigation: forward and back buttons, open, home, search, keyword go, scrolling;			

Module Title: IT Components and Their Use	Sequence Reference: P6 IT-A
Recommended Instructional Strategies:	Recommended Formative Assessment Strategies:
Students develop skills and confidence with IT as they use technology in a variety of settings and for different uses. A deeper understanding of the operation and nature of technology should emerge as students become more fluent with technology-related terms and the ability to troubleshoot hardware and software problems. • Maintain students' knowledge of computer components by increasing opportunities for them to use them. Introduce them to innovations as they appear on the scene. Encourage them to use the Internet to keep abreast of technology trends. • Reinforce students' knowledge of file maintenance by having them review their folders and their contents. Show students how to move files/folders and to back them up to diskettes when necessary. • When studying Bermuda's economy, highlight how different workers use a variety of technologies while on class field trips and site visits. Prior to the visit, have students research that industry and identify questions they want to ask. Help students compare professional tools with their own tools and experiences. Example: file server vs. mainframe; LAN vs. WAN; protocol for signing on/ off; discuss network etiquette: passwords, etc. Have students record their observations and send copies to their hosts via e-mail. (see also IT in Society and the Workplace) • As students receive assignments ask them to identify applications, electronic resources or other software packages that would assist with the task. • Assist students to combine document types (use integrated software where possible) to produce presentations or reports. Students can learn organizational skills as they practise organizing related files and folders. • Allow students to practise and develop skills and independence with browsers and directories. Help them to identify sites that will assist with research and interest and how to bookmark them. Help students to establish e-mail relationships. Use these as a means for communication and collaboration with other class groups. Use these connections to enrich the experiences of students. Example: Students can exchange information on Bermuda's natural habitats with students in other parts of the world. Reports, charts and graphs can be exchanged amongst class groups. Students can identify similarities and differences and discuss their findings. Follow-ups can include an exchange of each community's strategies for protecting habitats.	Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding. • Gauge student knowledge during class discussions and conferences on assignments • Use of Internet resources • Completion of student's list of questions • Complete report and send e-mail • Appropriate selection of tools for task • Confident use of e-mail tools • Student can produce a variety of documents

Module Title: IT Components and Their Use	Sequence Reference: P6 IT-A
Summative Assessment:	
Assessments given at the end of a module where the data is used to generate grades. • Performance Assessment - Students demonstrate confident use of hardware and software. - Students can locate information on web site and create a list of bookmarks or favourites. - Students participate in discussions. • Product Assessment - List of web sites with brief descriptions. - Students can produce a collection of e-mail correspondence.	
Special Resources: (materials, equipment & community involvement)	
• Computer system (lab) • Internet access • reviewed web sites (see text) • supplies, paper, markers, etc • site visits bank, police, media production studio	• e-pals • Student Writing Centre • Internet browser with E- Mail
References - Teacher:	References - Student:
• Willis, Stephens & Matthew, <u>Using Technology In The Classroom</u>. Allyn & Bacon, 1996 • Shelly, Cashman, Counter, <u>Teachers Discovering Computers: A Link to the Future</u>. 1999 • Giesert & Futnell, <u>Teachers, Computers & Curriculum: Using Computers in the Classroom</u>. 1999 • Steoien, Senn & Sepien. <u>The Internet & Problem-Based Learning</u>. Zephyr Press, 2000	• <u>Basic Computer Skills</u> Level 5
Glossary:	
• refer to text	



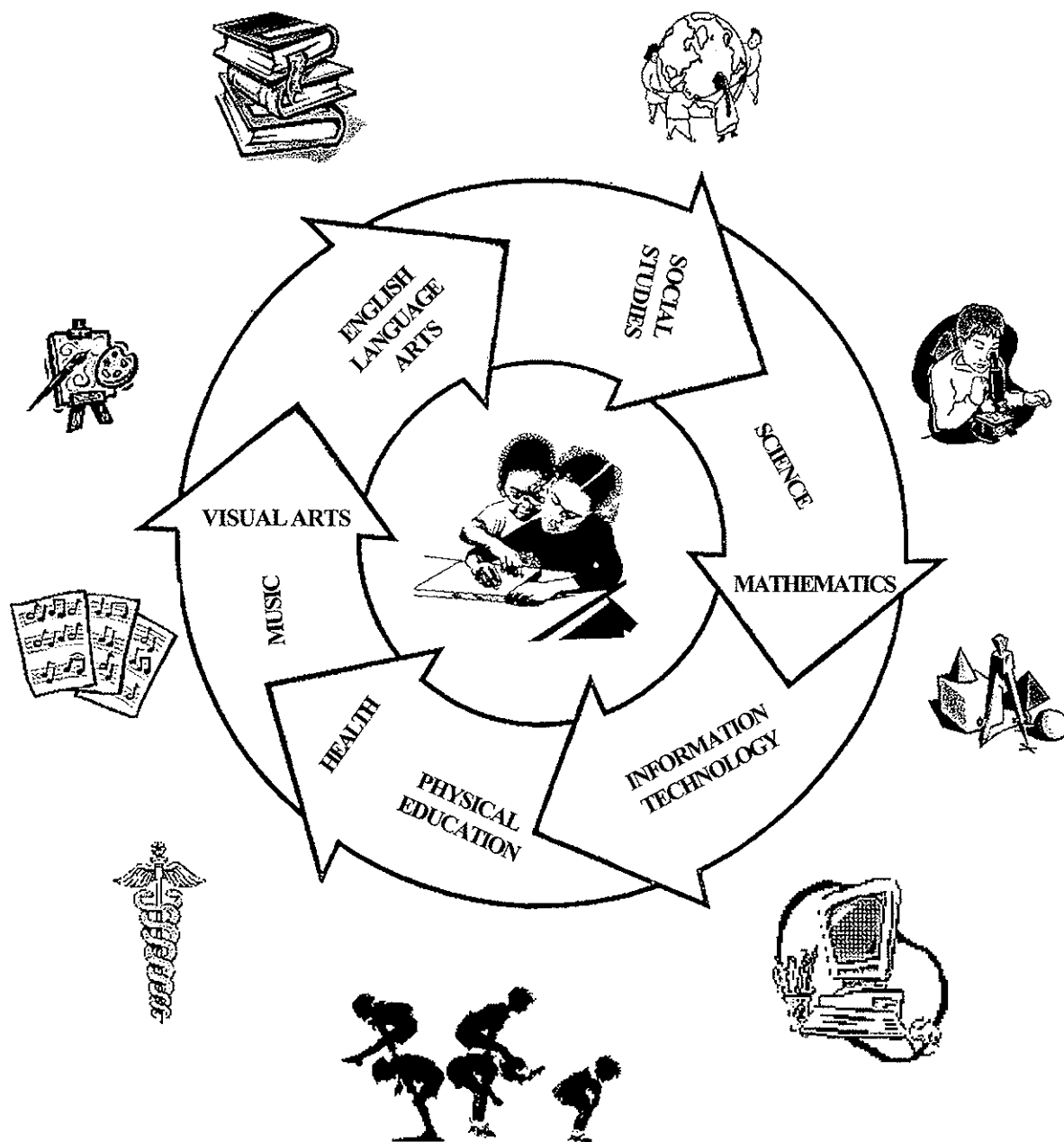
Module B

INFORMATION TECHNOLOGY

Module Title: Keyboarding	Sequence Reference: P6 IT-B																					
Time allotted: 6 weeks	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="4" style="padding: 5px;">PHASE A</th> <th colspan="3" style="padding: 5px;">PHASE B</th> </tr> <tr> <th style="padding: 5px;">PS</th> <th style="padding: 5px;">P1</th> <th style="padding: 5px;">P2</th> <th style="padding: 5px;">P3</th> <th style="padding: 5px;">P4</th> <th style="padding: 5px;">P5</th> <th style="padding: 5px;">P6</th> </tr> <tr> <td style="text-align: center; padding: 5px;">☐</td> <td style="text-align: center; padding: 5px;">☐</td> <td style="text-align: center; padding: 5px;">☐</td> <td style="text-align: center; padding: 5px;">☐</td> <td style="text-align: center; padding: 5px;">☐</td> <td style="text-align: center; padding: 5px;">☐</td> <td style="text-align: center; padding: 5px;">☒</td> </tr> </table>	PHASE A				PHASE B			PS	P1	P2	P3	P4	P5	P6	☐	☐	☐	☐	☐	☐	☒
	PHASE A				PHASE B																	
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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center; padding: 5px;"> Subgoal Emphasis: </td> <td style="width: 50%; text-align: center; padding: 5px;"> Content Focus: </td> </tr> <tr> <td style="padding: 5px;"> 1.1 - 1.2 Operation and Technology Concepts </td> <td style="padding: 5px;"> - It Components & Their Use </td> </tr> </table>	Subgoal Emphasis:	Content Focus:	1.1 - 1.2 Operation and Technology Concepts	It Components & Their Use																		
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1.1 - 1.2 Operation and Technology Concepts	It Components & Their Use																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%; padding: 5px;">Curriculum Objectives:</th> <th style="width: 50%; padding: 5px;">Content Detail:</th> </tr> <tr> <td style="padding: 5px;"> At the end of this module, students will: - demonstrate the correct posture when keyboarding - increase speed and accuracy keying the entire keyboard by touch using correct fingering to 90% accuracy - use keyboarding skills in other curriculum areas </td> <td style="padding: 5px;"> - as part of correct posture: straight spine; elbows close to sides; forearms parallel to floor fingers curved, centre of body in front of keyboard; - as per computer programme - maintaining keyboarding posture and techniques outside of keyboarding activities </td> </tr> </table>	Curriculum Objectives:	Content Detail:	At the end of this module, students will: - demonstrate the correct posture when keyboarding - increase speed and accuracy keying the entire keyboard by touch using correct fingering to 90% accuracy - use keyboarding skills in other curriculum areas	- as part of correct posture: straight spine; elbows close to sides; forearms parallel to floor fingers curved, centre of body in front of keyboard; - as per computer programme - maintaining keyboarding posture and techniques outside of keyboarding activities																		
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Module Title: Keyboarding	Sequence Reference: P6 IT-B
Recommended Instructional Strategies:	Recommended Formative Assessment Strategies:
• as per software and text • keyboarding to be taught for 15 minutes during each of 34 lessons i.e. 15 of 90 minutes	Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding. • as per practice and speed tests in software

Module Title: Keyboarding	Sequence Reference: P6 IT-B
Summative Assessment:	
Assessments given at the end of a module where the data is used to generate grades. Students maintain proper posture and fingering when completing assessment contained in software.	
Special Resources: (materials, equipment & community involvement)	
- Computer system - Microsoft Works - Paws In Typing Town	
References - Teacher:	References - Student:
- Willis, Stephens & Matthew, <u>Using Technology In The Classroom</u>. Allyn & Bacon, 1996 - Giesert & Futnell, <u>Teachers, Computers & Curriculum: Using Computers in the Classroom</u>. 1999	<u>Basic Computer Skills</u>
Glossary:	
refer to text	



Module C

INFORMATION TECHNOLOGY

Module Title: Computer Applications Time allotted: 17 weeks	Sequence Reference: P6 IT-C						
	PHASE A				PHASE B		
	PS	P1	P2	P3	P4	P5	P6
	☐	☐	☐	☐	☐	☐	☒
Subgoal Emphasis: 3.1 - 3.3 Technology Productivity Tools 4.1 - 4.3 Technology Communication Tools 5.1 - 5.3 Technology Research Tools 6.1 Technology for Problem Solving	Content Focus: Applications						
Curriculum Objectives:				Content Detail:			
At the end of this module, students will: - create and manage computer generated documents - use applications to create and edit computer generated documents - format text using a word processor to produce a variety of documents - use basic desktop publishing techniques to enhance documents - use basic presentation software tools - use electronic databases - use databases to manage and explore information - solve problems using spreadsheet software - use application tools to communicate with others - use technology tools to communicate with others to solve problems or present ideas				- use of computer applications for communication and problem-solving: word processing program for writing; graphics programs for pictures; presentation tools: for groups, projects; data bases and spreadsheets to manage information and explore solutions to problems - file menu: file location - edit menu: cut, paste, copy; - edit menu - word processor: spell check, thesaurus; - edit menu - graphics: tools, crop, scanned graphics; - document layout: columns, using tables, balance, purpose, design; - font: effects, underline; indent; - personal applications: family, club newsletters - navigating presentation: slide view, forward/next, back/previous - enhancing presentations: inserting transitions and multimedia effects - presentation skills: posture, delivery skills, voice projection, eye contact - personal applications: photo album, presentation projects - using a database: list view, record view, adding records, search, new/add records - personal applications: address book, inventory of house contents, - performing simple searches; - electronic resources: encyclopedias; CD-ROM; Internet, - navigating the spreadsheet: cells, addresses; - insert: label, numbers/values; - personal applications: budget, event planning, small businesses			

Module Title: Computer Applications	Sequence Reference: P6 IT-C
Recommended Instructional Strategies:	Recommended Formative Assessment Strategies:
Computer applications provide the teacher with the opportunity to enrich the learning experience. Students must make connections with previously learned knowledge and increase their understanding of it in order to present new information for a variety of audiences. This requires the development of skills with technology applications, higher order thinking and problem solving. As students work on assignments, encourage students to exchange/share ideas and problem solve amongst them. Facilitate the sharing of ideas and collaboration on problem solving and investigation with groups of students in other schools and countries. • Show students how to use the on-line thesaurus. Remind them to use the spellcheck feature. Show them examples of a variety of layouts. Discuss their features. • Discuss the advantages of working with/manipulating pre-made or scanned graphics vs. original artwork. Reinforce paint/draw tools by demonstrating their use and the difference between each effect. Provide examples from commercial applications where possible. • In small groups, guide students in the creation of a personal database. Example: students can record books they have read or heroes. Have students add new records and view the database as individual records or as a list. Compile a list of questions for students to answer by conducting searches. Example: most books by same author; oldest book read, or number of famous women, most common profession of men in collection, etc. Help students to find other applications for databases in managing information and in problem solving. • Help groups of students develop the understanding of how a spreadsheet works by having them construct a simple calculator. • Students can use real data to construct their own spreadsheets or to display data collected from a variety of subject areas. Have students use the graphing feature to display their results. Paste the graph into a word processing or presentation document. Help students to find other applications for spreadsheets in problem solving. • Show students how to make changes to the background and to add transitions. Highlight the need to keep slides readable, to include key points only and to maintain the integrity of contents by using reliable sources. Help students to develop the use of notes to aid presentations. Coach students on their oral Presentation skills.	Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding. • Observe students participation during discussions. Students should contribute meaningfully when working in a variety of group sizes. • Students demonstrate an increasingly confident use of the applications. Observe their use of the applications as they produce a variety of documents: stories, reports, letters, invitations, posters, etc. • Students can plan presentations on paper. Check for content before students progress to making slides. • Monitor students' work on graphics. Question them on tools and effects as they plan to enhance or purposefully modify graphics. • Monitor the design of the records for the database. Ensure that the records are the same and that information is entered in a consistent manner. Check sources of information and pace at which students build database. • Have students work out their solution to the calculator problem on paper before building the spreadsheet. Encourage them to experiment and then to test their calculators to ensure that it works. Monitor each student's participation. • Students should work in a variety of views and experiment with transitions. Question students on the design of their projects. Encourage participation in peer critiquing.

Summative Assessment:

Assessments given at the end of a module where the data is used to generate grades.

- **Portfolio:**
 - Pieces of work (various documents, presentations, e-mail communications) displaying a range of abilities with tools used across an array of subject areas. These items should show the development of skills over time.
 - Students should be able to describe their progress during student-teacher conference.
- **Performance:**
 - Students demonstrate competency with application tools, multimedia and Internet resources.
 - Participation in discussions and group work.

Special Resources:

(materials, equipment & community involvement)

- Computer system in classroom and lab
- MS Works, MS Office
- Multimedia resources
- paper, crayons, markers, book covers, etc.
- CD-ROM dictionaries
- other multimedia resources
- Student Writing Centre

References - Teacher:

Teacher Resources

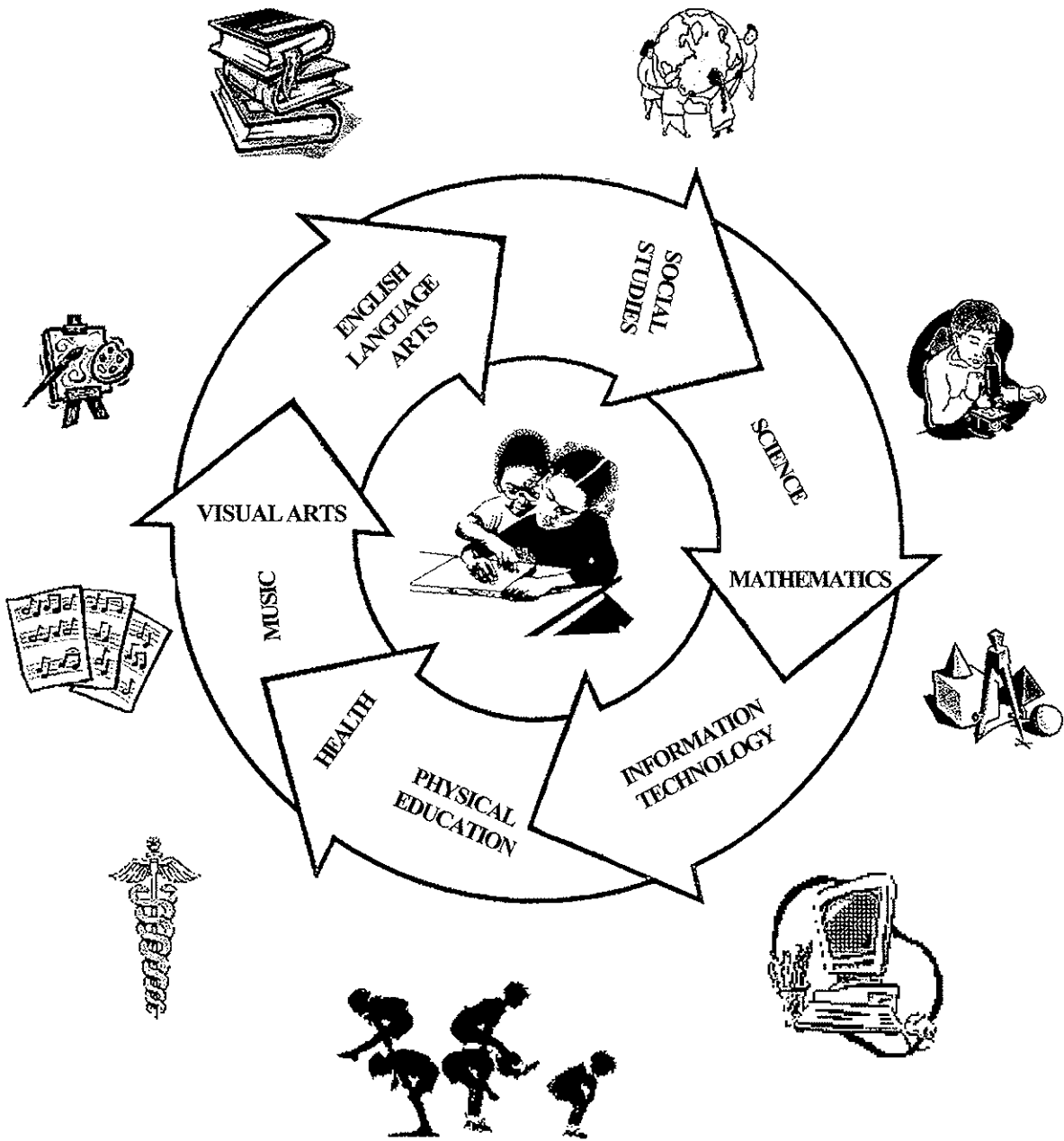
- Willis, Stephens & Matthew, Using Technology In The Classroom. Allyn & Bacon, 1996
- Shelly, Cashman, Counter, Teachers Discovering Computers: A Link to the Future. 1999
- Giesert & Futnell, Teachers, Computers & Curriculum: Using Computers in the Classroom. 1999
- Stepien, Senn & Stepien. The Internet and Problem-Based Learning. Zephyr Press 2000

References - Student:

- Basic Computer Skills Level 5

Glossary:

- refer to text



Module D

INFORMATION TECHNOLOGY

Module Title: IT in Society and Workplace Time allotted: 5 weeks	Sequence Reference: P6 IT-D						
	PHASE A				PHASE B		
	PS	P1	P2	P3	P4	P5	P6
	☐	☐	☐	☐	☐	☐	☒
Subgoal Emphasis: 1.1 - 1.2 Operation and Technology Concepts 2.1 - 2.3 Social and Ethical Issues Associates with Technology	Content Focus: IT in Society and the Workplace						
Curriculum Objectives:				Content Detail:			
At the end of this module, students will: - briefly describe history of computers - work cooperatively and collaborate with peers and others when using technology - discuss, demonstrate and promote ethical conduct and the consequences of misuse - use technology for creative expression - observe care and safety rules when operating technology - explain the importance of technology in their own lives - describe how people use technology in a variety of occupations - discuss current technology issues - identify and discuss positive and negative impact technology has on our lives				- history: early tools assisted with counting: feet, hands, rocks, pebbles, - abacus: help with calculations, use spread from China - first calculating machines: punch cards, used mostly for math, some did not use electricity, were sometimes unreliable - First modern computers': large, slow, punch cards vs. diskettes or HD, expensive, few, - First modern computers uses: counting people, scientific research, design weapons, etc - Modern computers: result of design and work of many people, small to very small, fast, perform many functions, relatively cheap, found in a variety of settings - sharing: peer to peer sharing, sharing with others, technology tutors, assisting others, task sharing, taking turns, time management - respect: privacy of others, flaming, - school rules; treatment of school equipment, - ethics: with shared files and resources; copyright, licensing, piracy, hacking, flaming, viruses, privacy of personal information, - care: avoid dust, dirt, food, drinks, careless movements, direct sunlight (disks), use clean hands; safe distance from monitor; See IT Components and Their Use - uses of technology: music, visual arts, creative writing, playing games, learn new skills, drawing & painting, listen to stories, work, with parents, others, in industry, business, education, home; service, research and entertainment applications; - discuss current issues; positive and negative impact of IT on society, productivity, hacking, sabotage; software piracy; lack of privacy, advances in science, quality of life, etc.			

Module Title: IT in Society and Work Place	Sequence Reference: P6 I -D
Recommended Instructional Strategies:	Recommended Formative Assessment Strategies:
• Have students use the Internet and other resources to research the history of computers. Have students work in groups to create an electronic presentation describing important milestones in their development. Students can take on roles of researcher, designer, graphic artist or recorder to use their strengths to contribute to the total project. Set benchmarks to help students stay on track. The group can present their report as a learning tool for other students. • Discuss the advantages of working together to achieve goals as no one person will know everything with regard to using technology: specialists in tech fields; project teams, etc. • Help students to develop a sense of ownership for school equipment by volunteering to become prefects for the computer lab. They can provide assistance to teachers of lower grades in preparation for classes: launch programs; ensuring chairs are adjusted to the correct height, etc. Make them aware that other students are looking to them as examples. • Lead students in discussions of issues regarding the appropriate use of technology. Have students research acceptable use policies of other schools and universities. • Have students discuss current topics related to inappropriate/illegal uses of technology and the implications and consequences of these actions to themselves, other users and those depending on services. • Have students research and compile a list of careers that require technological skills by visiting job placement and career-related web sites. Help students to research technology-related jobs available in Bermuda. Illustrate technology applications during school outings and field trips. Relate these activities to similar activities that students take part in that involve the use of technology. Example: During a visit to a printing company, students should be made aware that they also use desktop publishing techniques when using applications & draw/paint programs for graphic art. • Involve students in regular discussion on the advantage that technology has on their lives and the disadvantages that can arise. • Have students discuss related issues: software piracy, access to information on the Internet, copyright.	Assessments that are part of regular teaching and learning in classrooms. Teachers and students use this data to promote student learning and conceptual understanding. • Monitor students' progress and the participation of individuals from planning stage to completion. • Question individual students to determine their content knowledge. • Observe students' compliance with rules. • Participation in discussion. • Check progress on the development of list of occupations.

Module Title: IT in Society and Work Place	Sequence Reference: P6 IT-D
Summative Assessment:	
Assessments given at the end of a module where the data is used to generate grades. • Product Assessment: - Group history presentation - List of occupations • Performance Assessment: - Participation in discussions - Group participation/ teamwork - Students can be seen to behave in a positive and ethical manner	
Special Resources: (materials, equipment & community involvement)	
• employment pages, Royal Gazette: Career Profiles features, newspaper clippings, magazine articles • Computer system- classroom and lab • Copies of software licences • Internet access • field trips	
References - Teacher:	References - Student:
Teacher Resources • Willis, Stephens & Matthew, <u>Using Technology In The Classroom</u>. Allyn & Bacon, 1996 • Shelly, Cashman, Counter, <u>Teachers Discovering Computers: A Link to the Future</u>. 1999 • Giesert & Futnell, <u>Teachers, Computers & Curriculum: Using Computers in the Classroom</u>. 1999	• <u>Basic Computer Skills Level 5</u>
Glossary:	
• refer to text	

**PRIMARY ONE (P1) INFORMATION TECHNOLOGY
CURRICULUM OBJECTIVES AT A GLANCE
PACING GUIDE**

Objectives	Time/ Minutes	Date Completed	Objectives	Time/ Minutes	Date Completed
A. COMPONENTS AND THEIR USE ☐ identify the basic components of a computer system ☐ identify care of the basic components of a computer system ☐ demonstrate the correct use of the keyboard and mouse ☐ when assisted by the teacher, demonstrate the ability to start and shutdown a computer ☐ use log on name or number ☐ with assistance open and save files ☐ handle software appropriately ☐ use age appropriate software ☐ with assistance, navigate age appropriate software ☐ identify and successfully operate other technologies B. COMPUTER APPLICATIONS ☐ have observed the teacher open, create, save, print and close computer generated documents ☐ use age appropriate applications to edit computer generated documents ☐ under the guidance of the teacher, use age appropriate word processing programs ☐ under the guidance of the teacher, use colouring programs			B. COMPUTER APPLICATIONS (Cont'd) ☐ with the assistance of the teacher explore painting and drawing tools ☐ with the assistance of the teacher, use application tools to communicate with others C. SOCIETY AND WORKPLACE ☐ work cooperatively with peers and others when using technology ☐ demonstrate positive and ethical social behaviour when using technology ☐ demonstrate a willingness to use technology ☐ use technology for creative expression ☐ observe care and safety rules when operating technology ☐ explain the importance of technology in their own lives ☐ in age appropriate language, describe how they use technology ☐ use age appropriate language to identify persons who use technology		

**PRIMARY TWO (P2) INFORMATION TECHNOLOGY
CURRICULUM OBJECTIVES AT A GLANCE
PACING GUIDE**

Objectives	Time/ Minutes	Date Completed	Objectives	Time/ Minutes	Date Completed
A. COMPONENTS AND THEIR USE ☐ identify the basic components of a computer system ☐ identify care of the basic components of a computer system ☐ demonstrate the correct use of the keyboard and mouse ☐ when assisted by the teacher, demonstrate the ability to start and shutdown a computer ☐ use log on name or number ☐ with assistance open and save files ☐ handle software appropriately ☐ use age appropriate software ☐ navigate age appropriate software ☐ identify and successfully operate other technologies ☐ briefly describe the Internet using age appropriate language B. COMPUTER APPLICATIONS ☐ with the assistance of the teacher open, create, save, print and close computer generated documents ☐ use age appropriate applications to edit computer generated documents ☐ use age appropriate word processing programs under the guidance of the teacher ☐ use colouring programs ☐ with the assistance of the teacher explore simple painting and drawing tools ☐ with the assistance of the teacher, use application tools to communicate with others			C. SOCIETY AND WORKPLACE ☐ work cooperatively with peers and others when using technology ☐ demonstrate positive and ethical social behaviour when using technology ☐ demonstrate a willingness to use technology ☐ use technology for creative expression ☐ observe care and safety rules when operating technology ☐ explain the importance of technology in their own lives ☐ in age appropriate language, describe how they use technology ☐ use age appropriate language to identify persons who use technology		

**PRIMARY THREE (P3) INFORMATION TECHNOLOGY
CURRICULUM OBJECTIVES AT A GLANCE
PACING GUIDE**

Objectives	Time/ Minutes	Date Completed	Objectives	Time/ Minutes	Date Completed
A. COMPONENTS AND THEIR USE ☐ name and describe the basic components of a computer system ☐ describe and apply the appropriate care of the basic components of a computer system ☐ demonstrate the ability to start, restart and shutdown a computer ☐ use log on name or number ☐ demonstrate the correct use of the keyboard and mouse ☐ open and save files ☐ handle software appropriately ☐ use software and multimedia resources for specific purposes ☐ with assistance, navigate age appropriate software ☐ operate other technologies ☐ briefly describe the Internet using age appropriate language B. COMPUTER APPLICATIONS ☐ open, create, save, print and close computer generated documents ☐ use age appropriate applications to edit computer generated documents ☐ use age appropriate word processing programs to enter text ☐ use simple desktop publishing techniques			B. COMPUTER APPLICATIONS (Cont'd) ☐ use simple painting and drawing tools ☐ identify/ select appropriate tool for task ☐ with the assistance of the teacher, use application tools to communicate with others C. SOCIETY AND WORKPLACE ☐ in age appropriate language, briefly describe history of computers ☐ work cooperatively with peers and others when using technology ☐ demonstrate positive and ethical social behaviour when using technology ☐ demonstrate a willingness to use technology ☐ use technology for creative expression ☐ observe care and safety rules when operating technology ☐ in age appropriate language, describe how they use technology ☐ use age appropriate language to identify persons who use technology		

**PRIMARY FOUR (P4) INFORMATION TECHNOLOGY
CURRICULUM OBJECTIVES AT A GLANCE
PACING GUIDE**

Objectives	Time/ Minutes	Date Completed	Objectives	Time/ Minutes	Date Completed
A. COMPONENTS AND THEIR USE ☐ briefly describe the use of the basic components of a computer system ☐ briefly describe the care of the basic components of a computer system ☐ demonstrate the ability to start, restart and shutdown a computer ☐ demonstrate the correct use of special keys of the keyboard ☐ open and save files ☐ handle and use software appropriately ☐ discriminate between software tools and multimedia resources for specific purposes ☐ navigate age appropriate software ☐ operate other technologies ☐ communicate with others using e-mail ☐ identify uses of the Internet using age appropriate language ☐ navigate a teacher-selected website B. KEYBOARDING ☐ key the entire keyboard by touch using correct fingering ☐ demonstrate the proper use of shift keys ☐ demonstrate the correct posture when keyboarding ☐ use keyboard skills in other curriculum areas ☐ keyboard by touch using correct fingering with 80% accuracy			C. COMPUTER APPLICATIONS ☐ manage computer generated documents ☐ use age appropriate applications to edit computer generated documents ☐ format text using a word processor ☐ use basic desktop publishing techniques ☐ use graphics software tools ☐ uses basic presentation software tools ☐ identify/ select appropriate tool for task ☐ use application tools to communicate with others ☐ use technology tools to collaborate with others to solve problems or present ideas D. SOCIETY AND WORKPLACE ☐ briefly describe history of computers ☐ work cooperatively with peers and others when using technology ☐ discuss and demonstrate positive and ethical social behaviour when using technology ☐ use technology for creative expression ☐ observe care and safety rules when operating technology ☐ explain the importance of technology to their own lives ☐ identify persons who require technology for their jobs ☐ discuss current technology issues		

**PRIMARY FIVE (P5) INFORMATION TECHNOLOGY
CURRICULUM OBJECTIVES AT A GLANCE
PACING GUIDE**

Objectives	Time/ Minutes	Date Completed	Objectives	Time/ Minutes	Date Completed
A. COMPONENTS AND THEIR USE ☐ briefly describe the use of the basic components of a computer system ☐ briefly describe the care of the basic components of a computer system ☐ demonstrate the correct use of special keys of the keyboard ☐ manage computer files ☐ handle and use software appropriately ☐ select software tools and multimedia resources for specific purposes ☐ navigate age appropriate software ☐ operate other technologies ☐ communicate with others using e-mail ☐ briefly describe uses of the Internet, using age appropriate language ☐ access a teacher-selected website for research B. KEYBOARDING ☐ demonstrate the correct posture when keyboarding ☐ use keyboard skills in other curriculum areas ☐ increase speed and accuracy keying the entire keyboard by touch using correct fingering with 85% accuracy			C. COMPUTER APPLICATIONS ☐ create manage computer generated documents ☐ use age appropriate applications to create and edit computer generated documents ☐ format text using a word processor to produce a variety of documents ☐ use basic desktop publishing techniques ☐ use graphics software tools ☐ use basic presentation software tools ☐ use electronic databases ☐ use databases to manage and explore information ☐ solve problems using spreadsheet software ☐ use technology tools to collaborate with others to solve problems or present ideas ☐ use application tools to communicate with others D. SOCIETY AND WORKPLACE ☐ briefly describe history of computers ☐ work cooperatively and collaborate with peers and others when using technology ☐ discuss, demonstrate and promote ethical conduct and the consequences of misuse ☐ use technology for creative expression ☐ observe care and safety rules when operating technology ☐ explain the importance of technology to their own lives ☐ describe how people use technology in a variety of occupations ☐ discuss current technology issues ☐ identify and discuss positive and negative impact technology has on our lives		

**PRIMARY SIX (P6) INFORMATION TECHNOLOGY
CURRICULUM OBJECTIVES AT A GLANCE
PACING GUIDE**

Objectives	Time/ Minutes	Date Completed	Objectives	Time/ Minutes	Date Completed
A. COMPONENTS AND THEIR USE ☐ briefly describe the use of the basic components of a computer system ☐ briefly describe the care of the basic components of a computer system ☐ demonstrate the correct use of special keys managing computer files ☐ handle and use software appropriately ☐ discriminate amongst software tools and multimedia as appropriate resources for specific purposes ☐ operate other technologies ☐ communicate with others using e-mail ☐ discuss the advantages and disadvantages of the internet, using age appropriate language ☐ access and navigate teacher-selected web sites for research B. KEYBOARDING ☐ demonstrate the correct posture when keyboarding ☐ increase speed and accuracy keying the entire keyboard by touch using correct fingering to 90% accuracy ☐ use keyboarding skills in other curriculum areas			C. COMPUTER APPLICATIONS ☐ create and manage computer generated documents ☐ use applications to create and edit computer generated documents ☐ format text using a word processor to produce a variety of documents ☐ use basic desktop publishing techniques to enhance documents ☐ use basic presentation software tools ☐ use electronic databases ☐ use databases to manage and explore information ☐ solve problems using spreadsheet software ☐ use application tools to communicate with others ☐ use technology tools to communicate with others to solve problems or present ideas D. SOCIETY AND WORKPLACE ☐ briefly describe history of computers ☐ work cooperatively and collaborate with peers and others when using technology ☐ discuss, demonstrate and promote ethical conduct and the consequences of misuse ☐ use technology for creative expression ☐ observe care and safety rules when operating technology ☐ explain the importance of technology in their own lives ☐ describe how people use technology in a variety of occupations ☐ discuss current technology issues ☐ identify and discuss positive and negative impact technology has on our lives		

ASSESSMENT

SUPPORTS LEARNING

IN

BERMUDA SCHOOLS

CURRICULUM, INSTRUCTION & EVALUATION
Department of Education

BERMUDA

BERMUDA ASSESSMENT PLAN

The Ministry of Education provides schools with several types of tests to monitor students' progress towards becoming life-long learners and good citizens. Different measures are used to collect a full range of assessment evidence about students' capabilities to analyze information, to evaluate charts and graphs, and to devise solutions to problems.

People who can communicate well and have the ability to interpret complex problems will be highly valued in the future workplace. Testing results are one of the ways that the Ministry informs young learners and their parents about their progress towards developing the capabilities that will enable them to succeed.

Annual Assessment Schedule

Each June students write *TerraNova* Assessments for Primary School students in year 3 through 6. These measures include a full range of achievement tests covering Reading, Language and Mathematics. School principals evaluate the results as part of their School Improvement Plans looking for year-level and school wide weakness to guide curriculum plans for the year and identify areas of focus for staff development.

In June the Ministry requires schools to administer the Bermuda Educational Assessment Programme for P3 and P5 as a performance indicator for Mathematics and English Language Arts achievement. These tests are all developed in Bermuda by curriculum specialists with the assistance of classroom teachers. In Language Arts, students write an essay and take a spelling test. In Mathematics, students solve problems and answer sets of questions that ask them to calculate and apply mathematical concepts.

OUR BELIEFS ABOUT ASSESSMENT

Assessment strategies are the plans that teachers use to collect evidence about students' achievement in school. When teachers have a good understanding of how far students have come, then teachers are in a better position to guide them, as they become more able learners.

When teachers collect assessment information they may have different purposes in mind, but learning is the primary focus. There are seven basic assessment guidelines for educators:

1. The primary purpose of assessment is to improve student learning.
2. Assessment practices and policies are fair to all students.
3. Assessment supports learning even when it is designed for other purposes, such as accountability.
4. Teachers support learning by working together to improve assessment.
5. Community representatives participate in developing assessments.
6. There is a schedule to communicate clear assessment information.
7. Educators review progress toward assessment goals along with community people.

DEFINITIONS

Educators use the term, “assessment” to describe any plans and activities they use to monitor student achievement. Measuring, evaluating, and reporting are three components of assessment.

Assessment

For our system we define assessment to mean gathering information systematically to determine:

- What students know,
- What they are able to do,
- and what goals they are working toward.

Evaluation

We define evaluation to mean judging information systematically to determine student progress toward intended curriculum objectives. When teachers evaluate, they interpret assessment evidence compared to the intended curriculum and to the taught curriculum, so they may judge student progress. Evaluation helps students improve their learning when educators show learners their strengths and direct them in ways that develop their competencies.

Reporting

We define reporting to mean communicating information on student progress, especially to parents. In order to support student learning, parents need regular assessment updates on what their children have learned, what they can do, and what they are working toward. This communication may be verbal in personal interviews or in telephone conversations, but some reports must be in writing. Parents can be effective learning guides when educators give them clear information about student progress.

EXEMPLAR SCORING GUIDE*

Primary Levels 3-6

(0 - 4 Scale)

		EQUIVALENT	
Level	Definition	Letter	% mark
4	A very good performance • focuses on the purpose of the task • meets or exceeds all the requirements of the task • organizes content and ideas in a logical way • presents information clearly • includes appropriate detail to support ideas or conclusions • demonstrates creativity, originality and/or initiative	A (VG)	80-100
3	A good performance • focuses on purpose of the task • meets all the requirements of the task • organizes content and ideas in a logical way • presents information clearly • includes some detail to support ideas or conclusions	B (G)	70-79
2	A satisfactory performance • has some awareness of the purpose of the task • meets most of the requirements of the task • organizes content and ideas in a logical way • presents information in an understandable way • may not include significant details to support ideas or conclusions	C (S)	60-69
1 (R)	A fair performance • does not fit the purpose of the task • does not meet the requirements of the task • presents information in an unorganized or confused way • does not include details to support ideas or conclusions • Remediation required	D (NI)	50-59
0 (R)	An unscorable performance • does not demonstrate the required knowledge, skills or capabilities • is not understandable, is incomplete or 'defiant' (e.g. "I won't do this"). • Extensive remediation is required.	F (NI)	Below 50

'R' – Extensive Remediation required: student may need to repeat or restart work, or teaching method may need to be altered.

An '0' student may be one who refuses to work or needs specialist help.

* Adapted from British Columbia

This new perspective on assessment implies a **shift** in our practice

Decreasing emphasis on ----->Increasing emphasis on	
<i>Delivering curriculum</i>	<i>Enhancing learning</i>
Summative assessment which discounts further learning	Formative assessment which supports further learning
The assumption that learning can be represented or demonstrated in one way	The assumption that learning can and should be represented in a variety of ways
Teachers directing all curriculum planning and assessment	Learners participating in assessing their own progress and learning
Quantitative assessment and reporting (e.g., letter grades, test scores)	Qualitative assessment and reporting (e.g., conferences, systematic observations, conferences)
Comparing learners to each other and/or in relation to a pre-determined norm or standard	Learner's individual progress is based on pre-determined and explicit criteria

ASSESSMENT IN THE CLASSROOM

Assessment drives instruction. We must devise procedures and instruments which are “intelligence-fair” and which allow us to look directly at the kinds of learning in which we are interested.

- Howard Gardner

A. Developing and Choosing Appropriate Assessment Methods

Valid assessments provide students with achievement information that enables them to monitor their own progress toward learning objectives. Experienced educators develop their assessment plans at the same time that they plan how to teach. This coordinated planning helps ensure that the assessment methods chosen match both the instruction and the purpose.

- **Assessment methods selected should connect directly to students’ knowledge, skills, behaviour, and attitudes.**
- **Assessments should be clearly related to the goals and objectives of instruction, and be compatible with instructional strategies.**
- **Teachers consider possible consequences when they choose or develop an assessment.**
- **Differentiating instruction means that teachers use more than one assessment method to indicate student progress.**
- **Assessment methods match students’ heritage, their learning style, and learning experiences.**
- **Assessments chosen avoid language and content that express bias.**
- **When teachers borrow a method from some other context or location they have evidence that the assessment will be valid for Bermudian students.**

B. Collecting Assessment Information

Before assessment information is collected, students need sufficient opportunity to experience the activities designed for the curriculum objectives. They also need to be informed of how they will be expected to demonstrate the knowledge, skills, behaviours, and attitudes to be assessed.

- **Students should be told why teachers are assessing and how teachers and the Ministry will use that information.**
- **Assessment conditions should suit both the purpose and the style.**
- **When using observations, checklists, or rating scales only a few characteristics should be assessed at one time. Each characteristic should be clearly defined.**
- **Directions given to students should be clear, complete, and phrased correctly for their age and grade level.**
- **There should be no penalty for guessing.**
- **While collecting assessment information, teacher-student interactions should be consistent.**
- **Keep written records of all unanticipated assessment circumstances.**
- **Decisions about alternative practices for special needs students should be guided by a written policy.**

*“If tests determine what teachers actually teach
and what students will study for
-- and they do --
then test those capacities and habits we think are essential
and test them in context”*

-- Grant Wiggins

C. Evaluating and Scoring Student Performance

Procedures to evaluate and score student performance should match the assessment method and educators should monitor these procedures to ensure that they are applied consistently. The best way to ensure students will feel that they have been treated fairly and consistently is to integrate assessment planning with instructional strategies. This plan will detail procedures for how the evidence will be scored so that students are aware of the contribution that each portion of their work will make towards a final grade.

- **Scoring procedures should be developed before the assessment method is used.**
- **Students should be told about how the scoring will proceed to allow them to prepare for the assessment.**
- **Relevant factors are included in scoring.**
- **Students need to be able to understand any comments included as feedback.**
- **Scoring procedures should be changed when faults are detected in the initial system.**
- **A written appeal process should be explained to students at the start of each year.**

*"I want to be evaluated on what
I can do,
not on what someone else
can do better"*

-- Middle School Student

D. Summarizing and Interpreting Results

Summarizing and interpreting are the procedures used to combine assessment results into grades that will appear on report cards. This includes comments about performance as well as letter or number grades. Any procedures used should accurately represent the student's performance and be connected to the planned instructional objectives.

- **A written policy guides teachers at each school in their plans to summarize and interpret results.**
- **Explain to parents and students the procedures that teachers will use to generate and interpret grades.**
- **Describe the process used to derive summary comments and grades.**
- **Different results should be combined carefully.**
- **A broad sample of learning outcomes requires more than one assessment.**
- **Combine assessment results according to their weight of the taught curriculum.**
- **Describe and justify the basis for each interpretation.**
- **Differentiate interpretations according to the student's background and learning experiences.**
- **Create accurate records and store assessment information in a secure place.**
- **Consider how an assessment method might limit the way you interpret the work a student has achieved.**

*“Whenever people are classified on the basis of cutoff scores
misclassifications are bound to occur.
The solution is --to avoid making decisions
about anyone's future solely on the basis of
one imperfect instrument”*

-- Bernard Gifford

E. Reporting Assessment Findings

Clarity and accuracy are necessary for quality assessment reports, but educators who write these documents should also think how the reader will use the information. Consider the audience for the assessment report, so that these people can use your report to guide their interpretations of student learning. Since the primary purpose of assessment is to improve student achievement, the primary audience for the report is the student. Students, and their parents interpret the information in their report to make decisions about themselves, their capabilities, their achievements, and their potential achievements.

- **Write a school assessment policy that guides reporting.**
- **Describe instructional objectives used as standards for reports, written and oral.**
- **Describe strengths and weaknesses completely in reports.**
- **Provide conferences for parents.**
- **Define and describe appeal procedures to students and parents each year.**
- **Ensure that appropriate people have access to assessment information.**
- **Ensure that reports are secure when transferred.**

*“The key question is -
What information provides the
most accurate depiction of students’
learning at this time?”
-- Tom Guskey*

F. Promotion and Retention

Children enter school with other learners approximately their own age. They are expected to make reasonable learning progress and advance along with their peers. In the first few levels of primary school students should not repeat a year, but as they get into the higher grades there may be instances where students are asked to repeat a grade or course. The principal makes these decisions after consulting with teachers, counsellors, and the parents.

Whenever students are retained, every effort is made to differentiate instructional strategies to provide learners with opportunities they need to advance.

Some factors considered when students might be retained.

- Repeating a grade is no guarantee that students will be more successful with the same material.
- Students' attitude to school may become more negative if they are retained.
- Retained students may develop social and personal problems.
- Students who are retained are less likely to complete school.

There is always a concern that students need to be accountable for their achievements, or lack of achievements. When weighing these concerns it is worthwhile to consider how far the student's responsibility extends. If the learner has not had appropriate opportunities that enable learning to occur, then it would not be fair to hold the child fully accountable for the outcome. In addition to learning opportunities, it is also worthwhile to consider assessment opportunities. Is it possible that an alternate assessment strategy may have permitted the student to show what they really know?

*"School is a complex experience;
by breaking apart
all of the ways we
learn, rehearse, and assess
we can uncover how to do
a better job."
-- Eric Jensen*

Assessment Activity	Description
Records over time: • Journals • Diaries • Learning Logs	• Recordings that reflect students' perceptions of their progress, difficulties, understanding and feelings
Computer Assisted Learning	• Using carefully selected software to lead students from one level of difficulty to another, building on what they know and as they are tested.
Demonstrations • Live • Video • Multimedia	• Opportunities for students to display knowledge, skills and attitudes
Discussions • Small or large group • Panel	• Oral representations
Conversations and Conferences • Teacher/Student • Student/other person	• Verbal exchanges to uncover/clarify what a student has learned or understands that might not have been demonstrated through other means of assessment.
Pictorial Displays • Posters • Photographs • Collages, picture collections, scrap-books	• Visual presentations
Laboratory • Application • Laboratory Projects • Experimental	• Hands-on experiences that allow students to experiment, replicate, produce, and/or create.

Use the table below to plan your assessment programme for your subject. Under the column Curriculum objective, decide which objectives will be tested and then decide how best to assess each of these objectives. At the end of this exercise you should be able to group the various objectives under the assessment types.

CURRICULUM OBJECTIVE NO./NAME	TYPE OF ASSESSMENT				
	M/C TEST	SHORT ANSWER	ESSAY	PRACTICAL TEST	PROJECT/ PRESENTATION
TOTAL					

Self/Peer Checklist for Students

HUMAN AND SOCIAL DEVELOPMENT STUDENT PROFILE

PROFILE OF: _____

COMPILED BY: _____

DATE: _____

1. Never	2. Seldom	3. Occasionally	4. Usually	5. Frequently	6. Always	1	2	3	4	5	6
1. I am able to form an opinion about what I am asked to consider.											
2. I am able to express my opinion about what I am asked to consider.											
3. I can interpret and appreciate what I know in different ways.											
4. I want to learn more about things and issues that I don't know.											
5. I accept and appreciate other people's ideas.											
6. I am able to make connections between ideas and things that contribute to larger issues.											
7. I am able to see my personal strengths and work toward increasing them.											
8. I am able to see my personal weaknesses and work toward decreasing them.											
9. I am able to evaluate objectively and accurately.											
10. I am able to take an unpopular stand without fear of ridicule by my peers.											
11. I am able to balance the demands of my life and school without feeling overwhelmed.											
12. I am able to identify and understand other students' situations.											
13. I am able to actively support others.											
14. I am able to accept and appreciate other students' values, expression and capabilities.											
15. I am able to function as a contributing member of a working group.											
16. I am able to make and maintain friendships without difficulty.											
17. I am able to take responsibility for my actions.											
18. I am able to see the consequences of my actions.											
19. I am able to approach problems calmly and realistically.											
20. I am able to handle conflicts in a mature and responsible manner.											
21. I am able to consult with others when I need help or support.											
22. I am able to function effectively as a member of a democratic society.											
23. I am able to see how my actions affect our environment and our world.											
24. I am able to see how the actions of others affect our environment and our world.											
25. I am able to apply my knowledge and understandings to my life away from school.											
26. I am curious about and willing to use new technologies when searching for information.											
27. I am able to consider and weigh the implications of potential change.											
28. I am flexible and able to adapt to change.											
29. I am an open-minded listener.											
30. I am a good citizen.											

PLANNING FOR INTEGRATED CURRICULUM IN THE PRIMARY SCHOOLS

When you walk through the Botanical Gardens, you don't hear kiskadees for ten minutes, then the wind rustling for five minutes, and then smell the flowers for three minutes. All of this impact on you at once and you make the experience into a meaningful whole.

"Young people are interested in the entire world around them - it doesn't make sense to them to say, 'Mathematics', 'Science' or 'Social Studies'. When instruction jumps from one discipline to another every 45 minutes, learning is fragmented unnecessarily."

*By Susan Krog,
Professor of Education
Western Washington University*

Where Are We Now?

If we consider a continuum from parallel connections across each discipline to a blending of all subject areas, teachers may be at different stages of integrating curriculum.

Simplest Stage: Parallel teachers realign content so that related topics are taught concurrently.

More Ambitious Stage: Teachers begin to link subjects by scrutinizing what they teach, reinforcing overlapping concepts and avoiding needless repetition.

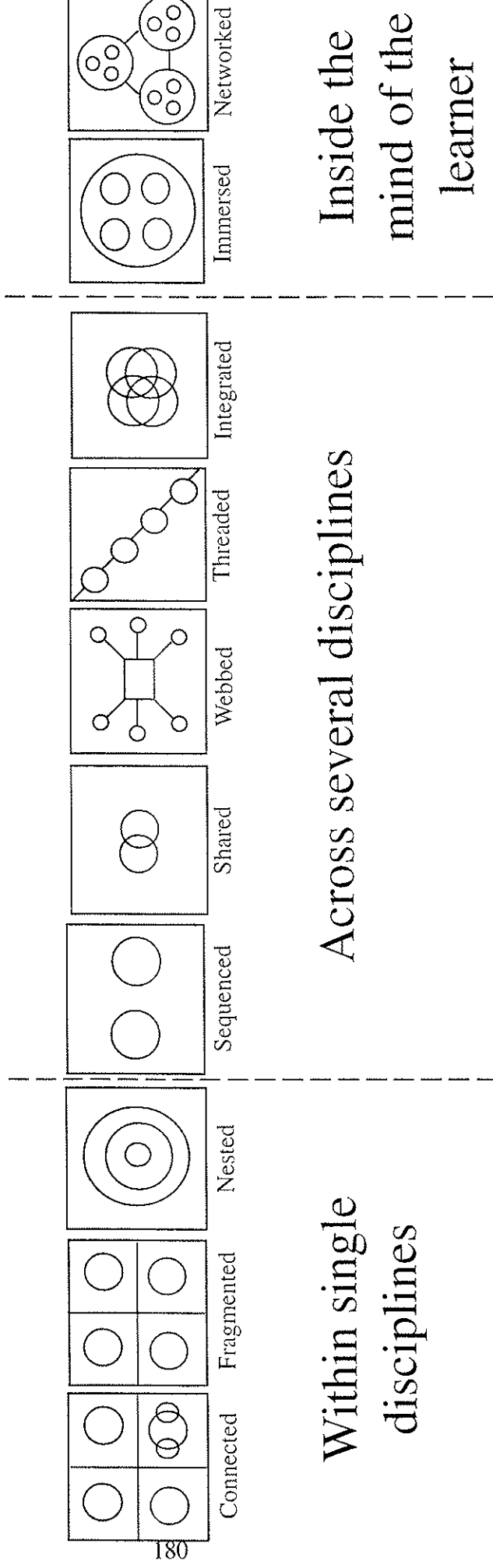
Most Ambitious Stage: Teachers create interdisciplinary modules that focus on a theme or project.

The process of collaboration at the building level will strengthen integrated curriculum and give a vital tool for professional growth of teachers. Appropriate and meaningful staff development; perusal of professional literature, and/or university training on approaches to integrating curriculum is vital to any significant change in education practice. Teachers should find ways to naturally integrate subjects and develop meaningful instruction.

Design Options (see next page)

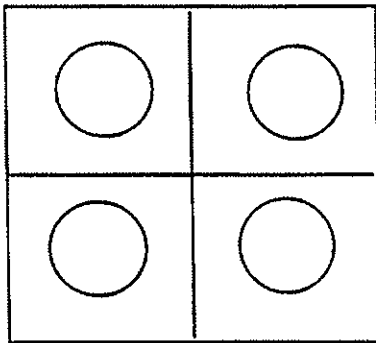
Techniques for designing an integrated curriculum include mapping the curriculum and planning an integrated module. To design an integrated curriculum, teachers need to know what is taught in other subject areas and at other grade levels - information that is traditionally not shared.

How to Integrate the Curriculum



Design options for curriculum might include:

Disciplined-based

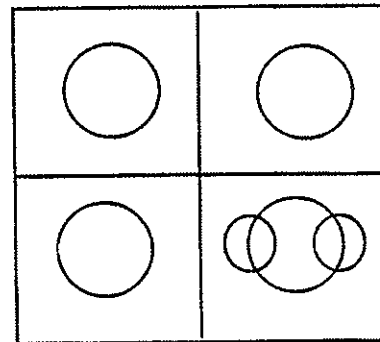


Description

The traditional model of separate and distinct disciplines which fragments the subject areas.

Example

Teacher applies this view in mathematics, science and social studies, etc.



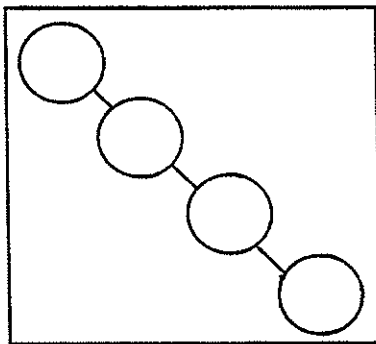
Description

Within each subject area, course content is connected topic to topic, concept to concept, one year's work to the next and relates idea(s) explicitly.

Example

Teacher relates the concept of fractions to decimals, which in turn relates to money, grades, etc.

Parallel Disciplines

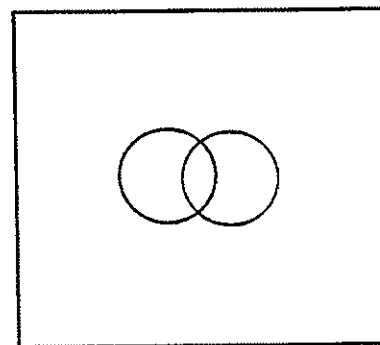


Description

The metacurricular approach threads thinking skills, multiple technology and study skills through various disciplines.

Example

Teaching staff targets prediction in reading, mathematics and science experiments while teaching social studies the teacher targets forecasting current events and thus threads the skill (prediction) across all disciplines.



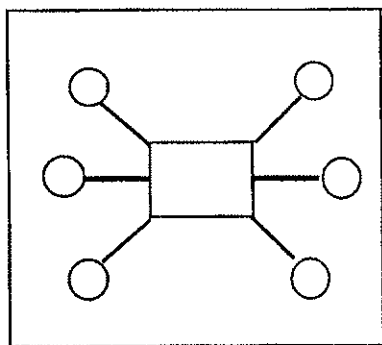
Description

Shared planning and teaching take place in two disciplines in which over-lapping concepts or ideas emerge as organizing elements.

Example

Science and mathematics teachers use data collection, charting and graphing as shared concepts that can be team-taught.

Multidisciplinary



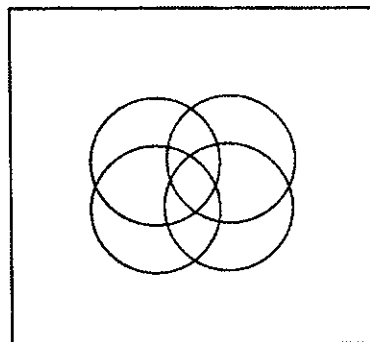
Description

The fertile theme is webbed to curriculum contents and disciplines; use the theme to sift out appropriate concepts, topics and ideas.

Example

Teacher presents a simple topical theme, such as the circus and webs it into the subject areas. A conceptual theme, such as conflict, can be for more depth in the theme approach.

Interdisciplinary



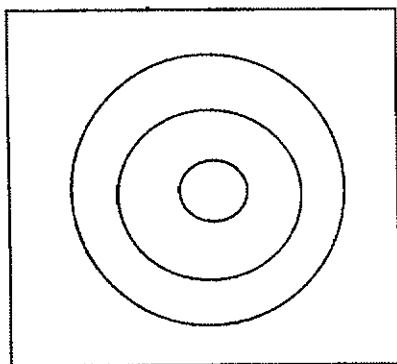
Description

This interdisciplinary approach matches subjects for overlaps in topics and concepts with some team teaching in an authentic integrated model.

Example

In science, music, visual arts and health education, teachers look for patterning models and approach content through these patterns.

Disciplined-based



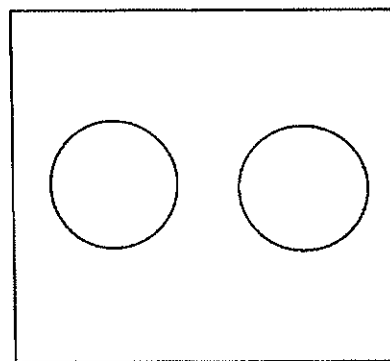
Description

Within each subject area, the teacher targets multiple skills: a social skill, a thinking skill and a concept-specific skill.

Example

Teacher designs the unit on photosynthesis to simultaneously target consensus seeking (social skill), sequencing (thinking skill) and plant life cycle (science skill).

Parallel-based



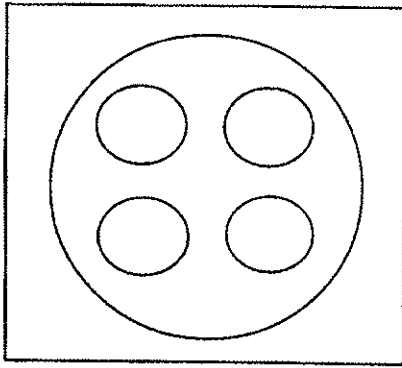
Description

Topics or units of study are rearranged and sequenced to coincide with one another. Similar ideas are taught in concert while remaining separate subjects.

Example

In English language arts the teacher will teach an historical novel depicting a particular period while in social studies the teacher could cover the same period.

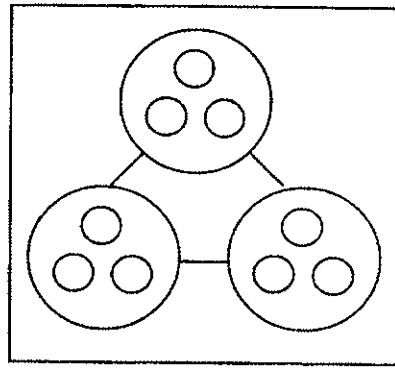
Immersed



Description

The disciplines become part of the learner's lens of expertise: the learner filters all content through this lens and becomes immersed in his or her own experience.

Networked



Description

Learner filters all learning through the expert's eye and makes internal connections that lead to external networks of experts in related fields.

Choosing a Theme

In the initial development of primary schools, four disciplines have been identified as core subjects:

- English Language
- Mathematics
- Science
- Social Studies

Year level teachers, along with teachers of other discipline areas should utilize related materials located in their professional library, modifying these as appropriate to their students' needs and interests.

It is important that primary school teachers keep abreast of current research and trends on integrating curriculum. Teachers are encouraged to take part in related staff development workshops, read professional literature and/or take university courses.

Teachers should:

- take inventory of what is already being done - writing across the curriculum, etc.
- design a curriculum map by listing the content of all subjects and then identify a theme or umbrella
- design an integrated module and develop related lesson plans
- decide on the length of time for completion and an appropriate title
- discover student interest - ask them what they want to know!
- decide whether the theme has substance and application to the real world
- display student work
- celebrate success!

PROFESSIONAL ASSOCIATION

INFORMATION TECHNOLOGY

Name: International Technology Education Association

Address: 1914 Association Drive
Suite 201
Reston, VA 20191-1539
U.S.A.

Telephone: (703) 860-2100

Fax: (703) 860-0353

e-mail: itea@iris.org

International Technology Education Association Conference Dates:

2001	March 22-24	Atlanta, GA
2002	March 14-16	Columbus, OH
2003	March 13-15	Nashville TN
2004	March 18-20	Albuquerque, NM

CURRICULUM ABBREVIATIONS

School Level Abbreviations

Preschool	PS
Primary School	P1-P6
Middle School	M1-M3
Senior School	S1-S4

Subject Area Abbreviations

Business Studies	BS
Dance	DN
Design & Technology	DT
English Language Arts	EL
Family Studies	FM
Foreign Languages	FL
Health Education	HE
Information Technology	IT
Mathematics	MT
Music	MU
Physical Education	PE
Science	SC
Social Studies	SS
Theatre	TH
Visual Arts	VR

Subject Code

e.g. PreSchool English Language Arts
PS EL-B

Year Level	Subject Area	Module Sequence
(PS-P6) representing PreSchool to Primary Six	abbreviated subject area	(A-G) representing sequence of module at any level
PS	EL	B
PreSchool	English Language Arts	(2 nd module in the sequence of 7 modules)

Curriculum Framework & Course Abbreviations

Philosophy	PHL
Goals & Sub Goals	GLS
Performance Indicators	PI
Scope & Sequence	SAS
References	REF
Course Overview	OVW
Correlation Matrix	MTX
Modules	MDL
Teacher Resources	TRS
Student Resources	SRS
Exemplar Scoring Guide	SCO
Rubrics	RUB
Objectives at a Glance	OBJ
Infusing Across the Curriculum	INF
Glossary	GRY
Health and Safety	HAS
Professional Association Directory	PAD
Curriculum Abbreviations	ABR
Appendix	APX

Programme Abbreviations

Advisory Programme	ADV
Career Education Programme	CED
Functional Skills Programme	FUN
Guidance and Counselling Programme	GUI
Library Information Programme	LIB



**Ministry of Education
P.O. Box HM 1185
Hamilton HM EX
Bermuda
September 2001**