



Practical and Technical Skills

Syllabus

Grade 6

(Implemented from the Year 2015)

Department of Technical Education

National Institute of Education

Sri Lanka

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1.0 Introduction

It is planned to implement Practical and Technical Skills at junior secondary level from the Year 2015 as a subject relevant to the Technology Stream introduced through the process of Education Reforms launched at present. Necessary steps have been taken to make it effective from Grade 6 to grade 9 through activity based practical work and projects as required in the teaching learning process which has been designed to develop competencies that contribute to the achievement of National Goals formulated by the National Education Commission.

Practical and Technical Skills is placed in the curriculum as a compulsory subject from Grade 6 to Grade 9. Teaching learning process in grade 6 and 7 should be carried out based on activities and it is expected that complex activities and projects are introduced gradually in grades 8 and 9. The content is designed to provide opportunities for pupils to acquire multi (technical and generic/soft) skills. In addition Information and Communication Technology is integrated appropriately.

This subject consists of five technical areas viz,

- Agriculture
- Food
- Elementary Technology
- Business Matters
- Graphics

The identified competencies, competency levels, subject content and learning outcomes in respect of the above mentioned technical areas for Grade 6 to be implemented from 2015 are included here.

2.0 Common National Goals

The national system of education should assist individuals and groups to achieve major national goals that are relevant to the individual and society.

Over the years major education reports and documents in Sri Lanka have set goals that sought to meet individual and national needs. In the light of the weaknesses manifest in contemporary educational structures and processes, the National Education Commission has identified the following set of goals to be achieved through education within the conceptual framework of sustainable human development.

- I Nation building and the establishment of a Sri Lankan identity through the promotion of national cohesion, national integrity, national unity, harmony and peace, and recognizing cultural diversity in Sri Lanka's plural society within a concept of respect for human dignity.
- II Recognizing and conserving the best elements of the nation's heritage while responding to the challenges of a changing world.
- III Creating and supporting an environment imbued with the norms of social justice and a democratic way of life that promotes respect for human rights, awareness of duties and obligations, and a deep and abiding concern for one another.
- IV Promoting the mental and physical well-being of individuals and a sustainable life style based on respect for human values.
- V Developing creativity, initiative, critical thinking, responsibility, accountability and other positive elements of a well-integrated and balance personality.
- VI Human resource development by educating for productive work that enhances the quality of life of the individual and the nation and contributes to the economic development of Sri Lanka.
- VII Preparing individuals to adapt to and manage change, and to develop capacity to cope with complex and unforeseen situations in a rapidly changing world.
- VIII Fostering attitudes and skills that will contribute to securing an honourable place in the international community, based on justice, equality and mutual respect.

3.0 Common National Competencies

The following Basic Competencies developed through education will contribute to achieving the above National Goals.

(I) Competencies in Communication

Competencies in Communication are based on four subsets; Literacy, Numeracy, Graphics and IT proficiency.

Literacy :	Listen attentively, speak clearly, read for meaning, write accurately and lucidly and communicate ideas effectively.
Numeracy :	Use numbers for things, space and time, count, calculate and measure systematically.
Graphics :	Make sense of line and form, express and record details, instructions and ideas with line form and colour.
IT proficiency:	Computer literacy and the use of information and communication technologies (ICT) in learning, in the work environment and in personal life.

(II) Competencies relating to Personality Development

- Generic skills such as creativity, divergent thinking, initiative, decision making, problem solving, critical and analytical thinking, team work, inter-personal relations, discovering and exploring;
- Values such as integrity, tolerance and respect for human dignity;
- Emotional intelligence.

(III) Competencies relating to the Environment

These competencies relate to the environment: social, biological and physical.

Social Environment: Awareness of the national heritage, sensitivity and skills linked to being members of a plural society, concern for distributive justice, social relationships, personal conduct, general and legal conventions, rights, responsibilities, duties and obligations.

Biological Environment: Awareness, sensitivity and skills linked to the living world, people and the ecosystem, the trees, forests, seas, water, air and life- plant, animal and human life.

Physical Environment: Awareness, sensitivity and skills linked to space, energy, fuels, matter, materials and their links with human living, food, clothing, shelter, health, comfort, respiration, sleep, relaxation, rest, wastes and excretion.

Included here are skills in using tools and technologies for learning working and living.

(IV) Competencies relating to Preparation for the World of Work

Employment related skills to maximize their potential and to enhance their capacity

- to contribute to economic development,
- to discover their vocational interests and aptitudes,
- to choose a job that suits their abilities, and
- to engage in a rewarding and sustainable livelihood.

(V) Competencies relating to Religion and Ethics

Assimilating and internalizing values, so that individuals may function in a manner consistent with the ethical, moral and religious modes of conduct in everyday living, selecting that which is most appropriate.

(VI) Competencies in Play and the Use of Leisure

Pleasure, joy, emotions and such human experiences as expressed through aesthetics, literature, play, sports and athletics, leisure pursuits and other creative modes of living.

(VII) Competencies relating to “learning to learn”

Empowering individuals to learn independently and to be sensitive and successful in responding to and managing change through a transformative process, in a rapidly changing, complex and interdependent world.

Report of the National Education Commission (December 2003)

4.0 Aims of the subject

- Grasp practical skills extended throughout the five wide technical areas.
- Select and use equipment and material relevant to the tasks when engaged in practical and technical activities.
- Collect and arrange meaningfully information connected to rapidly evolving technology.
- Develop desirable work habits and behaviours for progress of day to day life.
- Attempt new inventions in a productive manner based on confidence developed through self-reliance
- Complete a project systematically integrating skills and experiences acquired through different activities.

Technical Area	Competency	Competency Level	Content	Learning Outcomes	Period
Agriculture	1.0 Develop cropping land using available resources.	1.1 Prepare garden plot in the school garden and grow crops that are easily raised.	- Environmental requirements needed for growing crops. - Sunlight, space, soil, water - Categories of crop in terms of usage. - Beneficial animal categories for growing crops. - Gardening tools. - Preparing land for cultivation. - Preparing soil for crop growing - Planting crops. - Planting materials. - Seeds, seedlings, cuttings and other vegetative parts such as comes etc. - Treatments prior to planting. - Planting distance and depth. - Maintenance - Shading - Water supply - Conserving soil water - Mulching-Natural / artificial material - Organic manure - Weed control - Pests & diseases control. - Environment friendly methods	- Prepare a suitable garden plot for the locality. - Prepare planting materials correctly. - Plant correctly & maintain crops	18
		1.2 Beautify classroom surrounding with ornamental foliage and flowering plants.	- Selection of appropriate ornamental plants. - Foliage plants - Flowering plants - Forms of Plants (climbing and hanging types, conical shape	- Select foliage and flowering plants based on different growing patterns. - Take care of potted plants correctly. - Beautify surrounding with ornamental plants to give an attractive appearance.	

Technical Area	Competency	Competency Level	Content	Learning Outcomes	Period
Food	2.0 Contribute to conserve biological environment.	2.1 Meet the needs of animals that live nearest to one's biological environment.	- and dwarf plants) • Potting plants and arranging plants beautifully in beds. • Common animal and living organising found in home surrounding. • Birds • Butterflies & other insects • Squirrels • Other animals • Various environments and habitats. • Importance of there survival to the environment. • Arranging fascinating environment by providing needs of animals.	• Observe and record behaviour of animals commonly visible in home surrounding, • Gain experience on importance of animals to the environment. • Construct an environment for animals to meet their needs and requirements.	18
	4.0 Contribute to the food security by keeping food quality for consumption.	4.1 Collect food for consumption by describing food charasterestic.	• Food • Classification of food type • Characteristics of food (forms of food) • Fresh food • Processed food • Purpose of consuming food. • Securing food for self/ home consumption • Home made agro products • Selecting food for purchasing • Food protection • Cleaning • Packing • Storing	• Describe the characterestics of food • Select and purchase appropriate food for consumption • Secure food for home consumption.	

Technical Area	Competency	Competency Level	Content	Learning Outcomes	Period
		4.2 Maintain kitchen as planned to consume quality food. 4.3 Contribute to food security using simple techniques.	• Plan and maintain kitchen as a place of preparing food. • Places to be planed • Food store • Water supply • Preparing of food • Fire place & storage of utensils & cutlery • Storage of prepared food before served. • Labelling • Prepare labels for stored kitchen ingredients using an appropriate software related to word processing. • Maintaining kitchen • Cleanliness of work place • Waste disposal • pest management • Efficiency • Storing seasonal food for consumption. • Suitable traditional methods. • Simple techniques	• Plan kitchen for preparing quality food • Maintain cleanliness and efficient use of the kitchen in order to consume quality food. • Prepare labels using word processing software. • Try out traditional methods of collecting and storing seasonal food. • Collect and store seasonal food using simple techniques. • Minimise food waste.	

Technical Area	Competency	Competency Level	Content	Learning Outcomes	Period
Elementary Technology	6.0 Use basic hand tools and equipment correctly and safely for technical tasks.	6.1 Perform technical tasks by handling simple hand tools, equipment and materials safely. 6.2 Make useful simple device/products using available materials.	- Define technical tasks in simple terms. - Materials, Timber, Tin sheets, plastics - Properties of materials - Tolerance - Shaping - Good conductors of heat and electricity - Performing technical tasks using identified tools and materials. - Measuring - Marking / piercing - Parting - Shaping - Joining/tying - Assembling - Accidents and safety - Maintenance and storing of tools and equipment. - Meaningful and simple artifact. - Transfer innovative idea into a paper. - Selection of materials - Paper - Others - Use colours - Marking, cutting, shaping pasting and painting when necessary.	- Select suitable materials, equipment and simple hand tools for technical tasks - Inquire in using materials for appropriate tasks. - Take care in maintaining and safe use of simple hand tools. - Display design ideas through diagrams. - Select appropriate simple hand tools, equipment and materials related to tasks. - Make simple productive end products.	18

Technical Area	Competency	Competency Level	Content	Learning Outcomes	Period
Business Matters	7.0 Demonstrate the ability to give planned technological solutions to the day to day problems.	7.1 Present technical solutions to identified simple problems that are found in home and school.	- Problems facing in and around the environment. - Problems that could be technology solved. - Reasons for problems solutions suggested. - Simple designs as solutions.	- Set aside day today problems that could be technologically solved. - Investigate reasons and causes for problems. - Present simple devices/artifacts as solutions to the problems.	18
	8.0 Make appropriate decisions when acquiring goods and services.	8.1 Investigate local suppliers by identifying the difference between needs and wants in day to day life.	- Basic human needs and wants. - Goods and services. - Local suppliers - Individual - Institutes - Organisations	- Compare needs and wants. - Select required goods and services to meet needs and wants - Study suppliers who provide goods and services.	
	9.0 Plan and conduct small business enterprises.	9.1 Invest money for saving and earning. 9.2 Calculate cost of production based on material cost.	- Daily savings - Self - Family members - Ways of earning. - Self - Family members - money for earning - Materials used in making goods - List the cost of materials - Calculate cost of production based on materials. - Reporting the cost of production - Use software related to spreadsheet to calculate cost of production and recording	- Incline towards in day to day savings. - Investigate the ways of earning. - Invest money to earn. - Inquire quantities and materials used in making a product. - Record and calculate cost of production based on material cost. - Use spreadsheet in calculating and recording the cost of production - Suggest ways of minimising cost of production.	

Technical Area	Competency	Competency Level	Content	Learning Outcomes	Period
Graphics	10.0 Use simple patterns and designs to make and add glamour to the product.	10.1 Use free hand to draw simple diagrams with various shapes.	• Lines • Simple • Curves • Plane figures • Formal / geometrical • Circles and its components • Polygons (straight lines 3, 4, 6) • Triangles • Squares • Hexagons • Non-formal / irregular • Plant leaf • Flower petals • Combination of formal and non formal (geometrical and irregular) • Draw simple graphics using a suitable software.	• Construct plane figures using lines • Use free hand to draw formal and non formal plane figures • Construct simple graphics by combining formal and non formal shapes • Use appropriate software to draw simple graphics.	18
		10.2 Use shapes and colours for pattern designing.	• Simple patterns and designs • Shapes • Artifact using paper / paper work • Various figures • Sculptures • Simple dress designs • Sewing methods for patterns • Painting	• Design simple patterns by joining different shapes. • Present dress designs as required. • Use different methods in using shapes and colours for dress designs	
	11.0 Use relationship associated with drawing pictorial view and in making models.	11.1 Design three-dimensional view in order to emerge the basic shapes of an simple object.	• Rough pictorial view of artifacts. • View from different angles • Two dimensional view /2D • Three dimensional view /3D • 3D artifacts • Packaging boxes • Containers for home decorations and ornamentals. • Shapes used in stage background	• Draw sketches of simple objects. • Draw two-dimensional views of different shapes of simple objects • Use dot matrices paper to draw three-dimensional view of simple objects.	