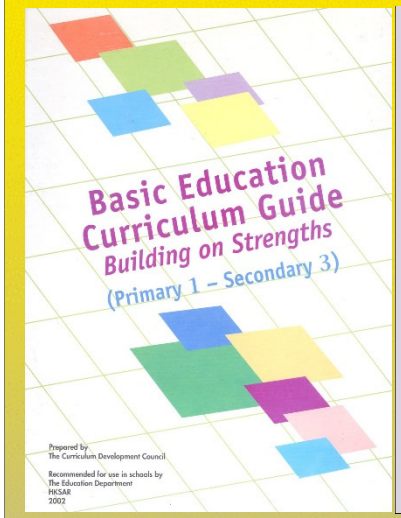
Curriculum Management, Planning and Leadership in Home Economics / Technology and Living (Refreshed)

Technology Education Section, CDI

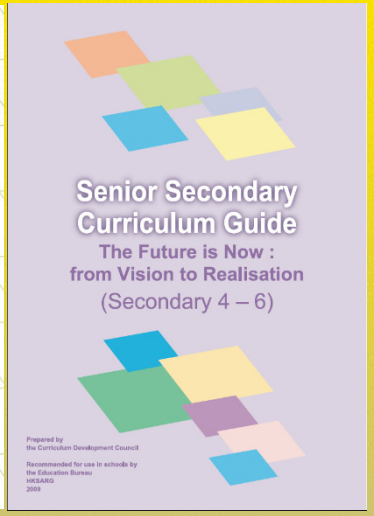
15 June 2017

Curriculum Documents

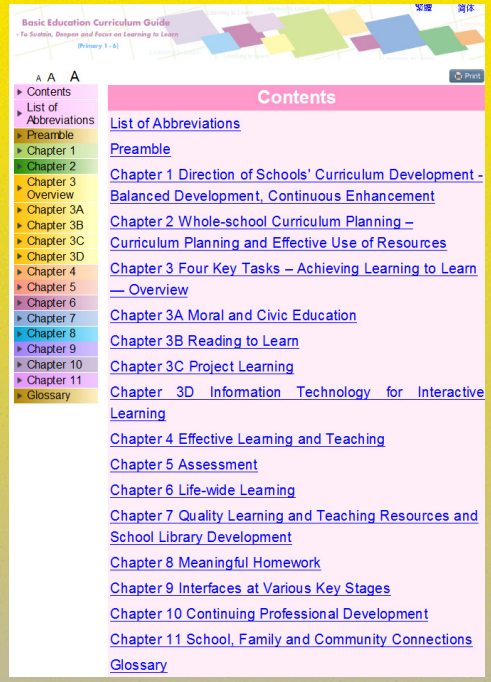
Basic Education Curriculum Guide (P1 – S3) (2002)



Senior Secondary Curriculum Guide (2009)



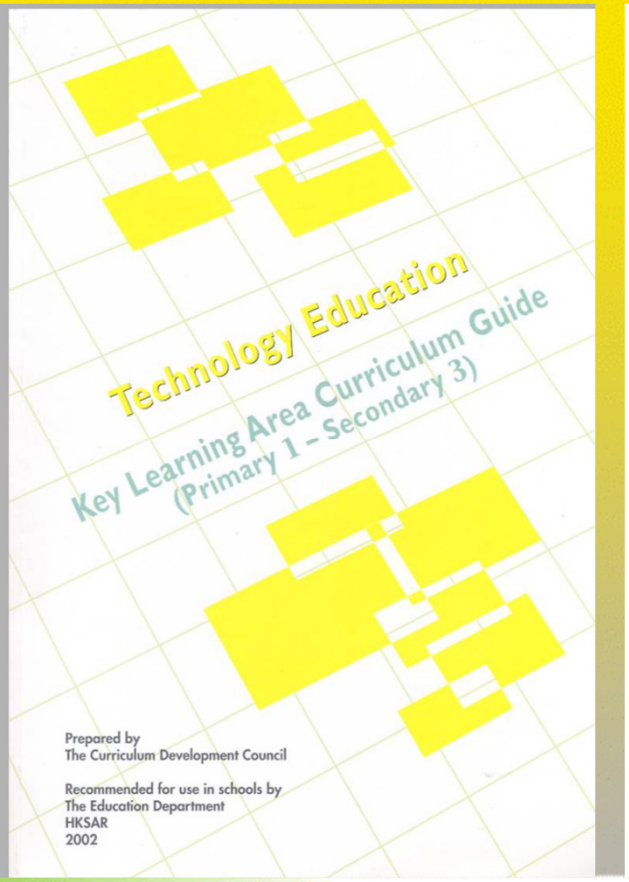
Basic Education Curriculum Guide (P1 – P6) (2014)

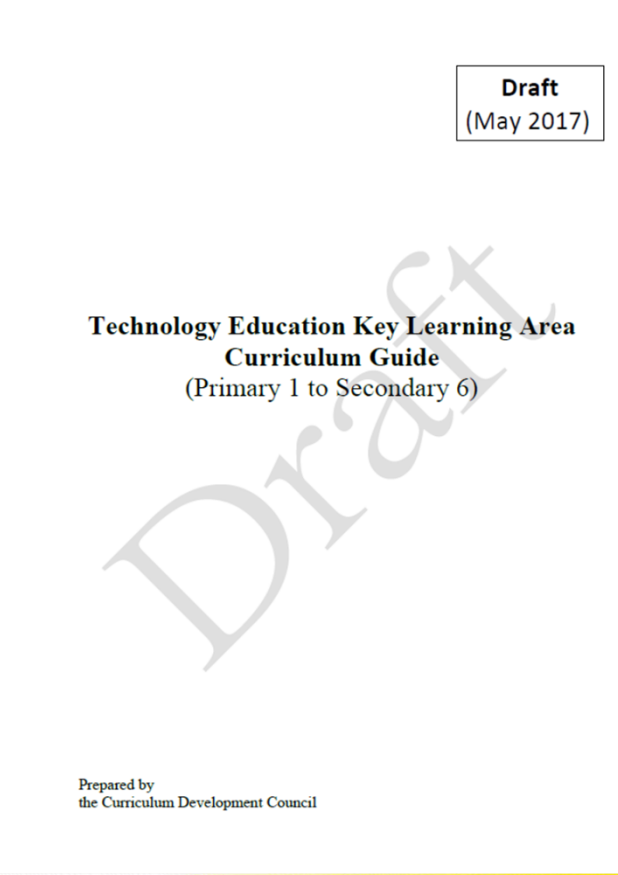


Secondary Education Curriculum Guide (2017)

Curriculum Documents

Technology Education Key Learning Area (TEKLA) Curriculum Guide





Technology Education Key Learning Area (TEKLA)

What is Technology?

TEKLA	Home Economics / Technology and Living
■ Technology is the purposeful application of knowledge, skills and values & attitudes in using resources to create products or systems to meet human needs and wants.	✓ Resources ✓ Products ✓ Systems ✓ Human needs and wants
■ Technology influences and is influenced by the culture of people. It is part of our daily life and has impact on the individual, family, society and the environment.	✓ Culture ✓ Daily life ✓ Individual ✓ Family ✓ Society ✓ Environment

What is Technology Education?

TEKLA	Home Economics / Technology and Living
■ Technology Education is the entitlement of EVERY student	✓ Learning experiences ✓ Time allocated
■ Technology Education is the learning of how human beings solve their daily problems and how to replicate and how the process could be replicated and transferred to solve new problems that arise from time to time	✓ Daily problems ✓ New problems ✓ Replicate and transfer

Curriculum Aims of Technology Education

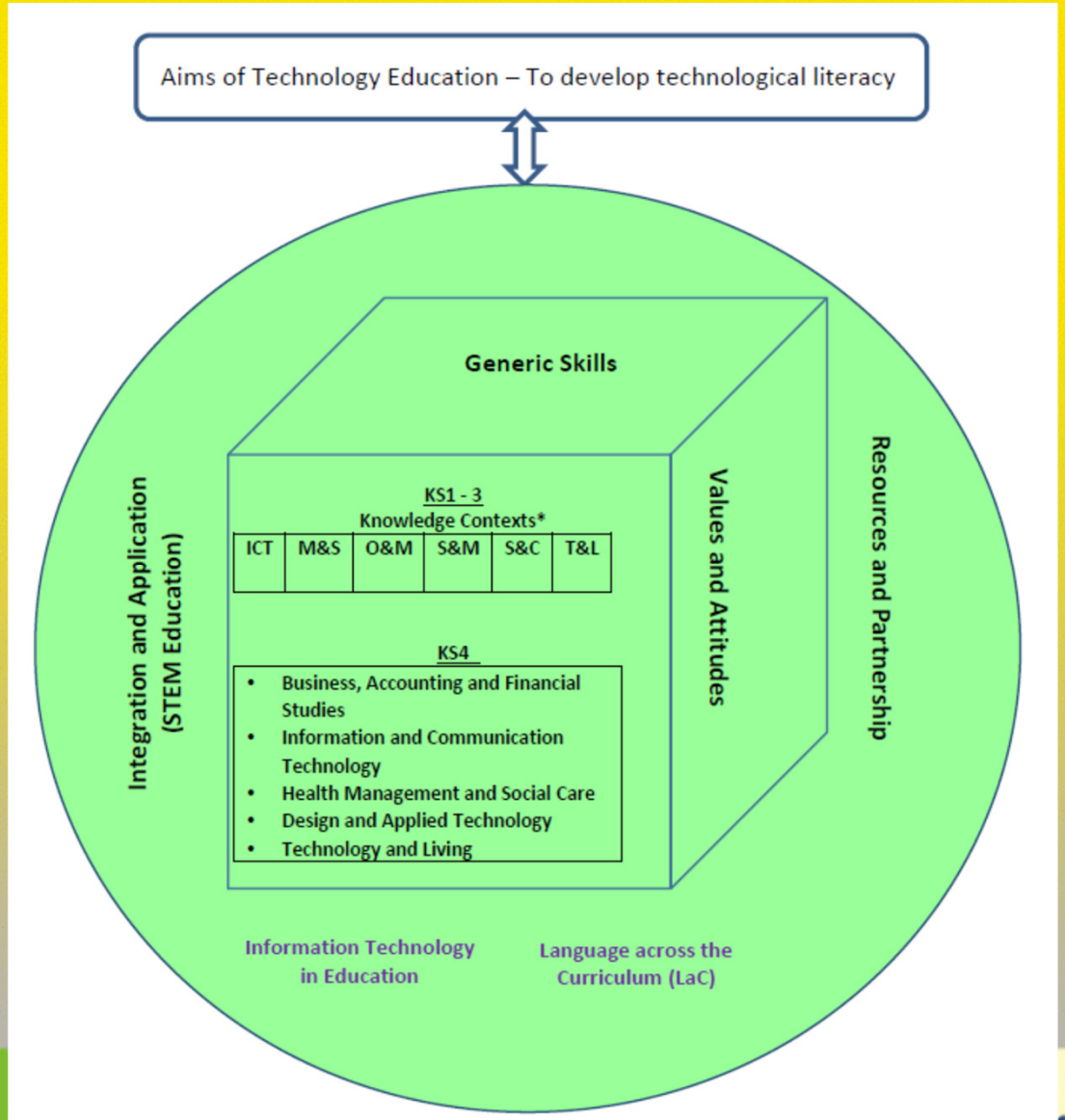
Technological Literacy

- **Technological Understanding**
  - Knowledge Contexts in Technology
- **Technological Capability**
  - Process in Technology
- **Technological Awareness**
  - Impact of Technology

Central Curriculum of TE

- **Knowledge Contexts in technology**
  - understand the interdisciplinary nature of technological activities; the concepts, knowledge and processes of different technologies
- **Process in technology**
  - to identify needs, problems and opportunities; communicate and evaluate solutions; and make informed decisions
- **Impact in technology**
  - be aware of the cultural and contextual dependence of developing technologies, and their impact on the individual, family, society and environment

Technology Education Curriculum Framework



Learning Elements under Knowledge Contexts in Technology Education

Information & Communication Technology	Materials & Structures	Operations & Manufacturing	Strategies & Management	Systems & Control	Technology & Living
Computer Systems	Materials & Resources	Tools & Equipment	Business Environments, Operations & Organizations	Concepts of System	Food & Nutrition
Computer Networks	Material Processing	Production Process	Resources Management	Application of Systems	Food Preparation & Processing
Programming Concepts	Structures & Mechanisms	Project Management	Marketing	System Integration	Fabric & Clothing Construction
				Control & Automation	Fashion & Dress Sense Family Living
					Home Management & Technology

Common Topics

Technology & Society | Safety & Health | Information Processing & Presentation | Design & Applications | Consumer Education

8% of the Total Lesson Time for KS3 (220 hours)

Level	Information and Communication Technology	Materials and Structures	Operations and Manufacturing	Strategies and Management	Systems and Control	Technology and Living
Secondary 1 (minutes)	• K1 Computer Systems (310) • K16 Information Processing and Presentation (730)	• K4 Structures & Mechanisms (320)	• K5 Tools and Equipment (160) • K6 Production Process (920)		• K8 Concepts of System (80) • K9 Application of Systems (80)	• K10 Food and Nutrition (300) • K11 Food Preparation and Processing (410) • K12 Fabric and Clothing Construction (410) • K13 Fashion and Dress Sense (120) • K14 Family Living (120) • K15 Home Management and Technology (200)
Secondary2 (minutes)	• K2 Programming Concepts (310) • K16 Information Processing and Presentation (730)	• K4 Structures and Mechanisms (600)	• K6 Production Process (600)		• K8 Concepts of System (40) • K9 Application of Systems (320)	• K10 Food and Nutrition (340) • K11 Food Preparation and Processing (310) • K12 Fabric and Clothing Construction (350) • K13 Fashion and Dress Sense (140) • K14 Family Living (120) • K15 Home Management and Technology (300)
Secondary 3 (minutes)	• K2 Programming Concepts (620) • K16 Information Processing and Presentation (420)	• K4 Structures and Mechanisms (200)	• K6 Production Process (1080)	• K7 Business Environments, Operations and Organisations (720)	• K8 Concepts of System (40) • K9 Application of Systems (240)	• K10 Food and Nutrition (300) • K11 Food Preparation and Processing (340) • K12 Fabric and Clothing Construction (360) • K13 Fashion and Dress Sense (140) • K14 Family Living (120) • K15 Home Management and Technology (300)
Total lesson time for Secondary 1 - 3: 220 hours (13200)						

15% of the Total Lesson Time for KS3 (413 hours)

Level	Information and Communication Technology	Materials and Structures	Operations and Manufacturing	Strategies and Management	Systems and Control	Technology and Living
Secondary 1 (minutes)	• K1 Computer Systems (600) • K16 Information Processing and Presentation (1380)	• K3 Materials and Resources (320) • K4 Structures and Mechanism (320) • E2 Material Processing (320)	• K5 Tools and Equipment (320) • K6 Production Process (1520)		• K8 Concepts of System (80) • K9 Application of Systems (80)	• K10 Food and Nutrition (500) • K11 Food Preparation and Processing (660) • K12 Fabric and Clothing Construction (620) • K13 Fashion and Dress Sense (260) • K14 Family Living (120) • K15 Home Management and Technology (560) • E8 Fabric and Clothing Construction (80) • E 9 Fashion and Dress Sense (80) • E10 Home Management and Technology (80)
Secondary 2 (minutes)	• K2 Programming Concepts (480) • K16 Information Processing and Presentation (1200) • E1 Computer Networks (300)	• K3 Materials and Resources (200) • K4 Structures and Mechanism (600) • E2 Material Processing (320)	• K5 Tools and Equipment (280) • K6 Production Process (1200)		• K8 Concepts of System (40) • K9 Application of Systems (320)	• K10 Food and Nutrition (500) • K11 Food Preparation and Processing (660) • K12 Fabric and Clothing Construction (600) • K13 Fashion and Dress Sense (260) • K14 Family Living (120) • K15 Home Management and Technology (580) • E8 Fabric and Clothing Construction (80) • E 9 Fashion and Dress Sense (80) • E10 Home Management and Technology (80)
Secondary 3 (minutes)	• K2 Programming Concepts (1000) • K16 Information Processing and Presentation (680) • E1 Computer Networks (300)	• K3 Materials and Resources (120) • K4 Structures and Mechanism (200)	• K5 Tools and Equipment (320) • K6 Production Process (1720) • E3 Project Management (320)	• K7 Business Environments, Operations and Organisations (720) • E4 Resources Management (210) • E5 Marketing (150)	• K8 Concepts of System (40) • K9 Application of Systems (240)	• K10 Food and Nutrition (500) • K11 Food Preparation and Processing (660) • K12 Fabric and Clothing Construction (600) • K13 Fashion and Dress Sense (260) • K14 Family Living (120) • K15 Home Management and Technology (580) • E8 Fabric and Clothing Construction (80) • E 9 Fashion and Dress Sense (80) • E10 Home Management and Technology (80)
						Total Lesson Time for Secondary 1 - 3: 413 hours (24780)

Technology Education Curriculum in School

Broad and balanced

- Coverage of knowledge contexts
- Variety of contexts
- Variety of learning experiences

Home Economics / Technology and Living

Position of HEc / TL in TEKLA

ICT	M&S	O&M	S&M	S&C	T&L
Apply concepts and skills acquired in Computer Literacy	• Materials & resources • Materials processing	• Tools & equipment • Production process • Project management	• Business environment, operation & organisation • Resources management • Marketing	• Concepts of system	• Food & nutrition • Food preparation & processing • Fabric & clothing • Fashion & dress sense • Family living • Home management & technology
	• ***Structure & mechanism***			• ***Application of systems*** • ***System integration*** • ***Control & automation***	

Example of a Scheme of Work

	Unit	Core	Extension
1	Introduction	• What is HEc/TL? • Modes of learning activities and assessment • Good housekeeping of work area • Safety precautions and regulations	
2	Health and Health Concerns		
	What is Health	• Relationship between physical, mental and social health • Food pyramids and dietary goals for teenagers	• Food pyramids used around the world and for other age groups • Eating habits
	Meal Planning (1)	• Breakfast, one-dish meal, main course • Food groups and food commodities • Food preparation and cooking techniques and heat transference	• Food groups and food commodities • Courses of meal, meal planning for people having malnutrition • Food preparation techniques
	Meal Planning (2)	• Family meals and meals for special occasions • Meal pattern, macro nutrients, food commodities, dietary goals • Food preparation and cook techniques, nutrition label, heat transfer • Food spoilage	• Family meals • Food commodities, dietary goals • Food preparation techniques • Food preservation, food experiments • Food product development, food culture
	Meal Planning (3)	• Meals for people with special needs and individual requirements • meal pattern, micro nutrients • Food preparation and cooking techniques • Retention of nutritional values • Food product development, food culture	• Meals for people with special needs and celebration • Food experiments • Food product development, food culture

Example of a Scheme of Work

	Unit	Core	Extension
3	"Green Design"		
	Sustainable Textile Products	• Fashion design • Clothing technology • Fibres and fabrics	• Clothing technology • Fibres and fabrics
	Being Fashionable	• fashion design • Clothing technology • Fibres and fabrics	• Clothing technology • Fibres and fabrics
	Garment Making	• Fashion design • Clothing technology • Fibres and fabrics	• Clothing technology • Fibres and fabrics
	Materials and Resources	• Care of materials and resources • Fibres and fabrics • Safety issues	• Healthy environment • Fibres and fabrics • Safety issues
4	Consumer Studies	• Wise shopping • Comparing products • Rights and responsibilities of consumers • Effects of advertisements • Food trade	
5	Family	• Relationship with others • Roles and responsibilities • Social / eating habits and table manners	• Money management • Types of family

Example of a Unit
Meal Planning III

- **Unit Plan**
  - Knowledge contexts
  - Process (application of design cycle)
  - Impact
- **Teaching points and learning elements**
  - Subject based theories, concepts and skills
  - Application of knowledge and skills acquired in other subjects
  - Collaboration with other subjects

Modes of Implementation of Technology Education Curriculum in Schools

- Subject-based learning
- Aligning subjects/knowledge contexts
- Collaborative teaching of subjects/knowledge context
- Theme-based learning
- Life experiences of students

Suggested Strategies (1) Subject Based

- Home Economics (HEc) / Technology and Living (TL)
- Computer Literacy
- Design & Technology
- ……
- ……

Suggested Strategies (2)
Aligning Existing subjects

HEc / TL	D&T	CL
Management of resources • utilization of resources in the family • principles in developing strategies for sustainable development • reuse and recycle of resources in the home	Technology and society • sustainable development in the society • recycle and reuse of resources • impact of technological decisions • Innovative technological devices	Issues related to the use of IT • recycling • potential health hazards

Suggested Strategies (3) Collaboration among subjects

	HEc / TL	CL
Week 1 – 4	Food and Nutrition • Dietary goals and food pyramids for different age groups • Balance intake of nutrients • Nutritive value of food commodities	Spreadsheet – e.g. excel
Week 5 - 6	• Meal planning for adults with different needs ➢ calculation and presentation of nutritive value of the planned meals ➢ compare the nutritive value of the planned meals with recommended daily intake	Powerpoint presentation

Suggested Strategies (3) Collaboration among subjects

	HEc / TL	D&T	CL
Week 1- 4	• Home Management ➢ food and nutrition • Needlework, Dress and Design ➢ wardrobe planning	***Problem solving models*** for product making • ***Design cycle*** • Application of design cycle to a project solution • Realisation of the design	Webpage design
Week 7 - 10	• Application of ***design cycle***: ➢ food product development ➢ fashion design		Application of ***problem solving models*** through designing a programme to solve a specified situation / problem

Suggested Strategies (4)
Theme-based Learning

Celebrating the School's 25th Anniversary

		HEc / TL	D&T	CL
S1	Week 1 – 20	Subject based learning		
	Week 21 - 24	TE Project – Decorating the School		
S2	Week 1 - 18	Subject based learning		
	Week 10 - 24	TE Project – Home Coming Gathering		
S3	Week 1- 16	Subject based learning		
	Week 17 - 24	TE Project – Fashion Show		

Suggested Strategies (5)
Life Experiences

		HEc / TL
S1	My family	• Family living • Meal planning • Family budgeting
S2	Serving the school / community	• Nutrition labelling • Design and make
S3	Preparing for further studies / work	• Food product development • Fashion design and trend setting

** Other Learning Experiences

Ongoing Renewal of the School Curriculum

Learning to Learn 2+ - The Hong Kong School Curriculum

A broad and balanced curriculum with diversification and specialisations (choices) for academic, professional and vocational development according to students' needs

Nurturing lifelong & self-directed learning capabilities

Multiple pathways

Fostering whole-person development

SEVEN LEARNING GOALS

FIVE ESSENTIAL LEARNING EXPERIENCES

Moral and Civic Education | Intellectual Development | Community Service | Physical and Aesthetic Development | Career-related Experiences

Life-wide Learning

Secondary 4-6

SS

Core Subjects
Chinese Language
English Language
Mathematics
Liberal Studies

+

Electives
20 Elective Subjects
Applied Learning
Other Languages

+

Other Learning Experiences
Moral and Civic Education
Aesthetic Development
Physical Development
Community Service
Career-related Experiences

Secondary 1-3

JS

Four Key Tasks: Towards major renewed emphases (MRE) at the JS level and beyond
STEM education & ITE, Values education (incl. MCE & Basic Law education), Language across the Curriculum (incl. reading), etc.

Primary 1-6

P

Chinese Language Education	English Language Education	Mathematics Education	Science Education	Technology Education	Personal, Social & Humanities Education	Arts Education	Physical Education
Key Learning Area	Key Learning Area	Key Learning Area	Key Learning Area	Key Learning Area	Key Learning Area	Key Learning Area	Key Learning Area

General Studies

Kindergarten 1-3

KG

Values & attitudes, Skills and Knowledge

Language | Early Childhood Mathematics | Nature & Living | Self & Society | Arts & Creativity | Physical Fitness & Health

Values & attitudes

Seven priority values
- Perseverance
- Respect for Others
- Responsibility
- National Identity
- Commitment
- Integrity
- Care for Others

Generic skills

Basic Skills
- Communication Skills
- Mathematical Skills
- IT Skills

Thinking Skills
- Critical Thinking Skills
- Creativity
- Problem Solving Skills

Personal & Social Skills
- Self-management Skills
- Self-learning Skills
- Collaboration Skills

Major Renewal Emphases

STEM education

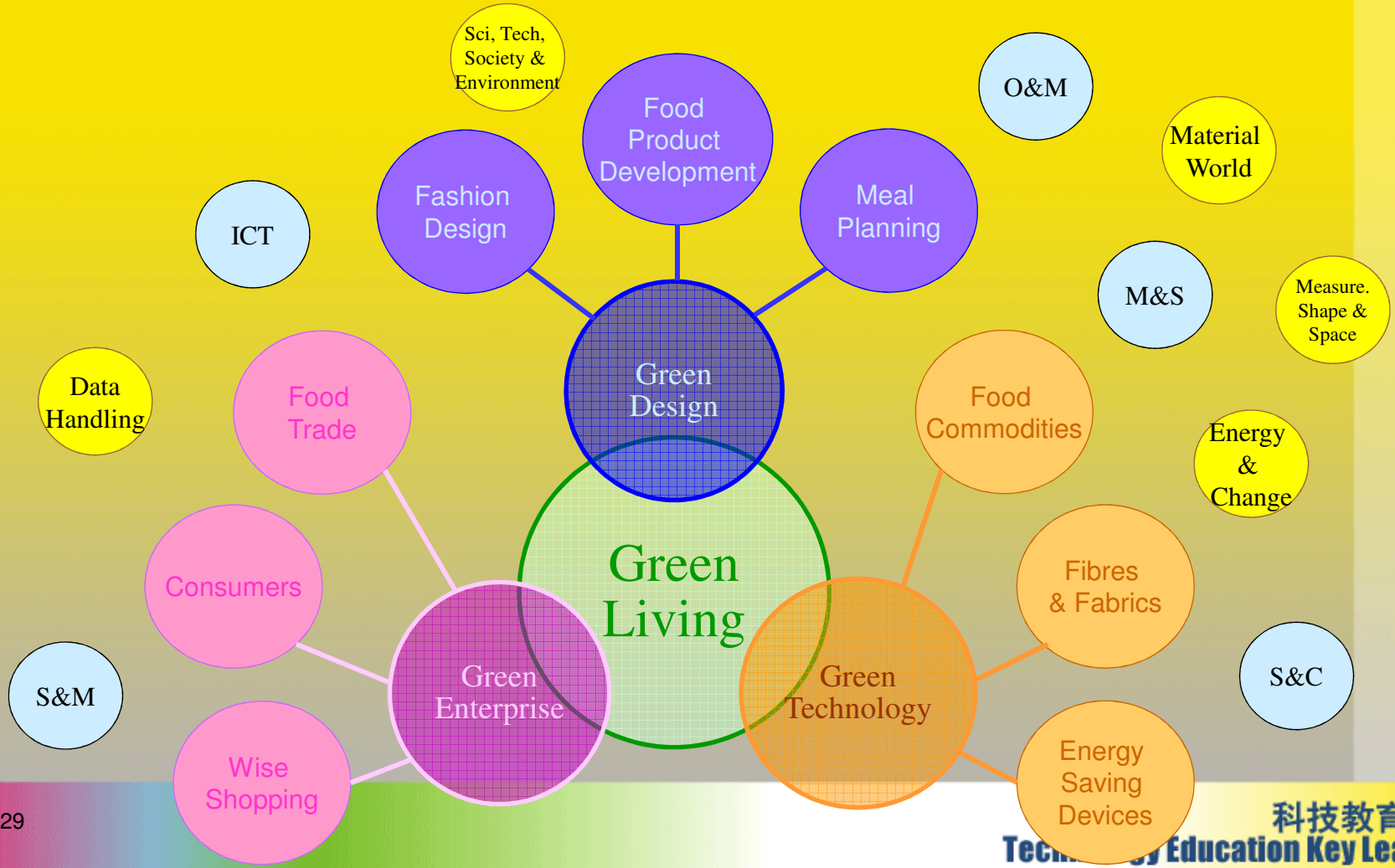
- Principles
  - Develop among students a solid knowledge based and enhance their interest in science, technology and mathematics
  - Strengthen students' ability to integrate and apply knowledge and skills
  - Nurture students' creativity, collaboration and problem solving skills
  - Foster students' innovation and entrepreneurial spirit
- Approaches
  - Learning activities based on topic of Home Economics / Technology & Living
  - Projects integrating relevant learning elements of different subjects / key learning areas
- Related topics
  - Food and nutrition (e.g. dietary goals and eating habits, food groups)
  - Food preparation & processing** (e.g. hygiene and safety, food preparation & processing)
  - Fabric construction **
  - Home management & technology ** (e.g. food technology, energy saving devices)

** including experimental approach

STEM Education - Suggested Theme

Green Living

- Students are asked to explore issues of green design, green technology and green enterprise in response to related environmental concerns with examples provided by different subjects



STEM Education - Suggested Project

A weekly menu for a school lunch box supplier

- Design menu
- Design mobile application for calculating calorie value
- Food research and development

Major Renewal Emphases

Values education

- Nurture of technological awareness in developing learners' ability to make judgment and decisions through
  - choice of design (e.g. meal plan, food product, fashion design) to meet specific needs
  - choice of materials (e.g. food, fabric) for a specific design
  - choice of process, tools, equipment to realise a design

Major Renewal Emphases

Language across the curriculum (LaC)

- Collaboration with Chinese / English teachers to facilitate LaC, e.g.
  - common topics between the HEc / TL and Chinese / English Language subjects
  - text types typical of the HEc / TL (e.g. procedure / instructions)
  - HEc / TL specific language features and rhetorical functions (e.g. providing reasons and explanations, stating causes and effects, comparing and contrasting, giving explanations)

Holistic Curriculum Development in the TE KLA

- Education trends
- School vision and mission
- Analysis of school context
- Students' interests and abilities, and teachers' expertise

Curriculum Emphases for Technology Education

Curriculum documents:

Secondary Education Curriculum Guide

Technology Education KLA Curriculum Guide

General Studies Curriculum Guide

Curriculum and Assessment Guides for Technology Elective Subjects at the Senior Secondary Level

Holistic Curriculum Development
Planning-Implementation-Evaluation
Collaboration among teachers (within the TE KLA and across other KLAs, e.g. planning STEM-related activities)

A school Technology Curriculum with Vertical Continuity and Lateral Coherence

Smooth Learning Progression from One Key Stage to Another

Students' Solid Foundation in Technology

Resources & Support

Learning and teaching resources

Community resources

School facilities & support

Research & Development projects

Professional development of school leaders and teachers

Holistic curriculum development

- Building of knowledge foundation in TEKLA
  - Central curriculum vs technology curriculum in school
  - Development of technological literacy through the three strands of TE: knowledge contexts in technology, process in technology and impact of technology
  - Time allocation
    - » Junior secondary level: 8 – 15% of the total lesson time allocated to TE
- Cross-curricular learning
  - Project learning and task-based activities with collaboration between technology subjects and subjects of other KLAs

TEKLA Knowledge Contexts Reference Materials

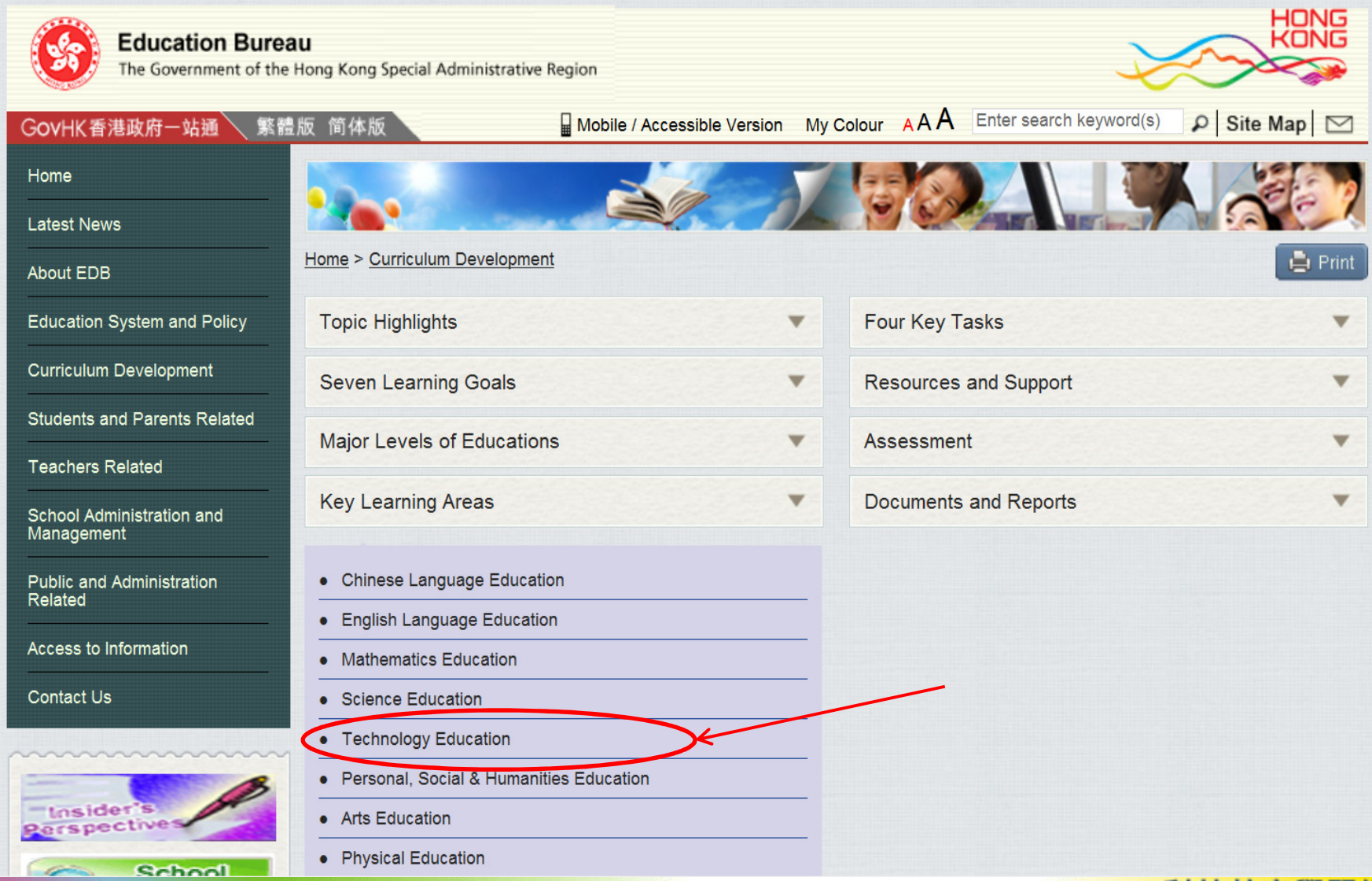
Materials & Structure Operation & Manufacturing Systems & Control	Strategies & Management	Technology & Living
(1) Modules, e.g. • Production Process • Materials and Resources • Tools and Equipment (2) Case study, e.g. • Design process with ergonomic • 3G: green design, green technology and green enterprise	(1) Theme-based resources, e.g. • Be your own Financial Planner • Organic farming at school • Smart spending • Start your own BIZ • Superb business ideas (2) Modular-based resources, e.g. • Nature of money • Presentation of your consumption patterns • Concepts of incomes, expenses and retained earnings	(1) e-Resources • Meal planning • Basic food science • Principles of food processing and technology (2) Food and textile tests, e.g. • Emulsion, enzymatic browning • Absorbency, abrasion (3) Booklets for TE knowledge context – Technology & Living (4) Learning modules, e.g. • Personal financial education • Food technology and health • Dress sense and appreciation of fashion

Subjects of other KLAs – Junior Secondary

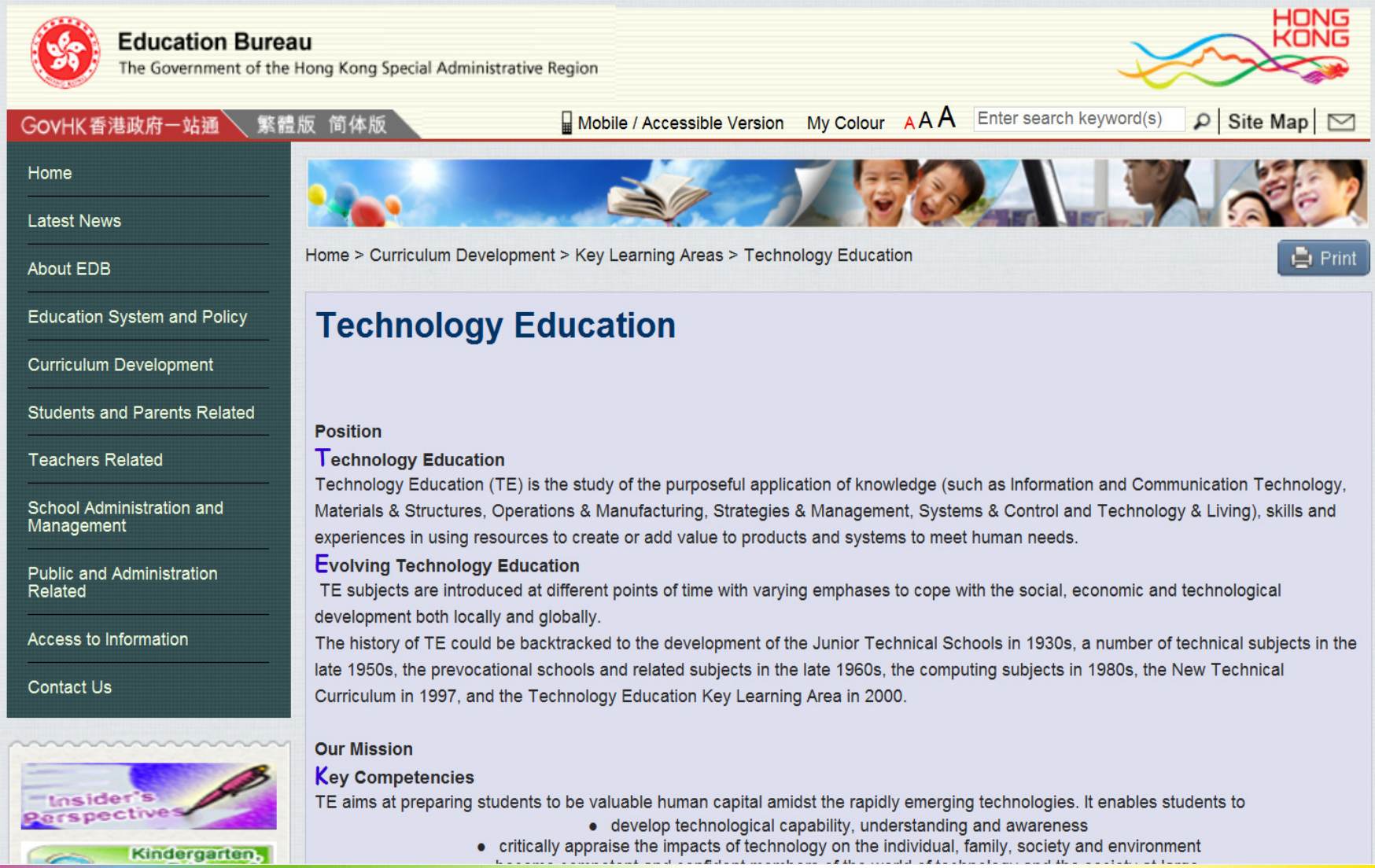
- **Science**
  - common acids and alkalines (everyday use - food preservation)
  - a healthy body (food substances, balanced diet, natural and processed food)
- **Visual Arts**
  - visual elements, visual images
- **Life and Society**
  - personal and social development (healthy lifestyle and self-management, family life)
  - resources and economic activities (managing finance and being your own master with money, rights and responsibilities of sensible consumer)

Resources and Support

Resources and Support



Resources and Support



Resources and Support

EDB YouTube Channel

Please refer to the section on General Studies for Primary Schools	Please refer to the section on General Studies for Primary Schools
Primary 4 – Primary 6	
Please refer to the section on General Studies for Primary Schools	Please refer to the section on General Studies for Primary Schools
Secondary 1 – Secondary 3	
• (of both genders) have equal opportunities to gain access to broad and balanced learning experiences in TE • engage in authentic, hands-on problem-solving learning activities using easily available materials and equipment • develop their knowledge and skills to cope with rapidly emerging technologies • develop their willingness to update their knowledge and skills in technology from time to time • appraise the impacts of technology and develop critical thinking ability	• provide equal learning opportunities in TE for both genders • move away from subject-based teaching and specific skills training to hands-on problem-solving teaching • integrate student learning within TE KLA and with other KLAs through different knowledge areas • provide life-wide learning experiences to students encourage students to appraise their solutions • use a variety of methods to assess students' learning processes and outcomes
Secondary 4 and above	
• study through different knowledge areas in technology, such as information and communication technology, design & planning, system & management, sciences & technology, etc. according to their aptitudes, interests and abilities, in order to prepare themselves for their future studies and career • engage in authentic, hands-on problem-solving learning activities related to various applications of knowledge areas in TE, such as programming, networking, home management, design and make, graphical communication, marketing, etc. in order to acquire skills, concepts and underlying principles, etc. of the applications • develop a global outlook on the innovative and sustainable development of technology	• provide multiple channels for students to study technology through different knowledge areas according to their aptitudes, interests and abilities • provide students with a wide range of learning experiences (including workplace learning experiences) so that students are better prepared for their future studies and work • provide learning opportunities for students to explore innovative and sustainable development in technology

- Curriculum Documents
- "Technology Education - Wisdom of Life" Information Folder
- References & Resources
- Questions & Answers
- Contact Us
- What's New
- Teacher Education Programmes
- Collaborative Research & Development ("Seed") Projects
- Technology Education Good Practices Sharing Scheme

Resources and Support

- Consolidated Subject
- Composite Furniture and Equipment Grant (CFEG)
- One-off Grant to Secondary Schools for the Promotion of STEM Education

~Thank you~