Lower Secondary Curriculum, Assessment and Examination Reform Programme

Draft Lower Secondary Curriculum Framework Document

DEL 007

April 2013

National Curriculum Development Centre

Report Distribution and Revision Sheet

Project Name: CURASSE

Project Code: 266845

Report No.:   DEL 007

Report Title: **Draft Lower Secondary Curriculum Framework Document**

Revision	Date of Issue	Originator	Checker	Approver	Scope
1	17 December 2012	Mike McRory	Laura McInerney	John Martin	As below
2	April 2013	Mike McRory	Laura McInerney	John Martin	

Scope of Checking

This report has been discussed with the originator and checked in the light of the requirements of the terms of reference. In addition the report has been checked to ensure editorial consistencies.

Distribution

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Lower Secondary Curriculum, Assessment and Examination Reform Programme

Note on Documentary Series

This document is one of a series produced by Cambridge Education as part of a contract with the National Curriculum Development Centre, Uganda to support the Curriculum, Assessment and Examination Reform Programme (CURASSE).

The reports can be found under the following headings

- Deliverables specified in the contract
- Assessment and Examinations
- Career Guidance and Counselling
- Curriculum
- Inspections
- Labour Market Survey
- Teaching Aids and Learning Materials
- Special Needs
- Teacher Support Programme

Deliverables specified in the contract

DEL	001	Labour Market Survey
DEL	002	Curriculum Situational Analysis
DEL	003	NCDC Secondary Specialist Capacity Building Plan
DEL	004	Curasse Inception Report
DEL	005	Summary Notes of Labour Market Survey and Curriculum Situational Analysis
DEL	007	Lower Secondary Curriculum Framework Document
DEL	019	Assessment and Attainment Reform at Secondary Level - a comparative study
DEL	013	Learning Materials Provision Survey

Assessment and Examinations

ASS	001	Assessment Consultant Progress Report (May 2012)
ASS	002	Assessment Consultant Progress Report (March 2013)

Curriculum

CUR	001	Maths Consultant Progress Report (March 2012)
CUR	002	Science Consultant Progress Report (April 2012)
CUR	003	Social Studies Consultant Progress Report (May 2012)
CUR	004	Generic Skills Consultant Progress Report (May 2012)
CUR	005	Language Consultant Progress Report (May 2012)
CUR	006	Creative Arts Consultant Progress Report (May 2012)
CUR	007	Maths Consultant Progress Report (May 2012)
CUR	008	Science Consultant Progress Report (May 2012)

CUR   009   Maths Consultant Progress Report (October 2012)

CUR   010   Science Consultant Progress Report (October 2012)

CUR   011   Languages Consultant Progress Report (October 2012)

CUR   012   Social Studies Consultant Progress Report (November 2012)

CUR   013   Generic Skills and Technology and Enterprise Consultant Report (November 2012)

CUR   014   Creative Arts Consultant Progress Report (November 2012)

CUR   015   Languages Consultant Progress Report (November 2012)

CUR   016   Creative Arts Consultant Progress Report (December 2012)

CUR   017   Maths Consultant Progress Report (December 2012)

CUR   018   Science Consultant Progress Report (December 2012)

CUR   019   Science Consultant Progress Report (February 2013)

CUR   020   Technology and Enterprise Progress Report (March 2013)

CUR   021   Maths Progress Report (March 2013)

CUR   022   Languages Consultant Progress Report (March 2013)

CUR   023   Science Consultant Progress Report (March 2013)

Inspections

INS   001   Inspections Consultant Progress Report

Labour Market Survey

LMS   001   Labour Market Survey Consultant Progress Report

Teaching Aids and Learning Materials

MAT   001   Low-cost Learning and Teaching Aids Consultant Report (November 2012)

MAT   002   Low-cost Learning and Teaching Aids Consultant Report (March 2013)

Special Needs

SNE   001   Review of special needs and inclusive education policies in Uganda and other countries (June 2012)

SNE   002   SNE Consultant Progress Report (June 2012)

SNE   003   SNE Consultant Progress Report (November 2012)

Teacher Support Programme

TSP   001   Teacher Support Programme Report (July 2012)

TSP   002   Teacher Support Programme Report (October 2012)

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Acronyms and Abbreviations

Acronym	Full term
AIDS	Acquired Immune Deficiency Syndrome
BTVET	Business, Technical and Vocational Education and Training
CURASSE	Curriculum, Assessment and Examination Reform Programme
CEF	Common European Framework
UCLSE	Uganda Certificate of Lower Secondary Education
DES	Department of Educational Standards
EOCA	Equal Opportunities Commission Act
ESSP	Education Sector Strategic Plan
EPRC	Education Policy Review Commission
FL	Foreign Language
GS	Generic Skills
GWP	Government White Paper
HIV	Human Immune Virus
ICT	Information and Communication Technology
KLO	Key Learning Outcomes
LMS	Labour Market Survey
LA	Learning Area
LSCFD	Lower Secondary Curriculum Framework Document
LGA	Local Government Act
LO	Learning Outcome
LE	Life Education
LL	Local Language
MoES	Ministry of Education and Sports
MDGs	Millenium Development Goals
NCDC	National Curriculum Development Centre
NDP	National Development Plan
PE	Physical Education
PSHE	Physical, Social and Health Education
PLE	Primary Leaving Examinations
PPET	Post Primary Education and Training
RE	Religious Education
SD	Sustainable Development
TE	Technology and Enterprise
TVET	Technical and Vocational Education and Training
UN	United Nations
UNEB	Uganda National Examination Board
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UCE	Uganda Certificate of Education
USE	Universal Secondary Education

Glossary

TERMS	DEFINITION
Aims	Broad statement of what the curriculum or a syllabus hopes that learners will achieve as a result of the learning processes.
Curriculum	All learning opportunities planned, guided and supported by the school. The curriculum includes all Learning Areas taught and all other activities, including extra-curricular activities, which the learners take part in.
Learner	A person who is in the process of learning something, in this case in a school situation. In the outcomes-based syllabuses 'learner' is used rather than 'student' or 'pupil'.
Learning	The process of acquiring, practicing and applying new knowledge, understanding, skills and values / attitudes.
Learner-centred	A method of learning and teaching focussed on enabling the learners to learn for themselves rather than being told or shown by the teacher.
Key Learning Outcomes	The main over-arching knowledge, understanding, skills and values / attitudes considered important for all learners to be exposed to throughout the whole curriculum.
Learning Outcome or Outcome	A statement which specifies what the learner is expected to know, understand or be able to do, or the attitude or values expected to have been developed as a result of a learning process.
Outcomes-based	A curriculum or syllabus based on the setting and achievement of Learning Outcomes, as explained above.
Achievement Levels	Particular levels in the development of a learner's progress towards a learning outcome; where the top level is the learning outcome.
Attainment	Achievement of a particular level within a Learning Area.
Competence	Command of a particular skill to an agreed standard.
Competency	A group of specific competencies which give the person the ability to do something.
Competency Levels	Similar to achievement levels, but usually referring to a stage in the development towards competence or command of a particular skill.
Knowledge	Factual information about a topic.
Understanding	To be able to explain a topic or concept in your own words. To know the causes or reasons for things.
Skill	The ability to do something either practically (practical skills) or intellectually (cognitive skills)
Values	The beliefs held by a person or group of people, especially what they consider to be right or wrong. Principles which govern people's lives.
Attitude	Feelings and the way these influence a person's behaviour. The way a person thinks or feels about something. Principles which govern a person's actions.
Learning Area	A group of related subjects or areas of study which form one of the major segments of the curriculum.
Syllabus	A document which prescribes the full course of the study by learners within a given Learning Area. The syllabus presents the Strands, sub strands and their intended learning outcomes in terms of knowledge, understanding, skills and attitudes / values, as well as other guidance for teachers.
Strand	The topics or themes into which a Learning Area is divided. Each Learning Area is divided into a number of Strands which recur during each year of the course. Each Strand is further divided into sub-strands.
Strand Statement	Overall statement of the understanding, concepts, skills and values /attitudes intended to be acquired by learners for a particular strand of a course over the whole period of the course.
Strand: Year Title	The Title of the part of a strand covering one year of study.
Sub-strand	A sub-division of a Strand dealing with particular content within that Strand. Each sub-strand would occupy part of the period of study of that Strand.

Lower Secondary Curriculum, Assessment and Examination Reform Programme

Programme of study	Detailed plan for teaching a Learning Area over a period of time. The detailed part of a syllabus.
Scope	The extent of the understanding, concepts, skills and attitudes or values to be acquired by a learner as a consequence of a particular course of study at a particular level.
Sequence	The order of the introduction or teaching of concepts and skills within a subject, which reflect the progression of understanding or competence over a period of time.
Scope and Sequence	An outline which shows the development of the content of a Learning Area or Strand over a period of the whole course or of a year.
Core	Parts of a Learning Area which all learners should learn.
Extended	Parts of a Learning Area (or Strand, in some cases) which are considered suitable for study mainly by more able learners.
Electives	Parts of a Learning Area (or Strand, in some cases) which learners may choose to study, but which is not studied by all learners.
Programme Planner	A tool which gives the overview of the planned course of study – showing the strands and sub strands and the amount of time allocated to each.
Pre-requisite skills and knowledge	Skills and knowledge which are necessary to acquire before learning further skills or knowledge.
Indicator	Statement of observable behaviour which shows that a learner has achieved some level of competence on a learning outcome.
Assessment	Judging and describing the learning outcomes that learners have achieved.
Assessment event / activity	An opportunity for a learner to demonstrate achievement on a specific learning outcome or indicator, usually recorded to give a record of learner's progress.
Formative Assessment	On-going activities which are aimed at producing feedback on learning progress for both learners and teachers
Summative Assessment	A set of activities which measures the achievement of Learning Outcomes at the end of a unit of study or section of study time e.g. one topic, one month, one term or one cycle.
Lesson	A single, planned segment of instruction that takes place within a certain time – usually part of a unit of work.
Period	A unit of time within the school day, usually occupied by a single lesson of 40 minutes.
Learning material	The text books, worksheets and other written material, equipment, information and communications technology, and locally made materials which help learners to learn. Learners may use them independently or with the help of a teacher.

Executive Summary

The Lower Secondary Curriculum Framework is an outcome of the Education Sector Strategic Plan (2009 – 2018) and other educational reports and studies. It covers the levels of schooling from Senior 1 to Senior 4. The purpose of the Lower Secondary Curriculum Framework is to inform all stakeholders in the education system, and members of the public, about the philosophy, aims and expected outcomes of the lower secondary school curriculum. The curriculum consists of all aspects of learning and teaching, both formal and informal, which takes place in schools.

The country's vision for the lower secondary curriculum can be summarised in this statement, derived from the underlying philosophy of secondary education for a modern Uganda:

A holistic education for personal and national development

The curriculum framework was developed following two research studies, stakeholder consultations and a comprehensive review of national education and development documents. The situational analysis of the current curriculum and the labour market survey both provided a solid foundation on which to commence the development of the curriculum framework. The situational analysis confirmed the findings of the 2007 Roadmap for Reform: the current lower secondary curriculum is regarded as good at addressing the needs of a small elite opting for further academic studies at the tertiary level. However, it results in unacceptably high failure rates, particularly in subjects such as Mathematics and Science, and especially in the multi-ability environment of universal secondary education. The labour market survey revealed that employers do not think that Senior 4 graduates have the necessary skills for employment in our country. The documents reviewed include the 1992 Government White Paper on Education, National Development Plan 2010-2015, the Education Sector Strategic Plan as well as syllabi and policies from other countries. The review ensured that the curriculum framework was a product of national priorities and international best practice.

Key Learning Outcomes, Values and Generic Skills

The research and consultations led to the development of four Key Learning Outcomes (KLO), six Values and eight baskets of Generic Skills. The KLOs are summarised in the following statement: The lower secondary curriculum should contribute to learners becoming **self-assured individuals**, who take pride in being **responsible and patriotic citizens**; who have a **passion for life-long learning;** and who possess abilities and a willingness to make a **positive contribution to national development**.

The six Values, which are at the centre of the curriculum framework, are: *peaceful and harmonious*, *integrity and honesty*, *patriotism*, *positive attitude towards work*, *respect for human rights* and *tolerance of difference*. The eight Generic Skills baskets contain a number of skills which are acquired and applied throughout curriculum. They are: *Communication*, *Social and inter-personal skills*, *Creativity and innovation*, *Critical thinking and problem-solving*, *Learning to learn*, *Workplace behaviour*, *Numeracy* and *Information and technology*. The KLOs, Values and Generic Skills underpin the reformed curriculum.

Ensuring the inclusion, participation and achievement of all learners

At lower secondary school level, the curriculum will give opportunities for all learners to achieve the outcomes of a core programme of study. All learners must have equal opportunity to acquire the knowledge, understandings, skills, and values essential for a productive life after school. The lower secondary school population is characterised by a wide range of abilities, yet every young person in the country is entitled to a broad general education. At present, there is varying capacity to differentiate the learning experiences at school level to ensure inclusivity.

In order to ensure the inclusion of all learners, it is necessary for schools to identify the barriers that may lead to exclusion, and then reduce those barriers. Schools need to respond positively to diversity and difference. They must continually strive to meet the needs of all learners. There must be a continuous process of quality improvement in teaching and learning. NCDC and its partners are preparing guidelines to support teachers, schools and districts to ensure the inclusion, participation and achievement of all learners.

The Curriculum Framework's eight Learning Areas

This curriculum framework provides details of the knowledge, understanding, skills, attitudes, and values which are prescribed as the outcomes of the lower secondary school curriculum. It proposes eight Learning Areas as depicted in the wheel below. The learning associated with each area is part of a broad, general education and lays a foundation for later specialisation.

For each of the eight Learning Areas, this document contains:

- a Rationale statement, which presents the philosophical argument for the LA;

- a list of the Strands within which the learning outcomes are structured;

- a summary of Learning Outcomes – categorised under 'understandings', 'skills', and 'values'.

Separate tables indicate how the eight Learning Areas contribute to the achievement of the four Key Learning Outcomes of the Lower Secondary School Curriculum, the development of the six Values and the acquisition and application of the eight baskets of Generic Skills.

LOWER SECONDARY CURRICULUM FRAMEWORK

Science
Science enquiry skills
Life science
Materials science
Physical science
Earth and space science
Science, society and technology

Maths
Mathematical reasoning and problem solving
Number
Shape and space
Data and probability
Patterns and algebra
Measurement

Religious Education
Christian living today
Christian religious education and its relevance to Africa
Islamic religious education

Creative Arts
Performing arts
Visual arts

Generic Skills
Creativity & inovation
Communication
Numeracy
Learning to learn
Information & technology
*Values
Workplace behaviour
Social and interpersonal skills
Critical thinking & problem-solving

Social Studies
Society and leadership
Time and continuity
People and their environment
Resources and sustainable development

Life Education
Personal, social and health education
Physical education

Languages
Listening
Reading
Speaking
Writing
Response to literary text

Technology and Enterprise
Self employment and money
Crop production and animal husbandry
Food preparation and food security
Housing and construction
Water sanitation and hygiene
Machines and technologies

*Values
Peaceful and harmonious
Integrity and honesty
Patriotism
Positive attitude to work
Respect for human rights
Tolerance of difference

A learner-centred approach

The thrust of the programmes of study in the various Learning Areas will be experiential, calling for a learner-centred approach, appropriate to the demands of resource constraints and high learner/teacher ratios. Teachers will be expected to make a pedagogical shift from the 'knowledge-transmission' mode, currently the norm, to a more 'active-learning' approach. Learners will take more control of their own learning, by sharing the use of appropriately-designed textbooks and accessing multimedia content where available. The reformed curriculum will encourage schools to provide learners with increased opportunities to build work-related knowledge, experience and skills, as Generic Skills will be integrated throughout the curriculum.

The reformed Lower Secondary Curriculum will be delivered using textbooks which have been developed, designed and produced to achieve the intentions of the reform. The textbooks must: be interactive; be inclusive; accommodate all learning abilities; be contextually relevant; incorporate real-life situations;

contribute to the acquisition of Generic Skills; embed the values considered appropriate; develop the full range of cognitive skills; and use 'assessment for learning'.

Learning time allocation

The curriculum framework proposes that learners will have **8** periods of **40** minutes per day. This will be a total of **1600** minutes per week. They will study for a number of periods in each learning area per week as shown in the table below. The learning area programmes of study will be designed in accordance with the total number of periods per term.

Learning Area	Periods per week	Length of lesson	Total minutes	Percentage Time
Creative Arts	4	40	160	10
Languages (English, Kiswahili and local or foreign language)	8	40	320	20
Life Education	3	40	120	7.5
Maths	6	40	240	15
Religious Education	2	40	80	5
Science	6	40	240	15
Social Studies	5	40	200	12.5
Technology and Enterprise	6	40	240	15
Totals	**40**		**1600**	100

Assessing the achievement of all learners

The reformed curriculum requires a revised, skill-oriented approach to assessment that will support learning and reward achievement at all levels. This will be criterion-referenced to ensure that standards can be maintained year by year. The new approach to assessment will support the changed emphasis in the nature of learning and teaching under the new curriculum by:

- Assessing the learners' *understanding*, not just their knowledge, of key concepts in each Learning Area;

- Focusing on the learner's ability to apply their knowledge in a range of situations;

- Enabling the learner to demonstrate a selection of relevant generic skills;

- Using a diversified range of assessment techniques;

- Encouraging the development of learners' abilities to reflect on their own learning and carry out self-assessment.

The curriculum and assessment agencies are collaborating on the development of Learning Area syllabuses and programmes of study and on the design of assessment materials. These materials will support classroom learning in the new lower secondary curriculum and provide for the assessment and reporting of achievement for all learners following the curriculum.

The reform is an attempt to establish a curriculum and an assessment structure that are appropriate for all learners, not just for the small minority who will eventually proceed to Advanced level courses of study. This has led to the replacement of the previous UCE "O" level examinations and the development of a new approach. Learners will still be formally assessed at the end of Senior 4. But it is proposed that the results of those assessments will lead to the award of a new type of qualification, the Uganda Certificate of Lower Secondary Education (UCLSE).

Additionally, it is proposed that schools will be required to provide each school leaver with a Generic Skills Passport. This will constitute a formal report outlining their achievements, with a particular focus on the generic skills and the values and attitudes that underpin the whole of the reformed lower secondary curriculum. This will ensure that all school leavers, even those who are unable to obtain any qualifications through the Uganda Certificate of Lower Secondary Education (UCLSE), will have a formal record of their achievements at school.

Planning for successful curriculum implementation

A reform of this scale is challenging, expensive and multi-faceted. In order for it to succeed, a robust plan for curriculum implementation and adequate funds must be available. It is essential that textbooks are provided to learners, teachers are properly trained and additional learning and teaching materials are available in all schools. The final section of this document outlines the plan for curriculum implementation and highlights the activities that must be completed prior to learners starting to follow the reformed curriculum's programmes of study.

1.   Foreword and purpose

The Lower Secondary Curriculum Framework is an outcome of the Education Sector Strategic Plan (2009 – 2018) and other educational reports and studies. The lower secondary curriculum reform process emphasises education for life, through which relevant knowledge, skills and attitudes can be acquired by learners. The learning opportunities offered will enable learners to live in harmony with others and with their environment, and to prepare for adult life and making a living.

The country is promoting a shift from a curriculum defined in terms of subject content to a curriculum defined in terms of what learners are expected to understand, know, be able to do, and be able to appreciate. Learners should also be able to demonstrate those achievements. This approach is concerned with the achievement of learning outcomes, which are the understandings, skills and knowledge an individual is able to demonstrate after completion of the learning process. It is acknowledged that the development of knowledge, understanding, concepts, skills and values is a lifelong process. This learning process occurs in many places, not just in schools.

The framework provides the philosophical basis for the shift towards this approach. It also links the aims of the school curriculum to the national development aims, as expressed in the National Development Plan 2010-2015 and the Education Sector Strategic Plan (2009 – 2018).

The Lower Secondary Curriculum Framework is the official reference for all those who are engaged in the learning and teaching process, or whose responsibilities involve planning, developing, adapting, disseminating, and monitoring the lower secondary school curriculum, and also the assessment of learning within Uganda.

The purpose of the **Lower Secondary Curriculum Framework** is to inform all stakeholders in the education system, and members of the public, about the philosophy, aims and expected outcomes of the lower secondary school curriculum. The curriculum consists of all aspects of learning and teaching, both formal and informal, which takes place in schools. This document covers the levels of schooling from Senior 1 to Senior 4. At present the curriculum for Senior 5 and 6 continues to be derived from examination syllabuses prepared by the Uganda National Examinations Board (UNEB).

The curriculum framework provides details of the knowledge, understanding, skills, attitudes, and values which are prescribed as the outcomes of the lower secondary school curriculum. It refers to the policy statements which have led to the reform of the curriculum. It presents the nineteen Key Learning Outcomes

which all institutions of learning in the country should have as their focus for learner achievement. It also describes the objectives, content and structure of the Learning Area syllabuses. It introduces the knowledge, skills and behaviours that will assist young people to live and work successfully in the 21st century. These capabilities, known as 'Generic Skills', are the integrating dimension of the entire curriculum. The curriculum framwork also provides recommendations for effective learning and teaching strategies to achieve the desired outcomes; assessment information and procedures for the evaluation of the curriculum; and resources available for learning and teaching. This should eventually contribute to achieving national consistency of curriculum outcomes at the lower secondary level. The document aims to ensure that educators and schools plan and implement their learning and teaching programmes to enable all learners to achieve the expected outcomes of the curriculum.

2. What is a Curriculum?

A curriculum is all the planned learning experiences offered and implemented by a school[1].

The components of the curriculum can be pictured as a spider's web – see Figure 2.1[2]. The web analogy emphasises the interconnectedness of the components of the curriculum endeavour. All of these provide experiences that contribute to learning. The curriculum is much more than the syllabus.

Figure 2.1: A Curriculum Web
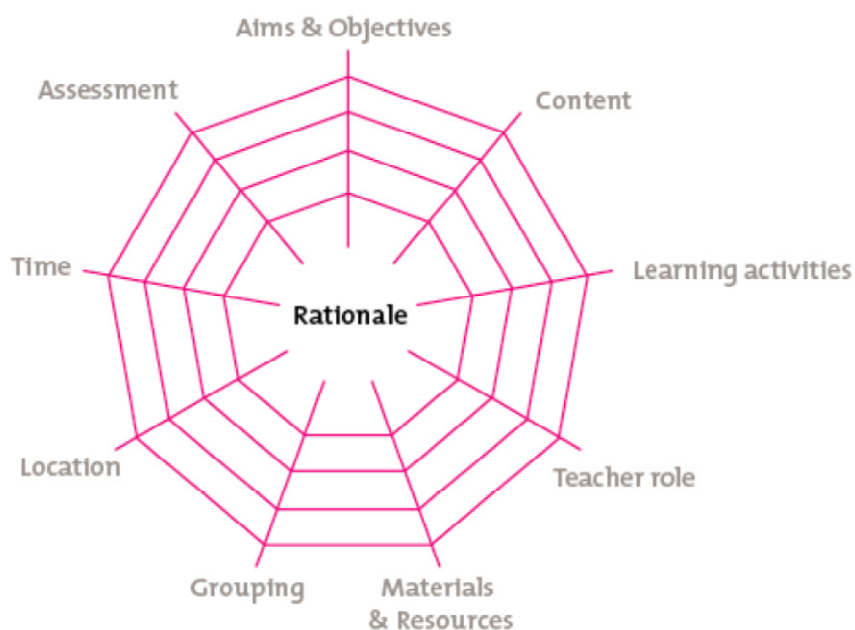
Too much emphasis on one component of the curriculum web will result in a curriculum which is unbalanced. To design a curriculum *which caters for the needs of all learners* is extremely challenging. The web model provides a tool for conducting such a design process and is being used in the preparation of the new lower secondary curriculum. The range of curriculum design activities being embarked upon within the Curriculum, Assessment and Examination Reform programme embraces all components of the curriculum 'web'.

A Curriculum is often conceptualised as a number of elements: the intended, enacted, experienced, assessed and achieved curriculum. In order for learners to achieve the intended learning outcomes, these

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[1] Adapted from Queensland 2008 P-12 Curriculum Framework

[2] SLO

elements must be aligned. Figure 2.2, adapted from the Queensland P-12 Curriculum Framework, demonstrates these linkages.

Figure 2.2: A curriculum's main elements and key questions for curriculum developers, implementers and assessors

Intended Curriculum
• What do we want learners to learn?

Reporting
• How do we communicate what learners have learned and how well they have learned it?
• Who do we communicate to?

Experienced curriculum
Who are the learners?
What do they already know?
How do they learn?
What do they learn?

Enacted Curriculum
• How will we teach so that all leaners will learn it?
• What learning materials will learners use?

Achieved Curriculum
• What have the learners learned as a result of their learning experiences in school?

Assessed Curriculum
• How will learners show what they have learned?
• How will we assess whether learners have learned what we wanted them to learn?

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As the diagram shows, the learner is the focus. A well-planned curriculum provides programmes of study which put the learners at the centre. The programmes of study and learning materials constitute the 'enacted' curriculum. There must be attention to appropriate teaching methodology and assessment techniques, if the 'achieved' curriculum is to correspond to the 'intended' and 'enacted' versions. This means that planning for curriculum dissemination should focus on ensuring learners' effective use of the learning materials. This is explained in more detail in section 10 below.

3.   Education policy context and rationale for reform

This section outlines the principles and general objectives in education and presents the underpinning philosophy upon which the curriculum at the lower secondary level will be based. It also provides the rationale for the lower secondary curriculum, assessment and examination reform. It concludes with a mission statement for the new lower secondary curriculum.

3.1   The Ugandan education policy context

The **1992 Government White Paper on Education**[3] is the basis of official policy on the purposes and programs of education. While some of the programs have been revised as a result of intervening events, the White Paper's articulation of the purposes of Uganda's education system continues to be the definitive source of guidance for the sector. The White Paper states that the broad aims of education are: promoting citizenship; inculcating moral, ethical and spiritual values; promoting scientific, technical and cultural knowledge, skills and attitudes; eradicating illiteracy and equipping individuals with basic skills and knowledge and with the ability to contribute to the building of an integrated, self-sustaining and independent national economy.

Uganda's **National Development Plan 2010-2015** sets out a vision to transform Uganda into a modern and prosperous country. The NDP recognises the existing weaknesses in education, including the low efficiency and variable quality at the secondary level. The existing secondary curriculum, although highly regarded by some, is focused on the needs of a tiny, academically-oriented elite. The needs of the majority of learners need to become the focus.

The National Legal and Policy Framework concerning Education

There is a comprehensive legal and policy framework for education within which the current lower secondary curriculum, assessment and examination reform is located. The most relevant laws and policies are summarised below:

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[3] Republic of Uganda 1992 Government White Paper on the Education Policy Review Commission Report[3], 1992, entitled "Education for National Integration and Development", Kampala

- The **Constitution** of 1995 guarantees the right to education. The Constitution stipulated that access to education is a right of all citizens, the provision of which is an obligation of the State, independent of a person's age. The Constitution also provides for affirmative action for the disadvantaged and includes the field of education;
- The **Local Government Act of 1997** transferred the responsibility for primary and secondary education services to local governments.

- The **Equal Opportunities Commission Act** of 2007 gives effect to the State's constitutional mandate to eliminate discrimination and inequalities against any individuals or group(s) of persons on the grounds of sex, age, race, colour, ethnic origin, tribe, birth, creed/religion, health status, socio-economic standing; and to take affirmative action in favour of marginalised groups.

- **Universal Secondary Education** was declared in 2007 giving any learner who passes the Primary Leaving Examination (PLE) with an aggregate score of 28 or less the right to free secondary education.[4] At present learners whose scores are over 28 are not admitted to secondary schools under the universal secondary education programme. However, if they score 32 or under, learners are able to attend non-USE schools.

- The **Education (Pre-primary, primary, post-primary) Act** 2008 amends, consolidates and streamlines the existing laws relating to the development and regulation of education and training, repeals the former Education Act and provides for other related matters. The 2008 Act states that:
  1. Provision of education and training to the child shall be a joint responsibility of the State, the parent or guardian and other stakeholders.
  2. Basic education shall be provided to and enjoyed as a right by all persons.
  3. Financing of education shall be through fees, grants, donations, training levies, education tax, and any other means as deemed appropriate by Government.
  4. Religious studies shall form part of the curriculum in primary and post primary schools;[5]

- The **Policy on Special Needs and Inclusive Education,** 2011, seeks to mitigate factors that form barriers to children's participation in learning and development. These may arise from both the individual learners (e.g. physical or mental disability) and factors influenced by the environment (e.g. inadequate sanitary provision);[6]

- The **Gender Policy in Education and Training**

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[4] Scoring in the PLE is reversed; the highest score a learner can attain in the Primary School Leaving Examination (PLE) is 4.
[5] http://planipolis.iiep.unesco.org/upload/Uganda/Uganda_EducationAct.pdf
[6] Government of Uganda 2011 Policy on Special Needs and Inclusive Education

3.2   The international education context

Uganda subscribes to the Millennium Development Goals and Education for All targets. In addition Uganda is a signatory to a series of international conventions. Those that are particularly relevant to education include:

- UN Declaration of Human Rights 1948 -particularly Article 26 (Right to Education)
- UN Convention on the Rights of the Child
- UN Convention on the Elimination of All Forms of Discrimination Against Women
- UN Convention on the Rights of Persons with Disabilities 2008.

3.3   Rationale for Lower Secondary Curriculum Reform

The national legal and policy framework, coupled with the commitments to international conventions, the Millennium Development Goals and Education for All targets, provides a clear rationale for a reformed curriculum. The rationale for lower secondary curriculum, assessment and examination reform was presented in the Roadmap for Reform document (2007)[7], it included a review of the perceived shortcomings of the existing curriculum and it outlind a range of the challenges to be overcome. These aspects were confirmed in the findings of the Curriculum Situational Analysis (2012).

The current lower secondary curriculum is regarded as good at addressing the needs of a small elite opting for further academic studies at the tertiary level. However, the existing focus results in unacceptably high failure rates, particularly in subjects such as Mathematics and Science, and especially in the multi-ability environment of universal secondary education.

A radical shift within the secondary education sub-sector is required. The shift implies a move from a curriculum that was initially designed for an elite minority of learners bound for positions within the public service, to a curriculum that allows every learner to develop understandings and skills according to his or her ability. The reformed curriculum will provide each and every learner an opportunity to acquire the knowledge, understandings, skills and attitudes as envisaged in the 1992 White Paper, and to achieve appropriate recognition for their attainment during their time in school.

The current Education Sector Strategic Plan (2009 – 2018) sets out strategies to improve the quality and relevance of secondary education. The ESSP's sub-objective 2.2[8] is to ensure that "Post-primary students [are] prepared to enter the workforce and higher education". To achieve this objective, one of the Ministry's strategies is to revise the curriculum and improve instruction and assessment.

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[7] Clegg, A., Bregman, J. Andand Ottevanger, W. 2007 Uganda Secondary Education and Training: Curriculum, Assessment and Examination: Roadmap for Reform

[8] Education Sector Strategic Plan (2009-2018) (check dates!)

In order to achieve this objective, the ESSP outlines the following strategy:

"Give highest priority to competencies for the workforce and further education

If Uganda is to transform its subsistence economy into modern agriculture, industrial, service, and public sectors, most of the population will eventually need competencies with broad application. They will need the ability to:

>   *(i) Communicate effectively both verbally and in writing;*
>   *(ii) Follow written instructions (e.g. in manuals and diagrams) that assume an understanding of abstract concepts;*
>   *(iii) Use advanced Mathematics, including fractions, decimals and line graphs;*
>   *(iv) Solve semi-structured problems by formulating and testing hypotheses, and*
>   *(v) Understand how computers work[9].*

They will need to understand the phenomena of the natural and physical environment.

These competencies are only a small part of both the current general secondary and Business, Technical and Vocational Education and Training (BTVET) curricula, and are not the focus of exams. Over the term of the revised ESSP, the Ministry will move toward a four-year program (S1-S4) for all participants at the post-primary level that emphasises competencies for the workforce and further education. By 2015, it will cease to offer parallel tracks of academic and vocational curricula. This is [a] deliberate move by the sector towards creating a firm basis for acquisition of productive and employable knowledge and skills that the country needs for creating a self-sustaining independent and integrated national economy."

The rationale for the reform is further supported by the aims and objectives of Secondary Education, as set out in the 1992 Government White Paper. The aims of secondary education are to:

-   Instil and promote national unity, an understanding of the social and civic responsibilities, strong love and care for others and respect for public property, as well as an appreciation of international relations and beneficial international co-operation;
-   Promote an appreciation and understanding of the cultural heritage of Uganda including its languages;
-   Impart and promote a sense of self discipline, ethical and spiritual values, personal and collective responsibility and initiative;

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[9] It is proposed that a better and more realistic objective would be '*Be literate in information and communications technology*'

- Enable individuals to acquire and develop knowledge and an understanding of emerging needs of society and the economy;
- Provide up-date and comprehensive knowledge in theoretical and practical aspects of innovative production, modern management methods in the field of commerce and industry and their application in the context of socio-economic development of Uganda;
- Enable individuals to develop basic scientific, technological, technical, agricultural and commercial skills required for self employment;
- Enable individuals to develop personal skills of problem solving, information gathering and interpretation, independent reading and writing, self improvement through learning and development of social, physical and leadership skills such as are obtained through games, sports, societies and clubs;
- Lay the foundation for further education;
- Enable the individual to apply acquired skills in solving problems of community, and to develop a strong sense of constructive and beneficial belonging to that community;
- Instil positive attitudes towards productive work and strong respect for the dignity of labour and those who engage in productive labour activities;
- Develop a positive attitude towards learning as a lifelong process.

The aims and objectives of secondary education are highly relevant in today's world. To implement the ESSP strategy, MOES is proposing radical changes to the lower secondary school curriculum. The revised curriculum will attempt to equip every learner with the knowledge, understandings, skills and values to achieve the aims and objectives set out above and to play a role in assisting Uganda to transform from a peasant society to a prosperous country within thirty years.[10]

The ESSP further outlines what the shift implies:

"This shift will necessitate a sweeping revision of the general secondary curriculum, away from strictly academic learning objectives that are thought to prepare students for erudite higher education and toward a set of competencies that serve both those who continue their education after S4 and those who choose to enter the workforce. The new curriculum will enable learners to acquire specific vocational skills once they enter the world of work. This is not meant to "vocationalise" the post-primary curriculum by adding training for specific vocations. The new curriculum will help learners make informed decisions as citizens and family members, and it will give those who continue with their education, either immediately in S5 or later in life, the learning skills they need to think critically and study efficiently."[11]

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[10] The vision as set out in the National Development Plan 2010-2015
[11] ESSP 2007-2015

"The ESSP calls for reducing students' course loads from 18 to five or six, including required core courses and electives, and ultimately rationally reducing the curriculum menu through integration and merging of subjects. Over the long term, students will concentrate on subjects that are critical to achieving the competencies they require: Mathematics, Science, technology, communication, and social studies. Their course load will be reduced so that they have steady exposure to these subjects each day and throughout the year. This can be achieved over the long term by integrating the critical subject matter of many courses into fewer courses. For example, a course in life Sciences and a course in physical Sciences can incorporate the subject matter of health, HIV and AIDS prevention, agriculture practices, and environmental studies as practical applications of basic competencies in the scientific approach to problem-solving." [12]

3.4   Lower Secondary Curriculum Mission

The reformed curriculum will aim to produce graduates who are able to participate in the technology-driven global economy. This requires graduates with science and technology skills, and values which include increased awareness of the HIV and AIDS and other health risks, democratic values, respect for democracy, equality, race, gender, disability, human dignity, culture, nation, life and social justice. It requires them to have the ability to and participate in economic and social development. A balanced set of understandings, skills and values will enable young people to solve problems in their families and communities, and operate effectively at national and global levels. The acquisition of these should spiral through the programmes of study, so that learners who decide to opt out of formal education at any stage are able to show evidence that they have reached stated levels of competence.

The new curriculum will encourage schools to provide learners with increased opportunities to build work-related knowledge, experience and skills. Generic skills will be integrated throughout the curriculum. These are detailed in Section 7.

The Curriculum Framework proposes eight Learning Areas. The learning associated with each area is part of a broad, general education and lays a foundation for later specialisation.

The thrust of the programmes of study in the various Learning Areas will be experiential, calling for a learner-centred approach, appropriate to the demands of resource constraints, and high learner/teacher ratios. Teachers will be expected to make a pedagogical shift from the 'knowledge-transmission' mode, currently the norm, to a more 'active-learning' approach. Learners will take more control of their own learning, by sharing the use of appropriately-designed textbooks and accessing multimedia content where available.

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[12] ESSP 2007-2015

The sequences of understandings, concepts and skills of the Learning Areas will be designed to accommodate the expectations of the average learner, the lower ability learner, and the above-average learner. The assessment framework will be designed to provide opportunities for learners of varying abilities to achieve appropriate performance levels.

It is expected that the programmes of study will offer a range of alternative learning scenarios, so that learners in locations with very different characteristics can expect to enjoy similar learning experiences. They should achieve the same learning outcomes with resources from their own environments. The learning time required by the core programmes of study, with extended programme sections for the higher ability learners, will be pegged at levels similar to international norms for the same age group (Levels 1 to 4 of secondary sector). The international average time for a learning week is between 1520 to 1600 minutes (or between 38 to 40 periods of 40 minutes each).

The Curriculum, Assessment and Examination reform programme is one element of a wide-ranging and far-reaching post-primary education and training initiative. A successful outcome of the process would impact on generations of learners for many years into the future, initiate substantial changes to the experiences of all learners, and revolutionise the skills acquisition of the country's youth.

 The country's vision for the lower secondary curriculum can be summarised in this statement, derived from the underlying philosophy of secondary education for a modern Uganda:

A holistic education for personal and national development

4.   Curriculum principles and values

Uganda's 1995 Constitution sets out the following duties and obligations for its citizens:

a) To be patriotic and loyal to Uganda and to promote its well-being;

b) To engage in gainful work for the good of that citizen, the family, the common good and to contribute to national development;

c) To contribute to the well-being of the community where that citizen lives;

d) To promote responsible parenthood;

e) To foster national unity and live in harmony with others;

f) To promote democracy and the rule of law; and

g) To acquaint himself or herself with the provisions of the Constitution and to uphold and defend the Constitution and the law.[13]

These and other government laws and policies inform curriculum processes. The agreed curriculum principles and values were developed through a process of research, consensus-building and nation-wide consultations. As presented in Section 3, the process involved reviewing the Constitution of Uganda, in addition to national development plans, education sector plans, reports on the Uganda secondary education sub-system, and global sources, such as the Millennium Development Goals (MDGs). The findings contributed to the determination of the set of values that should be at the heart of the education experience for the country's young people.

The principles on which the Lower Secondary curriculum is based are:

Forging national unity, peace and harmony

The curriculum will instil and promote a feeling of national unity in all learners. This includes an understanding of their social and civic responsibilities, strong love and care for others and respect for public property, and the ability to live together in peace and harmony, sharing common values and aspirations. The curriculum will develop positive attitudes for the creation of peace and the appreciation of living harmoniously in a multi-ethnic diverse community. Following from this, the curriculum will promote unity between various ethnic groups.

Participation in the building of a democratic society

The learners will understand and participate effectively in democratic decision-making processes and civic life and the development of democratic principles, practices and institutions. These aspects include social integration of the elite with the masses, removal of regional imbalances and economic disparities and the

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[13] http://jurisafrica.org/docs/constitutions/CONSTITUTION%20OF%20THE%20REPUBLIC%20OF%20UGANDA.pdf

promotion of human rights, unity, liberty, social justice and democracy. The curriculum will enable learners to contribute to the development of culture in Uganda, to understand and appreciate cultural diversity, and to consider the rights of others when looking to meet their individual needs. The learners will value diversity and understand the interdependence of different value systems in order to contribute to a more inclusive society. Following this guiding principle includes the promotion of equality of opportunity for males and females, and the integration of people with special needs in education and work.

Guaranteeing fundamental human rights

All learners will understand and appreciate the importance of fundamental human rights of all citizens. This includes the provision of shelter, clothing, adequate food, education, health care, freedom of expression and communication, the citizen's right to property and to control adequately and benefit from the products of their labour, elimination of lawlessness, personal security, and rule of law for all citizens.

Participating in the sustainable socio-economic development of the country

Learners will acquire productive skills, oriented to the improvement of the daily lives of the people. Such skills will also contribute to the development of the national economy in an integrated and self-sustaining manner. This includes environmental awareness and the development of an environmentally sustainable society. The learners will have values needed to ensure that the environment is respected and sustained; a respect and concern for the natural and cultural environments and a commitment to regenerative and sustainable resource use through the application of appropriate technologies.

Upholding and maintenance of national independence and patriotic feeling

This includes the development of a sense of love for all citizens, a feeling of patriotism in the citizens as well as readiness to make important sacrifices in defence of Uganda's unity and sovereignty. It will also inculcate a sense of service, duty and leadership for participation in civic, social and national affairs through group activities in education institutions and community. The curriculum will promote understanding and appreciation of the value of national unity, patriotism and cultural heritage, with due consideration of international relations and beneficial interdependence and international co-operation.

Promoting moral, ethical and cultural values

This implies the promotion of values such as honesty, sense of responsibility, integrity in the use of public funds and property, love for productive and constructive work and social responsibility towards other individuals, family life, the community and the nation as a whole. The curriculum will promote an appreciation and understanding of the cultural heritage of Uganda including its languages.

Establishing and maintaining relationships

Learners will have respect and concern for others and their rights, resulting in sensitivity to and concern for the well-being of others, respect for others, appreciation of the importance of learning from and working

with others and constructive ways of managing conflict. Learners will work selflessly on a co-operative basis for the good of all rather than for narrow self-interests. Learners will respect other peoples' religions, beliefs, cultures and ways of life. Learners will value equity and enable both sexes and people with special needs to participate equally and fully in all spheres of society and all fields of employment.

Creating a productive society

The curriculum will instil positive values and attitudes towards productive work and a strong respect for the dignity of labour. This will lay a solid foundation for a creative, meaningful and productive adult life based on perseverance, reliability, accountability, self-reliance and entrepreneurship. The curriculum will develop enterprise skills for making a living through initiative and creativity. This will include the integration of Financial Education into the range of Generic Skills. Adequate financial skills are regarded as essential for productive participation in the economic life of society.

Developing a healthy society

Learners will acquire the values required for developing a healthy society – that is, the development of attitudes, practices, knowledge and activities which promote the physical and mental health of self and others. The appropriate values and attitudes will also contribute to the desire within individuals for further education and training.

Developing the individual

The curriculum will facilitate the development of each learner to his/her full potential. This will promote self acceptance and respect of self, resulting in values, attitudes and actions which develop each person's unique potential – physical, emotional, aesthetic, spiritual, intellectual, moral and social.

Lifelong learning

The lower secondary school curriculum will lay the foundations on which lifelong learning, in both academic and technical spheres can flourish. It will inculcate a love of learning and an understanding that learning is not confined to the school environment. Learners will see that learning is a continuous process in response to an ever-changing environment and the introduction of new technologies and challenges.

Table 4.1: Contribution of Learning Areas to the Values

Value/ Learning Area	CA	Lg	LE	M	RE	Sc	SS	TE
Peaceful and harmonious	✔	✔	✔	✔	✔	✔	✔	✔
Integrity and honesty	✔	✔	✔	✔	✔	✔	✔	✔
Patriotism	✔	✔		✔	✔	✔	✔	
Positive attitude towards work	✔	✔	✔	✔	✔	✔	✔	✔
Respect for human rights			✔	✔	✔	✔	✔	
Tolerance of difference			✔		✔	✔	✔	

The curriculum principles and values are at the heart of the lower secondary curriculum as shown in Figure 6.1.

Although the curriculum is structured into Learning Areas, each with its own syllabus, all syllabuses are being written with the key guiding principles in mind. Each syllabus contains a list of ways in which that LA contributes to the principles. Similarly, all textbooks will be written with these principles as guidelines. All learning materials will make contributions to the principles.

Values

Peaceful and harmonious

Integrity and honesty

Patriotism

Positive attitude to work

Respect for human rights

Tolerance of difference

5. Key Learning Outcomes of the Lower Secondary Curriculum

The Key Learning Outcomes (KLO), which all learners will be expected to achieve, derive from the set of guiding principles and values presented in the previous section. These underpin the lower secondary curriculum.

The KLOs describe what all learners in all Learning Areas should know, understand, value and be able to do as a result of following the Learning Area programmes of study. The KLOs are an overarching statement of the knowledge, understanding, skills, attitudes, and values which all learners should acquire during the lower secondary learning experience. Each of the four KLOs has a number of indicators which help to explain what it means and provides a means for measuring learners' progress towards it.

The KLOs can be achieved by all learners, albeit to different levels of attainment. They accommodate the wide range of abilities and the special needs of all learners. The curriculum framework and the KLOs recognise and value the different intelligences, knowledge and experiences of different learners. They accommodate diversity in terms of culture, values and beliefs, gender, learning differences and social background. Learners with disabilities and/or learning difficulties should, as far as possible, be expected to participate. Special provisions should be provided for them where necessary. There should be mechanisms for the early diagnosis of learning difficulties. NCDC will prepare Guidelines for district and school stakeholders to move towards a more inclusive approach in all lower secondary schools.

The KLOs require the development of Generic Skills (GS). The achievement of both KLOs and GS requires learning experiences which have a practical focus and are oriented towards real life.

5.1 The Key Learning Outcomes

The lower secondary curriculum should contribute to learners to becoming **self-assured individuals**, who take pride in being **responsible and patriotic citizens**; who have a **passion for life-long learning;** and who possess abilities and a willingness to make a **positive contribution to national development**.

Table 5.1: Lower Secondary Curriculum Key Learning Outcomes

KLO	Learner is a self-assured individual	Learner is a responsible and patriotic citizen	Learner has a passion for life-long learning	Learner makes a positive contribution to national development
Indicators	• Demonstrates self-motivation, self-management and self-esteem • Knows own preferences, strengths and limitations • Uses appropriate language and adjusts behaviour according to social situations • Is able to relate to a range of personality types	• Cherishes the values promoted in the curriculum • Promotes the development of indigenous cultures and languages and appreciates diversity, equity and inclusiveness • Applies environmental and health awareness when making decisions for themselves and their community • Is positive in their own identity as individuals and global citizens	• Can plan, reflect and direct their own learning • Actively seeks lifelong learning opportunities for personal and professional development	• Has acquired and can apply the Generic Skills • Knows own abilities and makes future plans accordingly • Demonstrates knowledge and an understanding of the emerging needs of society and the economy • Understands how to design, make and critically evaluate products and processes to address needs • Appreciates the physical, biological and technological world and makes informed decisions about sustainable development and its impact on people and the environment • Is motivated to contribute to the wellbeing of themselves, their community and the nation

These KLOs promote the development of skills. Learner achievement of these is predicated on learning experiences which have a practical focus and are oriented towards real life. Learners are provided with learning opportunities which will enable them to live in harmony with others, and with their environment. The learning opportunities will prepare them for adult life, for making a living and for further education and training.

5.2   Critical Cross-Cutting Challenges and Issues

There are cross cutting issues which should be incorporated in all learning activities in each of the Learning Areas. These issues provide appropriate opportunities for the development of the generic skills described in Section 7.

All Learning Areas should incorporate the interplay between these cross cutting issues, KLOs, Generic Skills (GS) and values. The Learning Area statements will incorporate these aspects.

The critical cross-cutting challenges are:

Environmental awareness: The curriculum supports the need for action to sustain the Ugandan and global natural environment and resources. The curriculum develops learners' awareness and concern for protection of the environment and climate change;

Health awareness: The curriculum promotes awareness and understanding of the major health challenges facing Uganda and the action required for their mitigation. These include HIV and AIDS prevention, eradication of malaria and other communicable diseases, provision of adequate sanitation and clean water, development of appropriate hygiene standards and reproductive health issues;

Diversity and inclusion: Learners should understand the challenges relating to the need to accept and recognise diversity. This includes gender mainstreaming and the integration of people with special needs;

Socio-economic challenges: The curriculum will provide learners with knowledge, understanding and skills for dealing with major challenges facing Uganda, including poverty, village gardening inefficiency, energy generation and supply, a high fertility level and consequent rapid population growth, and unemployment.

Citizenship

Citizenship education aims to develop the learners' capacity to participate in a fair and inclusive society. The curriculum gives opportunities for learners to explore the core citizenship concepts of diversity/interdependence, equality/justice, democracy/active participation, right to be heard and fair treatment. Within these, learning activities should deal with aspects such as community identity, prejudice, discrimination, conflict, reconciliation, the 'common good', human dignity and rights, equality, sustainable development, authority and consent, participation and voting, media influence and the rule of law.

Cross-cutting problems and challenges demand that learners have the opportunity to learn through activities which are learner-centred. The period of a young person's education, from the early years, through the compulsory education cycle, coincides with a period of rapid personal development. This lays the foundations of skills for life and work. What young people learn and how they learn have a major bearing on wider life outcomes, including employability and participation in society.

6. The Lower Secondary Curriculum Framework

6.1 Re-orienting general education for economic and social development

There are three aspects of learner development that the lower secondary curriculum engages with. These are:development as an individual; development as a contributor to society; and development as a contributor to the economy.

These are of course interlinked, and various elements of the reformed curriculum make contributions to these aspects. However, the third aspect, the educated person's contribution to the economy, is seen as crucially important to Uganda's future prosperity, at this time. It is essential that these individual contributions are sustainable and ensure protection and conservation of the environment.

Secondary education graduates are one of the key ingredients needed to build and expand human capital for economic and social development. A skilled and educated workforce is essential for productivity and sustainable economic growth. Skilled workers are potentially more productive in their own right. The skill level of the workforce is likely to make capital investment more effective. It will also enhance the ability of employers to adopt innovative work practices.

The reformed curriculum aims at producing a graduate who is able to participate in the technology-driven global economy. It will help to deliver increased opportunities for learners by incorporating learning about the world of work and learning about the skills needed in the world of work. This emphasis must be an integral part of the curriculum and not a separate experience. In this way, the acquisition of generic skills for productive and rewarding living, the learning of employability skills, participation in vocational training and academic learning and certification will ultimately enjoy parity of esteem. The new curriculum will encourage schools to provide learners with increased opportunities to build work related knowledge, experience and skills, through a range of routes, including an expansion in school-college partnerships.

6.2 The Ugandan Labour Market's needs

Employers in the private sector are an important link between the skills of the population and economic performance. If the country is to meet its economic growth goals, then the skills businesses require must be available. Enterprises need to make the best possible use of those skills to help them exploit profitable opportunities for growth.

In February 2012, NCDC conducted a survey of 141 enterprises across the country to ascertain the range of skills that employers wanted graduates of secondary school to have and inform the development of the curriculum framework. The bullets below present a list of competencies that employers said they look for when hiring new recruits. The competencies cluster into three groups:

- **Time management, trainability, team player, task oriented and oral and written communication.** More than 80 percent of the firms responded that they were looking for these types of skills among new recruits.

- **Organisational skills, creativity, literacy and numeracy.** Between 60 and 80 percent of the firms expressed the view that these skills were important for hiring new recruits.

- **Managerial, entrepreneurial, ICT and investigative skills.** Approximately 50% of firms stated that these four skills were important.

The survey showed that employers expect potential employees to have skills that, in their view, they should have learned at school. The findings showed significant percentages of recruits who do not meet employers' essential skills criteria.

6.3   International perspectives on generic skills

Recent research and publications on generic 21st century skills have stressed the need for learners to develop a range of generic skills, essential for success in life and work. The 2012 Education for All Global Monitoring Report stresses the importance of secondary education in extending and consolidating the basic skills learned in primary school. In order to generate the skills needed by a 21st century workforce, school curricula in many countries are promoting learning styles which aim to build the key metacognitive abilities and skills necessitated by changing workplace needs/environments and the changing roles of individuals in society.

Interactive skills (the ability to effectively communicate with, and collaborate with others) are very important for success in life. These 'softer' skills needs depend on type of job, level of responsibility and organisational culture. They include:
- time management;
- planning and organising;
- oral and written communication skills;
- the ability to solve problems;
- being able to undertake tasks or make submissions at short notice;
- the ability to work with others to achieve common goals;

- the ability to think critically and creatively;
- the ability to learn and to continue learning;
- the ability to take responsibility for professional development.[14]

A plethora of terms are applied to this collection of essential capabilities. They are variously referred to as core skills, key competences, core competences, essential learning outcomes, generic skills, general capabilities, key skills, depending on which country's curriculum documentation is referred to. In this statement of the Lower Secondary Curriculum Framework, the term "generic skills" is used. This connotes two important notions. The first is that they cut across all artificial subject boundaries. The second is that learners acquire generic skills in parallel to learning academic and technical knowledge and skills. Lastly, generic skills will be useful for all other learning, and for effective functioning in today's world.

The range of Generic Skills enables young people to become twenty-first century learners – people that are literate, numerate, able to use Information and Communication Technology (ICT), critical thinkers, problem solvers, creative, good communicators and able to work well with others. They develop into individuals who can:

- learn throughout their lives;
- manage their own wellbeing;
- relate well to others;
- make informed decisions about their lives;
- relate to and communicate across cultures;
- become citizens who behave with ethical integrity;
- work for the common good;
- act with responsibility at local, regional and global levels.

6.4 Profile of knowledge, attitudes and skills for the lower secondary curriculum

Using the findings of the February 2012 survey and an audit of Generic Skills across several countries, NCDC has built a tentative profile of knowledge, attitudes and skills that should be an integral element of the lower secondary curriculum. The generic competencies identified by employers and recommended by the Government White Paper (1992) have been embedded in the sets of generic skills (see section 7) which underpin the reformed curriculum. The Government White Paper (1992) recommended the scientific and technological orientation of education and the development of the ability to use data and information for decision- making.

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[14] The Scottish Government 2007 Skills for Scotland: A Lifelong Skills Strategy, Edinburgh
http://www.scotland.gov.uk/Resource/Doc/197204/0052752.pdf

Table 6.1 below represents an attempt to fuse the survey findings and the expectations, as derived from the comparative country research. The following profile emerges:

Table 6.1: Profile of knowledge, attitudes and skills for the lower secondary curriculum

Knowledge and understanding	Attitudes	Skills
- Can read and write - Is numerate - Can measure and convert units of measurement - ICT knowledge sufficient to apply to real-life situations - Has mastered quantitative and spatial concepts - Can recognise the need for information - Can identify patterns and relationships - Can visualise scenarios, and think laterally - Has awareness of HIV and AIDS and other health risks	- Interacts positively with others - Works in a team - Follows instructions - Meets deadlines - Works independently - Self-driven - Offers solutions to problems - Holds democratic values - Has respect for democracy, equality, race, gender, disability, human dignity, culture, nation, life and social justice	- Has ways to communicate ideas - Can prepare a written report - Makes measurements in a range of contexts - Interprets numerical and graphical information - Presents numerical and graphical information - Can learn independently - Sets targets - Identifies problems - Learns on the job - Creative - Expresses themselves orally - Has practical skills - Has Science and technology skills - Can apply classroom knowledge to real life - Able to and participate in economic and social development - Able to solve problems in their families, communities and in the country

6.5   A structure for the reformed lower secondary curriculum

The shape of an appropriate basic education at the lower secondary level is conceptualised as a set of eight Learning Areas. The acquisition of a range of generic skills, and the assimilation of a set of agreed values, are the integrating dimensions for learning within the Learning Areas.

Figure 6.1 presents the proposed shape of the curriculum framework. It is depicted as a 'wheel' of Learning Areas. At the 'hub' there are six sets of Values and eight baskets of Generic Skills.

Figure 6.1: Lower Secondary Curriculum Framework
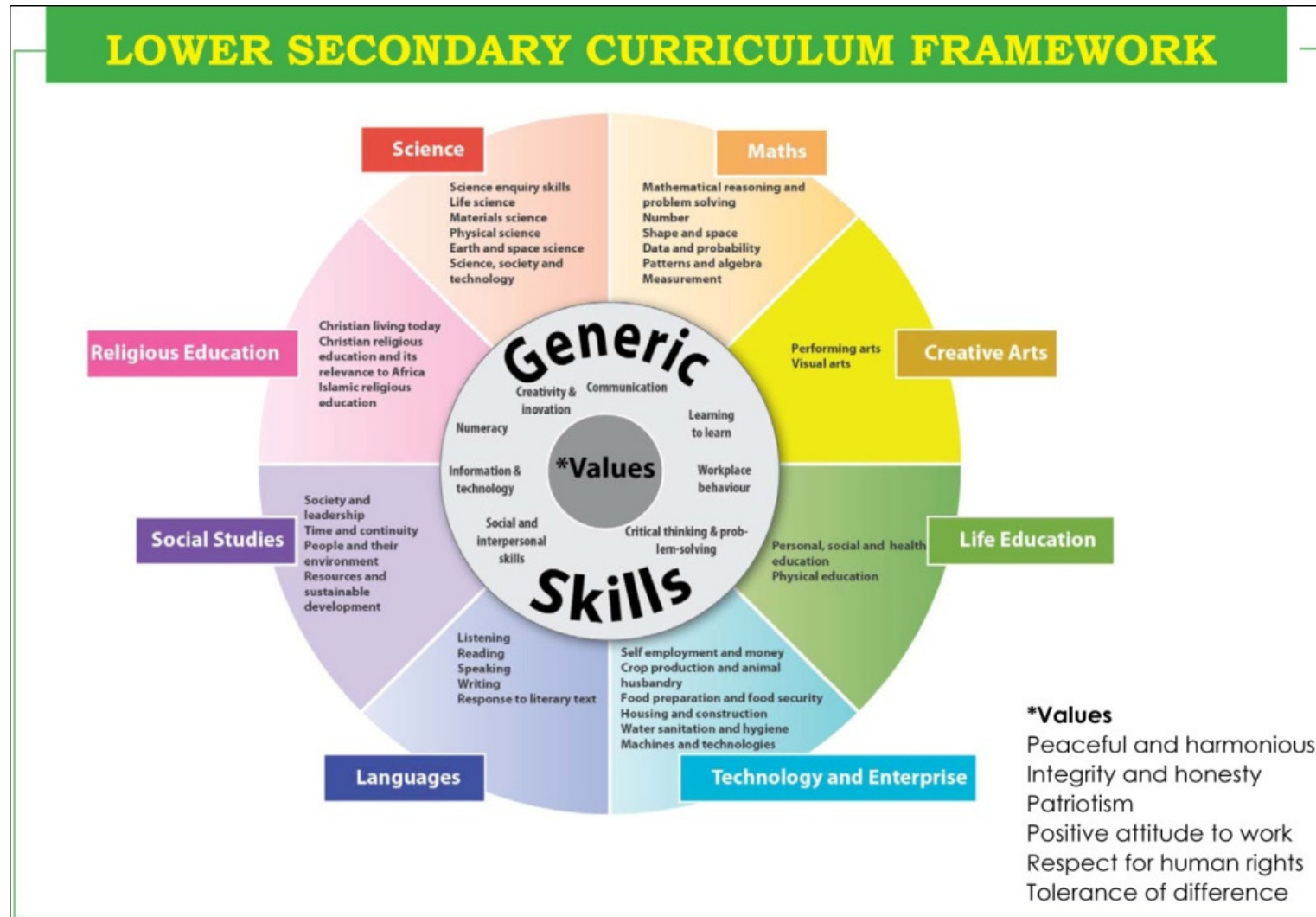
The generic skills hub has eight baskets of generic skills, and a set of values. The baskets of skills consolidate the knowledge, attitudes and skills profile shown above. Section 7 deals with the generic skills and values in detail.

6.6   The eight Learning Areas

This Framework proposes eight Learning Areas:

> ***Creative Arts***
> ***Languages***
> ***Life Education***
> ***Mathematics***
> ***Religious Education***
> ***Science***
> ***Social Studies***
> ***Technology and Enterprise***

All eight Learning Areas will be compulsory. The learning associated with each Learning Area is part of a broad, general education and lays a foundation for later specialisation. This learning is valuable in itself and valuable for the pathways it opens to other learning. Each Learning Area has several strands. The Strands are the organising structure for the range of concepts, understandings, skills, attitudes and values that a Learning Area deals with. The strands of the eight Learning Areas are shown in Figure 6.1. Each strand of a Learning Area deals with a set of concepts, understandings, skills and values that have inherent philosophical linkages. For example, the Social Studies strand, Time and Continuity, deals with the progression of people through time, and helps learners develop the skills of historical enquiry. Another strand of Social Studies, People and their Environment, deals with how people function within their physical environments to make homes, meet needs, and organise movement. There are linkages across these strands. Understandings from the Time and Continuity strand show how people change their ways of operating within their environments, across generations. In this way, a Learning Area has philosophical coherence.

The concept of 'Learning Areas' promotes a cross-curricular learning and teaching approach. Learners are enabled to recognise and apply the relationships between the concepts and understandings within a single Learning Area and across the eight Learning Areas. This will provide learners with the knowledge, understandings, skills, values and attitudes to:

- Solve problems in their communities, families and work through a scientific problem solving approach which integrates critical, creative and innovative thinking, effective communication, a high

> degree of numeracy, use of appropriate technology, social and interpersonal skills, self motivation and management and the observation of the agreed values;

- Participate effectively in political, social, economic, scientific and technological development of their families, communities and the country at large;

- Effectively contribute to the world of making a living, work in paid employment, and/or progress to BTVET institutions, tertiary and higher education and training.

The Learning Areas are presented as distinct for the purposes of the explanatory graphic. However, all learning should make use of the natural connections that exist between Learning Areas and that link Learning Areas to the values and generic skills.

Links between Learning Areas are accommodated. This provides for a balanced study programme, whereby different Learning Areas contribute to overall learning outcomes. Learners' knowledge and understanding is acquired in relation to major social, political, and economic developments. Examples are:

- Through studies of Uganda and the rest of Africa in Social Studies, learners grasp the significance of mineral resource exploitation, and the impact of oil discovery on Uganda.
- In the Science Learning Area, they come to understand, through studies within the Earth and Space strand, why western Uganda has reserves of oil and gas, and ore deposits;
- The Science Learning Area deals with understandings which are important for health promotion, HIV and AIDS prevention, agricultural practices, and environmental studies; these have practical application within an overall scientific approach to problem-solving;
- Financial capability developed through work in the Number and Measurement strands of the Mathematics Learning Area, coupled with studies related to money and finance within the Technology and Enterprise Learning Area, and aspects of personal finance responsibility within the Life Education Learning Area, positions learners to make well-informed financial decisions throughout their lives, as well as to have the potential to be entrepreneurial in an effective way, thus making a living.

The very important aspect of 'learning pre-requisites' is also an integral element of the design. This implies that analysis across Learning Areas is essential, as programmes of study are elaborated in the syllabus. For instance, if the capability of interpreting data presented as a pie graph is required in Senior 3 Social Studies, then the necessary understandings and skills which act as enabling outcomes for the data interpretation must have been already acquired by the learner within the Data and Probability strand of the Mathematics programme of study. There are numerous situations across the curriculum where such pre-requisite links must be indicated.

The sequencing of the curriculum across the four years of the Lower Secondary cycle must acknowledge that a high proportion of the learners who enter Senior 1 may not remain until Senior 4. Hence, the curriculum is spiralled through the years, so that understandings and skills are developed sequentially. Ultimately learner achievement at a point in the cycle could be identified and described, with reference to a commonly understood set of learning outcomes and related evidence of achievement statements. Such descriptors would provide the basis for giving recognition for the level of competence acquired. Thus, a learner would take away from his/her school experience a statement of achievement against an agreed set criteria. This criterion-referenced approach to learner assessment is dealt with in more detail at Section 12.

The acquisition of generic skills is incorporated into the learning in the eight Learning Areas. Learners should understand why these skills are important for the transition to making a living effectively, to the workplace, to post- school skills training, or to Senior 5 in Upper Secondary school. They should be acquired in a work-related context.

7. What learners should learn - Generic skills

The Generic Skills encompass the knowledge, skills and behaviours that will assist young people to live and work successfully in the twenty-first century. Together with the understandings, skills and values acquired through the Learning Areas, and from the cross-cutting curriculum aspects, these Generic Skills contribute to several of the Key Learning Outcomes - sense of identity and wellbeing, being connected with and contributing to their world, and having the confidence to be independent learners and effective communicators.

Generic Skills comprise an integrated and interconnected set of knowledge, attitudes and skills that learners develop and use in their learning across the curriculum, in co-curricular programs and in their lives outside school. When acquired in Learning Area contexts, Generic Skills enhance and complement each other. For example, learners require literacy skills and ICT capability to communicate effectively across all Learning Areas. They apply intercultural understanding and personal and social capability when they challenge stereotypes and prejudice in texts and during interactions with others.

Generic Skills are at the heart of the curriculum. These skills should be acquired by all learners within the programmes of study of all Learning Areas. Competence in them will facilitate transition to making a living effectively, to the world of paid employment or to TVET programmes. They will facilitate progression to tertiary and higher education institutions. This is a significant component of a fundamental shift away from the traditional approach that focuses on mere acquisition of knowledge. To implement a curriculum that prioritises the acquisition of these skills, and which expects learners to demonstration competence in them, is a significant pedagogical challenge. Schools need to move towards providing an environment where cooperative learning, project-based learning, experiential learning in the real world, and practical problem-solving are at the heart of the learner experience.

For the purpose of this framework, 'Generic Skills' means the overlapping clusters of capabilities that are embraced by these categories. These are refered to as 'baskets.

Table 7.1 provides an overview of the eight generic skills baskets.

Table 7.1: Generic Skills in the curriculum

Communication	Social & inter-personal skills	Creativity and innovation	Critical thinking and problem-solving
▪ Is literate ▪ Communicates clearly	▪ Interacts effectively with others ▪ Works effectively in diverse teams[15] ▪ Guides and leads others ▪ Is responsible towards others	▪ Thinks creatively ▪ Works creatively with others ▪ Implements innovations	▪ Processes data ▪ Reasons effectively ▪ Thinks systematically ▪ Makes judgments and decisions ▪ Embraces innovation ▪ Solves problems systematically and cooperatively
Learning to learn	**Workplace behaviour**	**Numeracy**	**Information and technology**
▪ Uses study skills ▪ Knows oneself ▪ Adapts learning strategies ▪ Self-regulates ▪ Takes responsibility for developing own skills	▪ Produces quality work within agreed timescales ▪ Works independently, without the need for close supervision ▪ Can be relied upon to conform with workplace norms of time-keeping, attendance and following instructions ▪ Adapts to change ▪ Is flexible ▪ Manages goals and time ▪ Manages discrete pieces of work and tasks	▪ Uses functional Mathematics ▪ Has personal finance skills ▪ Has mathematical skills relevant to the workplace	▪ Applies Information and Communications Technology effectively ▪ Enhances appropriate, locally available technologies ▪ Uses digital media

For a detailed elaboration of the competencies that are subsumed within each of the eight generic skills baskets, refer to Appendix D.

Table 7.2 presents a matrix showing how each Learning Area will contribute to learners' development of the Generic Skills. The Learning Areas are abbreviated as follows:

- Creative Arts   - CA
- Languages   - Lg
- Life Education   - LE
- Mathematics   - Ma
- Religious Education   - RE
- Science   - Sc
- Social Studies   - SS
- Technology and Enterprise - TE

The table indicates how the Learning Areas give opportunities for the acquisition of the Generic Skills. It is clear that all Learning Areas contribute to most of the skills. For example, all LAs help learners to be

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[15] Teams may include children with special needs, children from other cultures or those with other beliefs or value systems

literate. However, Life Education and Languages are the LAs which allow the learners to "know oneself"; this is one of the Learning to Learn basket of skiills. Of these two LAs, it is Life Education which contributes most to the acquiaition of this skill. This is the meaning of the ✓ in the matrix below.

Table 7.2: Learning Areas contribution to learners' development of Generic Skills

	Learning Area	CA	Lg	LE	Ma	RE	Sc	SS	TE
GS Basket	**Skill**								
Communication	Is literate	✓	✓*	✓	✓	✓	✓	✓	✓
	Communicates clearly	✓	✓*	✓	✓	✓	✓	✓	✓
Social and inter-personal skills	Interacts effectively with others	✓	✓	✓	✓	✓		✓	✓
	Works effectively across diverse teams	✓	✓	✓*		✓*	✓	✓	✓
	Guides and leads others		✓	✓*		✓*	✓	✓	✓
	Is responsible towards others			✓*		✓*	✓	✓	✓
Creativity and innovation	Thinks creatively	✓*		✓	✓	✓	✓	✓	✓*
	Works creatively with others	✓*	✓	✓	✓		✓	✓	✓*
	Implements innovations	✓		✓	✓	✓	✓	✓	✓*
Critical thinking and problem-solving	Processes data				✓	✓	✓*	✓	✓
	Reasons effectively		✓	✓	✓	✓	✓*	✓	✓
	Thinks systematically	✓			✓	✓	✓*	✓	✓
	Makes judgments and decisions		✓	✓	✓	✓*	✓*	✓*	✓
	Embraces innovation	✓*		✓	✓		✓	✓	✓*
	Solves problems systematically and cooperatively	✓	✓	✓	✓	✓	✓	✓	✓
Learning to learn	Uses study skills	✓	✓	✓*	✓	✓	✓	✓	✓
	Knows oneself		✓	✓*		✓		✓	
	Adapts learning strategies			✓*	✓	✓			
	Self-regulates			✓*		✓			
	Takes responsibility for developing own skills	✓	✓	✓*	✓	✓	✓	✓	✓
Workplace behaviours	Produces quality work within agreed timescales	✓	✓	✓	✓	✓	✓	✓	✓*
	Works independently, without the need for close supervision	✓	✓	✓	✓	✓	✓	✓	✓*
	Can be relied upon to conform with workplace norms	✓	✓	✓	✓	✓	✓	✓	✓
	Adapts to change	✓	✓	✓	✓	✓	✓	✓	✓
	Is flexible	✓	✓	✓	✓	✓	✓	✓	✓
	Manages goals and time	✓	✓	✓	✓	✓	✓	✓	✓
	Manages discrete pieces of work and tasks	✓	✓		✓		✓	✓	✓*
Numeracy	Uses functional Mathematics				✓*		✓	✓	✓
	Has personal finance skills			✓	✓*				✓*
	Has mathematical skills relevant to the workplace				✓*		✓	✓	✓*
Information and Technology	Applies information and communication technology effectively	✓	✓	✓	✓		✓	✓	✓*
	Uses digital media	✓	✓	✓	✓		✓	✓	✓*
	Enhances appropriate, locally available technologies	✓		✓	✓		✓	✓	✓*

* Indicates that the Learning Area provides a strong opportunity for **acquiring** this generic skill

✓ Indicates that the Learning Area will help learners to **develop** this skill

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8.   What learners should learn - Learning Areas

At lower secondary school level, the curriculum will give opportunities for all learners to achieve the outcomes of a core programme of study in each of the eight Learning Areas. The lower secondary school population is characterised by a wide range of abilities. There is varying capacity to differentiate the learning experiences at school level, to ensure inclusivity. Consequently, this section is a statement of intention.

The Key Learning Outcomes for lower secondary schools have been presented in Section 5. Section 7 has presented the range of generic skills that all graduates of lower secondary school should acquire. These constitute an essential dimension of the core curriculum. Section 5 has set out the framework within which the generic skills and other learning outcomes will be acquired by learners.

This section provides an overview of the proposed eight Learning Areas for the lower secondary curriculum across the four years of study. These Learning Areas provide the range of learning experiences through which learners will achieve the learning outcomes. The learning outcomes comprise the range of understandings, the sets of process skills, the Generic Skills, and the values to which each Learning Area will contribute.

As explained in Section 6, the idea of a Learning Area offers an approach to acquiring knowledge, understanding, skills, values and attitudes that closely relates school learning to the learners' real life experiences. A Learning Area (LA) is essentially a coherent set of knowledge, understandings, skills and, values with a unifying philosophy. Thus, there is a basis in real life, and a theoretical justification for following the programme of study in the Learning Area. The expected learning outcomes of the programme of study of a Learning Area make a contribution to a range of the Key Learning Outcomes – as summarised in the table at the end of this section.

For purposes of presentation, and to expedite course planning, each Learning Area has a structure. Strands are the organising mechanism for presenting the expected learning of the Learning Area. Each strand deals with a set of concepts, understandings, skills values and attitudes that have inherent philosophical linkages. The Strand deals with closely related ideas. Within the structure of Strands, the range of expected learning is scoped and sequenced. Each LA has several organising strands, within which the expected learning is organised and sequenced. Each of these Strands appears in all four years of the course. This means that learners deal with different aspects of a strand in each year of study. Each strand of a Learning Area is a sequence of expected learning, allocated across the four years of the programme of study. Knowledge, understandings, skills and attitudes develop spirally throughout the programme of study.

Figure 8.1 on the following page depicts the structure of a Learning Area. The example is Social Studies. The example shows that there are four strands of study. These spiral through the four years of the Programme of Study. Different aspects of a Strand are dealt with in each year of the Programme of Study. The scope of each Strand is appropriate for the year level. Learner acquisition of Enquiry Skills and Values are integrated into the Programme of Study for each study year.

Figure 8.1: Structure of the Social Studies Learning Area

Strands
(Each strand has a Strand Statement – derived from the LA statement)

Year level statement

For each year of the Programme of Study, there is a year strand statement. This states the extent to which the learners are expected to progress within the strand, for the study year.

Learning Area Statement:
The study of people in relation to the societies in which they live and the natural and created environments.

People and their environment (PE)	Resources and sustainable development (RSD)	Society and leadership (SL)	Time and continuity (TC)
S1 PE statement	S1 RSD statement	S1 SL statement	S1 TC statement
S2 PE statement	S2 RSD statement	S2 SL statement	S2 TC statement
S3PE statement	S3 RSD statement	S3 SL statement	S3 TC statement
S4 PE statement	S4 RSD statement	S4 SL statement	S4 TC statement

Social Studies Enquiry Skills and Values are developed within the Programme of Study of each Strand

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The overview of the Learning Areas presented below is brief. It provides a digest of the curriculum experience for lower secondary school learners. The detail on the range of concepts, understandings, skills, and values unique to a given Learning Area is presented in the syllabus for each Learning Area – a separate document. The overview of each Learning Area presented here contains a skills section. From this, it is clear how each Learning Area provides opportunities to learners to acquire Generic Skills.

The textbooks and/or resource materials will be the delivery vehicles for the programme of study in each Learning Area. Through careful development, the learning materials will ensure learners acquire the generic skills and achieve the KLOs.

For each Learning Area, there is:
- a Rationale statement, which presents the philosophical argument for the LA;
- a list of the Strands within which the learning outcomes are structured;
- a summary of Learning Outcomes – categorised under 'understandings', 'skills', and 'values'.

A separate table indicates how the eight Learning Areas contribute to the achievement of the Key Learning Outcomes of the Lower Secondary School Curriculum.

Detail on the sequential development of the scope of a Learning Area, within a year-by-year programme of study, will be in the detailed syllabus for the Learning Area.

8.1   Creative Arts

Rationale

Creative Arts in the lower secondary school curriculum embrace a range of art forms that comprise dance, drama, music and the visual arts- all of which are inter-related. Each develops cognitive, affective and psychomotor domains. Music, dance, drama and visual arts all have a story to tell about the culture, custom and lifestyle of the people. In fact, arts record the unique customs and lifestyles in all their manifestations.

The term "Creative Arts" was chosen to represent the integrated arts that develop a creative mind in a cultural context. Learners should recognise that there are similarities in the way that artists work, whatever their particular art form. Discovering these ways helps learners to learn about the role that the arts play in their communities.

Uganda is noted for its cultural legacy and contributions to the development of the Arts. Creative Arts can provide the institutional framework for that legacy to be developed, fostered, and enhanced. Creative Arts is an important vehicle for transmitting a wide range of information to learners and to the public at large. It provides opportunities to underpin the national effort to promote Uganda's diverse culture through art competitions, dramatic presentations, and musical compositions on topical issues that directly or indirectly affect society.

Modernisation is bringing changes to Ugandan cultures. As part of the effort to preserve Ugandan cultures, it is important that culture be taught in conjunction with the related arts. In this way, learners appreciate the significance of the arts, as well as the artistic styles themselves. Art styles are practiced, and learners integrate their traditional methods and skills into modern Creative Arts styles.

Creative Arts recognises and encourages the importance of enhancing and creating visually pleasing environments. The development of murals, installations, sculptures, and other visually stimulating art forms in schools and in public/community spaces creates the ambience for a dynamic society. The cultural forms displayed through dance, music and drama add an unquantifiable dimension to any production, programme, and/or gathering/event.

Learning in the expressive arts helps learners develop their knowledge, understanding and appreciation of contemporary and historical arts within their own communities, within Uganda, and beyond. Children and young people will enjoy numerous and diverse opportunities to contribute to, reflect on and respond to the arts within their own and other cultures. The Creative Arts Learning Area will also engage learners in explorations of the expressive networks among the arts. This will enable learners to recognise and nurture their creative and aesthetic talents.

Learning Area organising principles

The programme of study for Creative Arts is structured around three organising principles:

> **Art Skills (creative inquiry):** Learners generate, appreciate and perform artworks that communicate ideas.

> **Response:** Learner use their critical analysis processes to respond to, reflect on, and interpret the Arts cultural activities of their society.

Art in society: Learners understand the role of the arts in society. They explore and manipulate materials, techniques, processes and technologies to design/ realise arts ideas drawn on experiences and knowledge of their environment/ culture in the past and present**.**

Strands

The strands of the Learning Area are:
- Performing Arts;
- Visual arts.

Learning Outcomes

One of the main purposes of learning in Creative Arts is to develop lifelong appreciation of, and participation in, expressive arts and cultural activities. The arts also contribute to the development of confident individuals and effective contributors. For this reason, in addition to the intended outcomes of learning, the learning outcome statements also present a range of experiences which provide opportunities for inspiration, enjoyment and performance.

Children and young people bring a range of different types and levels of experiences, gained within and beyond the life of the school. Through participation in the Creative Arts, learners:
- Develop their creativity, learn about their own identity, and develop self-awareness, self-confidence and a sense of well-being;
- Are introduced to ideas, techniques, skills and media to produce useful works that can have a civilising influence on society;
- Participate more fully in cultural life and other educational opportunities that improve social behaviour.

Learners enjoy activities that centre on expressing ideas, thoughts and feelings through creativity and self-expression. Development of skills is directly linked with opportunities for presenting and performing. Taken together, these experiences and outcomes represent a broad general education in the creative arts. Each learner will enjoy the opportunity to contribute to a public presentation or performance in visual arts, dance, drama or music, as a significant culmination of his or her broad general education.

At Senior 3 and Senior 4 levels, an elective strand provides a basis for more advanced study in the creative arts and further scope for depth, challenge, enjoyment, personalisation and choice. There will be scope to plan and organise different combinations of the experiences and outcomes, both within and between aspects of the Creative Arts, to meet the varied needs and interests of young people who choose to specialise in an aspect of Creative Arts.

Understandings

Learners **should understand**:
- The inspiration and power of the arts;
- Uganda's diverse and multicultural society through communication, understanding and appreciation of diversity and individual differences in society and the world;
- Culture in Uganda and the wider world;
- How to to be creative and to experience inspiration and enjoyment;
- How music works and build the capacity to enjoy music through listening to musical performances and commenting on them;
- Dance and their capacity to enjoy dance through evaluating performances and commenting on their work and the work of others;
- How to enjoy drama through evaluating technical aspects of drama and scripts, and commenting on their work and the work of others;
- The works of artists and designers.

Skills

Learners **should be able to:**
- explore a wide range of two- and three-dimensional media and technologies through practical activities, and create, express, and communicate ideas;
- develop skills and techniques that are relevant to specific art forms;
- develop skills in areas such as talking and working with others;
- create, perform and take part in dance;
- develop technical skills and quality of movement;
- use their imagination and skills to create and choreograph dance sequences;
- create, present and participate in acting and presenting of improvised and scripted drama
- explore real and imaginary situations;
- develop vocal and instrumental skills, explore sounds and musical concepts, and use their imagination and skills to create musical ideas and compositions;
- perform and create music;
- use ICT to realise or enhance composition and performance (where appropriate);
- develop, enhance and apply skills gained in the creative arts in a broad range of activities including role play, participation in whole school events, community events and outdoor learning;
- develop the important generic skills needed for researching, organising, observing, taking an Idea to a finished product, and for creative and critical thinking;

- present and perform, for example through preparation of artwork for display, presentation of a short improvised drama to members of the class or performance of dance or music to parents or in the community;
- contribute to a significant presentation (such as an exhibition) or performance in at least one area of creative arts;
- generate, appreciate and perform art works that communicate ideas through creative arts expression (arts in society), arts responses and creative inquiry.

Values

By engaging in experiences within the Creative Arts, learners will recognise and represent feelings and emotions, both their own and those of others. The Creative Arts contributes greatly to young people's mental, emotional, social and physical wellbeing. They give opportunities to be creative and to experience inspiration and enjoyment. The creative arts play a central role in shaping people's personal, social and cultural identity. Learning in the creative arts also plays an important role in supporting young people to recognise and value the variety and vitality of culture locally, nationally and globally.

Learners should **appreciate and value**:

- being creative and expressing themselves in different ways;
- experiencing enjoyment and contributing to other people's enjoyment through creative and expressive performance and presentation;
- aesthetic and cultural values, identities and ideas which, for some, is enhanced and enriched through partnerships with professional arts companies, creative adults and cultural organisations;
- advanced learning and future careers in creative arts.

8.2   Languages

Rationale

Language and literacy are of personal, social and economic importance. Our ability to use language lies at the centre of the development and expression of our emotions, our thinking, our learning and our sense of personal identity. Languages are a key aspect of our culture. Through our mother tongue, we gain access to the oral and literary heritage of our people. Learning a new language provides us not only with a means of communicating with people from other cultures but also with valuable insights which help us to appreciate our diversity. As we acquire communicative skills and competencies in other languages we simultaneously explore and reflect on our own personal world and our own culture. By reaching out, we also reach within. Studying a

range of languages fulfils the function of preparing young people to participate fully in social, cultural, political and economic life within national and international contexts.

Literacy is fundamental to all areas of learning, as it unlocks access to the wider curriculum. Being literate increases opportunities for individuals in all aspects of life, lays the foundations for lifelong learning and work, and contributes strongly to the development of all human capacities. These include the ability to apply knowledge about language. Young people need to be able to communicate effectively both face-to-face and in writing through an increasing range of media. Language learning contributes to the development of critical and creative thinking. It develops competence in listening and speaking, reading and writing. Learners acquire the personal, interpersonal and team-working skills which are so important in life and in the world of work.

Young people need to be able to listen, view and read for information and for personal interest and enjoyment. They also need to be able to work out what trust they should place on the information they receive and to identify when and how people are aiming to persuade or influence them.

English and Kiswahili will be compulsory languages. Learners may have the option of choosing to learn a local language or a foreign language, depending on their school.
Separate language frameworks and proficiency scales have been developed for English, Kiswahili, local languages and foreign languages. These are described below.

Strands
The common strands of the Languages Learning Area are:
- Personal
- Public
- Educational
- Occupational
- Functions and Competencies

Strands 1-4 are the four domains (or settings) in which secondary level learners operate. The fifth strand denotes common functions and competencies required of the learner at each stage: sounds, language structures/grammar, vocabulary/spelling, sociolinguistic and socio-cultural competencies.
The settings provide the situations in which lower secondary learners acquire language skills. They meet learners' personal communication needs, enable them to operate effectively in society at large, to progress through the educational system and to enter the world of work.

Learning Outcomes

(Common to all languages)

Understandings

Learners should understand:

General

- language is a day to day communication tool whose use is governed by social norms;
- how language use can have inclusive and exclusive social effects, and can empower or disempower people;
- language is a holistic set of linguistic and aesthetic content;
- language is a set of processes to produce and/or receive texts in relation to specific aspects of life;
- understand that language users need strategies with which to carry out tasks;
- language users develop their competence through use;
- each language has its own way of expressing meanings; each has intrinsic value and special significance for its users;
- learning foreign languages expands one's view of the world and opens up a whole range of new possibilities;
- learning one new language makes it easier to learn others.

Listening

- listening is different from hearing, and is purposeful and focused;
- effective listening is developed, not automatic;

Speaking

- listeners can form impressions of a speaker on their care for accuracy in pronunciation as well as his/her fluency.

Reading

- reading is necessary for personal growth;
- print and other media sources hide great treasure to be discovered only by reading/viewing them;
- effective learning of a language is integrated with appreciating the literature of the language;
- literature written in any language enriches our knowledge of that language;
- literary works can teach us about different cultures;
- evaluation of texts is influenced by one's personal value systems, the context and the purpose and mode of communication.

Writing

- readers can form impressions of a writer based on his/her care for accuracy in writing;
- effective communication requires use of correct language forms besides appropriate vocabulary and expressions;
- it is easier for users to correct errors in the written form of the language than in its spoken form;
- in order to persuade one's audience, the writer needs to make his/her own stand clear and appealing.

Skills

Note: In communicative language learning the following skills are integrated, although assessment of separate skills is possible even when the learner is engaged in a complex task*.*

Learners should be able to:

Listening

- understand spoken input and respond appropriately in a range of situations.

Speaking

- participate/interact actively and confidently in spoken language in a range of situations for different purposes.

Reading

- read various types of texts for a range of purposes and respond appropriately to the varied content in the text.

Writing

- write different types of texts for varied purposes and audiences in a range of contexts.

Language operations

- manipulate the structures, vocabulary and expressions of the language to communicate effectively in both the receptive and productive modes of the language.

Responding to literary texts

- appreciate a range of literary genres;
- derive pleasure from literary texts;

- explore and reflect on personal understanding of the world and significant human experience gained from interpreting various representations of life matters in texts;

Values

Learners should appreciate and value:

- effective communication, for which the language user needs functional competence in all four language skills; in the grammar of the language; and the ability to exploit these with respect for social and cultural norms;
- language as being at the centre of gainful learning in all the areas of the school curriculum;
- functional language competence for a meaningful, fulfilling and productive life after school;
- language acquisition as a complex organic process that enhances personal and social development.

Language Competence – proficiency levels

Note: In all languages there will be scope for differentiation of learning outcomes according to an individual's needs.

English

It is important for all learners to develop their English skills to their fullest potential, as it is the language of communication in all learning areas (with the exception of the other languages). English is an important international language, used widely not only in anglophone countries but also by millions of speakers of other languages as their common means of communication. English is also essential for learners who wish to continue their academic studies to a higher level.

In their English lessons learners will build on the skills acquired in their primary school to understand and participate in lengthier, more diverse and complex spoken communication. They will read for information and enjoyment and broaden and deepen their reading habit to include a range of different types of texts, both factual and imaginative. They will also practise different types of writing, both informal and formal and proofread their own written output.

It is expected that learners will reach the following levels of proficiency by the end of S4:

Learners will be able to:

- understand the main ideas of complex text on both concrete and abstract topics;

- interact with a degree of fluency and spontaneity that makes regular interaction English speakers from different backgrounds quite possible without strain for either party;
- produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options;
- appreciate short literary texts;
- identify with characters in fiction;
- recognise humour in song, poems, etc.

(In S3-4)

At S3 and S4 levels, learners developing extended language skills will be able to respond to literary texts in the following ways:

- identify literal and embedded meaning;
- Identify common themes in literature;
- compare and contrast poems/extracts on a similar theme;
- explain orally and in writing the effect of the writer's choice of words, idiomatic expressions and sayings in simple poems;
- identify figurative use of language.

Kiswahili

Kiswahili is an important language of communication throughout East Africa. It is the intention of the Government of Uganda that the language will become a *lingua franca* for Ugandan citizens so that they will be able to move freely in the region and work in a wider area. Study of the language will broaden opportunities for school leavers in many occupations, such as agriculture, business, construction, production and transportation, travel and public services.

It is expected that learners will reach the following levels of proficiency by the end of S4:

Learners will be able to:

- understand the main points of clear, standard written material on familiar matters regularly encountered in work, school, leisure, etc;
- interact with speakers from different parts of Africa with a degree of fluency that avoids strain for either party;
- explain a viewpoint on a topical issue giving advantages and disadvantages of various options;
- produce simple, connected text on topics which are familiar or of personal interest.

Foreign Language

Knowledge of a second international language is a prerequisite for admission to a higher learning institution in many EU countries. Proficiency in a foreign language is also particularly useful in the international business world, in the tourism and hospitality industries and in many other working environments.

It is expected that learners will reach the following levels of proficiency by the end of S4.

Learners will be able to:

- understand the main points of clear standard written material on familiar matters regularly encountered in work, school, leisure, etc;
- deal with most situations likely to arise whilst travelling in an area where the language is spoken;
- produce simple, connected texts on topics which are familiar or of personal interest;
- describe in simple terms aspects of their background, local environment and immediate needs;
- compare their own culture with that of people whose language they are learning, in order to avoid stereotyping on the basis of language and culture.

Local language

Learners who select further study of their local language will deepen their knowledge of their culture, heritage and intercultural knowledge. They will be able to take an increasingly active role in their own community. Their wider knowledge will be useful in many occupations within their locality, such as in commerce, in the tourism industry. Skills in local languages will also help people to tackle health issues and environmental, political and socio-economic challenges.

It is expected that learners will reach the following levels of proficiency by the end of S4.

Learners will be able to:

- understand the main ideas of complex text on both concrete and abstract topics;
- interact with a degree of fluency and spontaneity with other speakers of the language;
- produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue, giving the advantages and disadvantages of various options;
- appreciate traditional songs, poems, stories, etc;
- describe and promote their own culture;
- appreciate the culture of other language groups within Uganda.

Language progress is not merely a question of moving up a vertical scale of proficiency. Learners may make lateral progress (from another skill category) by broadening their performance capabilities rather than

increasing their proficiency in terms of the same skill category. Scales of language proficiency are not a linear measurement scale like a ruler.

Learning a language is a matter of horizontal as well as vertical progress as learners acquire the proficiency to perform in a wider range of communicative activities. Hence, the qualitative aspects of spoken language use (range, accuracy, fluency, interaction, coherence) need to be reflected in the construction and application of proficiency scales.

8.3   Life Education

Learning in Life Education ensures that young people develop the knowledge and understanding, skills, capabilities and attributes which they need for mental, emotional, social and physical wellbeing, while at school and later in adult life. This enables them to develop good relationships and have respect for differences between people. Life Education helps learners to make informed decisions in order to improve their mental, emotional, and social well-being. It also develops their physical well-being and enables them to pursue a healthy lifestyle.

In the Personal, Social and Health Education (PSHE) strand of Life Education, learners study themselves in relation to others and to society. The strand is concerned with the personal, social, and emotional, development of learners, and the way in which these dimensions are interrelated and expressed in life. Its goal is to equip young people with the knowledge, understanding, attitudes, generic and practical skills to live healthily, safely, productively and responsibly within their communities. PSHE guides and prepares learners for life, and for its responsibilities and possibilities. It promotes self-esteem and self-confidence, provides a framework for responsible decision-making and provides opportunities for reflection and discussion. Through this strand, learners analyse their personal strengths and limitations. They become aware of opportunities that are available to them and develop strategies to become successful in their working lives. Learners consider emotional and physical changes in themselves and those around them. They analyse the expectations of peers, families and communities on their actions and learn strategies to cope with those changes and expectations.

Learners consider how enabling factors and risk factors affect their decision-making on life issues relating to relationships, sexuality, personal finance, work and life-long learning. In terms of sexuality education, research has found that learners are more likely to develop appropriate attitudes and practice desirable behaviours when dedicated time has been allocated to it on the curriculum. Sexuality education in Uganda is critical at this

point in time. The HIV/AIDS infection rate has increased again among young people. The PSHE strand aims to influence the attitudes and behaviour of young people in this regard.

In the PE strand, learners experience physical challenge and enjoyment through physical activity and sports. Values such as teamwork, commitment, perseverance, endurance, fairness, appropriate competitiveness and rule following are acquired.

The strand will also enable some to perform at high levels in sport or prepare for working opportunities within the health and leisure industries.

Learners will experience activities which enable them to develop the skills and attributes that are necessary to achieve and sustain positive destinations beyond school. Life demands and employment and work patterns are changing. They acquire life skills which enable them to progress successfully to making a productive living, or to the next stage of their education or training. It is particularly important for all young people to develop high skills levels and also an understanding of the world of work, training and lifelong learning so that they can embrace life opportunities.

Strands

The programme of study in Life Education is structured within two strands referred to above.

These are:

- Personal, social and health education
- Physical education

Learning Outcomes

The understandings, skills and values that learners are expected to acquire by following the Life Education programme of study are presented here.

Understandings

Learners should **understand**:

- the need for physical and mental well being and social skills;
- how eating habits activity patterns and decision about behaviour and relationships affect physical and mental wellbeing;
- the need for hygiene in for human well being
- the impact of risk taking;
- role that human sexuality plays in emotional wellbeing;

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- the meaning and purpose of morality and values to individuals and society;
- the need for regular exercise, fitness, health and training through sports activities;
- the human body and its functions in relation to sport and physical activity;
- the contribution of scientific knowledge to the development of techniques associated with physical exercise and sports;
- that safety measures, rules and regulations are an element of sport and physical activity;
- that good health and body fitness are a result of positive leisure and recreational habits and active engagement in physical activities.

Skills

Learners should **be able to**:

- develop self awareness, self worth and respect for others;
- apply critical thinking skills to the making of reasoned and responsible moral decisions;
- through discussion, make appropriate decisions about various ethical issues;
- make informed decisions in order to improve mental, emotional, social physical and sexual wellbeing;
- meet challenges, manage change and build relationships;
- develop confidence and responsibility and make the most of their abilities;
- acquire and perform a wide range of sports skills;
- develop motor skills and capabilities;
- acquire a range of physical activity and sports skills;
- organise him/herself and others for sporting events;
- socialise and interact with other learners and persons through sport and physical activities.

Values

Learners should **appreciate and value**:

- health and wellbeing as an essential aspect of quality life;
- positive attitudes such as respect, patience, honesty, responsibility, tolerance, joy in life, co-operation, appreciation, sharing, endurance, perseverance, care for other people, and respect for other living things.
- good relationships and respect the differences between people;
- taking part in sport, leisure and recreation activities;
- socially acceptable habits and personal values associated with sport and physical activities;
- a healthy eating behaviour.

8.4   Mathematics

Rationale

Mathematics forms a key element of every learner's education. The Mathematics programme of study puts a strong emphasis on the essential mathematical skills that all citizens need for full and effective participation in civil, social and economic life. It focuses primarily on the needs of the great majority of learners, who may be expected to leave school at the end of Senior 4 or to continue to further training and studies in non-mathematical subjects. It will allow these learners to proceed to a wide range of further opportunities in post-Senior 4 programmes (including training in a Primary Teachers' College).

Prior to the reform, Mathematics courses throughout the Lower Secondary years were strongly geared towards the needs of the small minority of learners who might eventually go on to study Mathematics at Advanced level and beyond. The Mathematics programme in the reformed curriculum is much more inclusive. It is designed to ensure that the great majority of learners will leave school with a worth-while, relevant qualification in the Mathematics that they will actually use in everyday life and work. In their daily life, knowingly or unknowingly, every human being uses and applies mathematical concepts in a wide range of contexts. Numeracy skills are essential to every aspect of both work and civil life. Mathematics has evolved across all cultures over the years, and it is still developing. The study of Mathematics develops the learners' reasoning and logical thinking skills, and its applications cut across all Learning Areas. During the learning process, the beauty of Mathematics and its value in a wide range of contexts are recognised by the learner.

The Mathematics programme of study at Senior 1 to 4 focuses on developing mathematical understanding, logical reasoning, problem solving and analytical thought. The concepts, understandings and skills acquired will help learners to solve familiar or unfamiliar problems, giving them the flexibility they need to meet new situations as they arise. The learners will be confident with the Mathematics that they need for their day-to-day activities in the home, in the work place, in the community, and in society. They will also be ready to participate in civil life, using their mathematical skills to make informed decisions based on a sound understanding of facts, figures and opinions.

The Senior 1 to 4 Mathematics programme of study accommodates learners who progress at different rates. There is a *Core* programme of study for all learners, with an *Extended*[16] programme designed specifically for high achievers.

Mathematics *Core* Programme of Study

In the Mathematics *Core* programme of study, learners develop their understanding of key mathematical concepts. They learn to apply their mathematical understanding to solve realistic problems drawn from daily life, from the world of work, from other Learning Areas, and from within Mathematics itself. The skills and understandings that the learners acquire will be helpful throughout their lives. They will provide the essential mathematical tools required for a wide range of career paths including many of those in the fields of engineering, science or technology.

Mathematics *Extended* Programme of Study

The specific needs of the high-achieving minority of learners who will go on to study the subject at Advanced level are met by the provision of an *Extended* programme of study. Learners following the *Extended* programme still require a thorough knowledge and understanding of *Core* Mathematics. The *Extended* programme is largely identical to the *Core* in structure and content. However, for each topic, there are further activities and exercises in the text books and teachers' resource materials. These are designed to allow exceptionally able learners to explore the concepts they have learnt in the *Core* more deeply and to develop them to a higher level. There are also a small number of units designed for these learners to work through independently. These units relate to topics and concepts that are not required by *Core* learners. Most of these independent study units are introduced in Senior 4.

At the end of Senior 4, the programmes are assessed on a common scale within a single examination with separate examination papers. The Core papers are compulsory, and must be taken by all candidates. The Extended papers are optional, and are designed for the small minority of candidates who will be going on to study Mathematics or a mathematical subject as Advanced level.

Strands

The Mathematics programme of study encompasses five 'product' strands:

- Number;
- Shape and space;

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[16] The term 'Additional' was considered but was rejected because it might imply a course of study targeted specifically at mathematical high fliers. This terms was previously used in this way. Other terms were proposed – 'higher'; 'advanced'; and 'supplementary'. The term 'extended' was accepted as it appears to make the appropriate implication as described in the following paragraphs.

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- Data and probability;
- Patterns and algebra;
- Measurement.

There is one 'process' strand which provides an overarching structure for the five product strands:

- Mathematical reasoning and problem solving

Learning Outcomes

The understandings, skills and values that learners are expected to acquire by following the Mathematics programme of study are presented here.

Understandings

Learners should **understand**:

Number

- Numbers and the number system;
- Place value;
- Calculation.

Shape and space

- Properties of shape;
- Properties of position and movement.

Data and probability

- Specifying a problem and planning an approach;
- Collecting, processing and representing data;
- Interpreting and discussing results;
- Probability.

Patterns and algebra

- Equations;
- Formulas and identities;
- Sequences, functions and graphs.

Measurement

- Measurement

Skills

Learners should **be able to**:

Use mathematical reasoning and problem solving

- select the Mathematics to solve routine and non-routine problems;
- use and interpret a range of types of numerical, graphical and diagrammatic information, changing from one representation to another;
- interpret results in the context of the problem;
- process and communicate information;
- use and explain mathematical reasoning;
- generalise and make hypotheses.

Values

Learners should **appreciate and value**:

- mathematics for its intrinsic worth, and for the pleasure that it can give;
- the powerful tools that Mathematics provides in a wide range of day-to-day and work-related contexts.

8.5   Religious Education

Rationale

Education aims to inculcate spiritual and moral well-being in learners. It will ensure that young people develop the knowledge, understandings, skills, values and attitudes which contribute to spiritual wellbeing, while at school and throughout life.

Religious Education enables young people to engage in a search for meaning, value and purpose in life. They become aware that beliefs and values are fundamental to families and to the fabric of society. The learners will discover the meaning and purpose of morality and the values that upheld by society. For this reason it is compulsory that all learners study Religious Education.

The available content for religious education is diverse. However, the desired scope is heavily influenced by attitudes towards faith within communities. For this reason, NCDC proposes that schools should be able to decide which strands of the Religious Education Learning Area reflect their beliefs and interests of the communities in which they are located. In order to provide a programme of study that meets the needs of all stakeholders in society, NCDC proposes three optional strands, as presented below. For groups or communities who are satisfied with the current religious education course, the programme of study will be retained. However, it will be improved and updated to reflect contemporary approaches in learning and teaching.

The Religious Education programme of study will support learners in developing and reflecting upon their values and contributing to their capacity for moral and ethical judgement. Through developing awareness and appreciation of the value of each individual in a diverse society, religious education will engender responsible attitudes to other people.

Strands

The programme of study in Religious Education is structured within two optional strands:
- Christian religious education
- Islamic religious education

Schools will decide to offer one or more strands depending on the interests of the school's stakeholders. The learner will choose one strand to study throughout the four years.

Learning Outcomes

The understandings, skills and values that learners are expected to acquire by following a Religious Education programme of study are presented here.

Understandings

Learners should **understand**:
- the origin, beliefs, teachings and practices of the two religions;
- the historical development of the two living belief systems;
- the impact of various religions on peace, social justice and respect for the sacredness and dignity of human life in relation to contemporary issues;that, throughout various periods in human history, religion has caused division between peoples;
- the meaning and purpose of morality and spiritual values for individuals and society;
- Contemporary views about religious beliefs and ethical and moral issues.

Skills

Learners should **be able to**:

- apply critical thinking skills to the making of reasoned and responsible moral decisions;
- through discussion, make appropriate decisions about various ethical issues;
- make informed decisions in order to improve their mental, emotional and spiritual wellbeing.

Values

Learners should **appreciate and value**:

- people of different religions and show respect for their beliefs;
- the mystery and beauty of creation and the interrelationships within it;
- good human relationships and respect the differences between people;
- a range of positive attitudes such as respect, patience, honesty, responsibility, tolerance, joy in life, co-operation, appreciation, sharing, endurance, perseverance, care for other people, and respect for other living things.

8.6   Science

Rationale

Science is an important part of the heritage of humanity. Its applications are used in our daily lives, at work, at leisure and at home. Science and the application of Science are central to the economic future of this country. It contributes to the improvement of the health and wellbeing of individuals, and to society as a whole.

In the Science Learning Area, learners will acquire knowledge about, and understanding of, the living, material and physical world. They will learn to value the processes that support life on our planet. They will appreciate the application of Science in the protection and enhancement of the natural and built environment. They will become aware of a range of technologies, and learn about how Science contributes to technological progress. They will begin to appreciate the impact of Science on their own health and wellbeing, the health of society and the health of the environment.

Science helps learners to become critical thinkers. It encourages them to use evidence to evaluate the way science is used in daily life. Learners engage in a wide range of collaborative, investigative tasks. These tasks help learners to develop the skills of scientific inquiry and investigation using practical techniques. They develop skills in the accurate use of scientific language and formulae. The acquisition of these skills helps

them to become creative, inventive and enterprising adults. The skills and knowledge of the Sciences are needed in all sectors of the country's economy.

Strands

The learning outcomes will be achieved through studies in six strands:
- Science enquiry skills
- Life Sciences
- Materials Sciences
- Physical Sciences
- Earth and Space Science
- Science, technology and society

The Earth and Space strand deals with geological studies and space Science. The Science, Technology and Society strand develops understanding of the relationship between Science and Technology. It also addresses the ethical and moral issues raised by the study and application of Science. The Science Enquiry Skills strand addresses the nature of Science as an intellectual discipline, and develops the range of skills required to practise Science.

Understandings

The learners should **understand**:
- the natural world as a set of related systems;
- the scientific concept of energy and that energy is vital to our existence and to our quality of life;
- their own biology and that of other living things, and recognise the interdependence of life;
- that the structure of materials determines their properties and that the processing of raw materials results in new materials with different properties and uses;
- how the Earth's physical environment and its position in the universe impact on the way we live;
- that scientific knowledge is needed and applied in all sectors of a nation's life and economy.

Skills

The learners should **be able to**:
- use scientific methods of investigation - collect, organise, analyse, communicate and evaluate data on the natural world;
- think and inquire critically;
- apply scientific knowledge;
- use Science effectively showing responsibility for the concerns of others and for the environment;

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- plan, develop and investigate a phenomenon;
- carry out and explore the relationship between Science and technology;
- process, interpret and report information and data;
- investigate the application of Science and appreciate the impact of Science on technology;
- acquire an understanding of, and appreciate the personal, community and global implications of Science and technology.

Values

Learners should **appreciate and value**:
- collaborating and working with others;
- showing concern for the environmental protection and conservation;
- the social consequences of the application of Science;
- moral and ethical issues raised by scientific investigation.

The specific needs of the high-achieving minority of learners who will go on to study the subject at Advanced level are met by the provision of an extended programme of study. Learners following the extended programme still require a thorough knowledge and understanding of core science however the extended programme is designed to allow exceptionally able learners to explore the concepts they have learnt in the core more deeply and to develop them to a higher level.

The extended programme is largely identical to the core in structure and content. However, for each topic, there are further activities and exercises in the text books and teachers' resource materials. For example, students will learn about the phenomena of speed, frequency and wavelength of waves in the core while the mathematical relationship between them is only developed in the extended programme.

8.7   Social studies

Rationale

Social Studies focuses on the study of people in relation to the societies in which they live and the natural and created environments in which they exist. The study of Social Studies develops their knowledge, skills, attitudes and values that learners need to participate actively in society. It helps them to be informed, confident and responsible citizens of the local, national, regional and global communities in which they will live and work. Learners gain knowledge about Uganda and its position in the world. They become more aware of the increasing interdependence between Uganda and other countries as a result of globalisation. They become aware of the importance of developing a sustainable relationship with the natural environment and of achieving a sustainable use of natural resources.

Social Studies combines elements of the hitherto separate domains of Geography, History, Government and Politics, Economics and Sociology. It emphasises the relationship between these domains of study. At the Lower Secondary level, it is important to develop the understanding that all aspects of people, society and environment are inter-related.

Strands

The Social Studies strands are:

- society and leadership;
- time and continuity;
- people and their environment;
- resources and sustainable development.

The four statements below provide a brief overview of the focus of these strands. The social studies skills are embedded within these four strands.

Society and leadership includes the relationship of people within the society, the types of leadership and government. It includes what is often called Civics, as well as elements of sociology, government and politics.

Time and Continuity includes an appreciation of the learners' own heritage, including culture, language and traditions and how these have changed over time. It includes aspects of the history of Uganda, East Africa, Africa and the world.

People and their environment includes studying the natural environment by understanding appropriate aspects of physical geography and the relationship of people to their natural environment i.e. how the natural environment affects the way of life of the people living in an area.

Resources and sustainable development includes study of resources, natural and created, the way the resources are used and the way the products are distributed within the society through trade and the distribution of wealth. It includes elements of economics and geography.

The understandings, skills and values that learners are expected to acquire by following the Social Studies programme of study are presented here. They are organised according to the four strands.

Understandings

Learners should **understand**:

Society and leadership

- the society in which they live;
- their relationship to other people in their society;
- the inter-relationship between people in the society;
- the nature of some other contrasting societies in the world;
- the relationship of their society to other societies in the world.

Time and continuity

- the history and development of the society;
- the historical development of local, national and international areas;
- causes, motives and consequences of historical events;
- interpretations of different historical events.

People and their environment

- the main physical features of the physical environment and climate, their origins and causes and how these are changing by natural and human causes;
- the relationship of the society and other societies to the physical and created environments;
- local, national and international environments and how these affect the way people live.

Resources and sustainable development

- the nature of the resources in the society and the way these are used and distributed;
- the concept of sustainable and unsustainable use of natural resources;
- patterns and relationships between population growth and economy;
- how resources are used and distributed locally and in different parts of the world;
- how the modern economic system leads to specialisation, industrialisation and urbanisation;
- how Uganda is linked to other societies in the world through the modern economic system.

Skills

Learners **should be able to**:

Society and leadership

- draw a diagram to represent the government structure and leadership of a given community;
- develop skills to search for personal rights as a citizen of the country;

- develop skills to know what the government expects of you and what you expect from the government;
- use interviews to find out information about the local society or societies in other areas.

Time and continuity

- draw a time-line;
- interpret simple cartoons;
- select important from less important historical events;
- establish the difference between history and fiction;
- develop the ability to make connections, comparisons and relationship between different events in history;
- use historical language;
- use an atlas to find historical information.

People and their environment

- draw and read maps;
- understand the difference between a map, a photograph and reality;
- read and interpret large scale survey maps;
- use atlases to find information about the world;
- use maps for field work activities;
- collect data in the field and show it on a map or graphically;
- use graphs, maps and statistics to show information about aspects of climate.

Resources and sustainable development

- use graphs and statistics to interpret social studies , for example, population and economic growth;
- read and interpret statistical information showing features of Social Studies such as population and economic development;
- read a graph showing population changes;
- read and understand population pyramids;
- interpret the demographic transition model on a graph.

Values

Learners should **appreciate and value**:

Society and leadership

- the idea of people choosing their own leaders;
- respect for people regardless of their race, religion, gender, tribe and social status/ class;

- the concept of human rights;
- the need for people of different languages and cultures to live together peacefully;
- ways in which conflicts between groups of people can be solved by peaceful means;
- needs and methods of reconciliation after conflicts;
- the impact of race, gender and class as causes of inequalities and conflict in societies.

Time and continuity

- their own culture heritage;
- pride in their own country and cultural heritage;
- the cultural heritage of others and the need to respect the cultural heritage of others as much as our own;
- that cultures have differences but it is wrong to say that one culture is superior to another;
- the importance of understanding their own history as a means of understanding the present.

People and their environment

- the natural environment and how to care for it;
- Having care for and concern for the preservation of the soil and the use of sustainable farming techniques;
- that people's way of life is often influenced by the environment in which they live.

Resources and sustainable development

- the need to preserve natural resources and use them in a sustainable way;
- the dangers of population growth;
- the political and economic interdependence in the modern world;
- the dangers of over-use of our natural resources;
- the problems which may be caused by rapid population increase in relation to natural resources;
- the need for an economic system which helps to distribute the natural and created resources in a fair and equitable way;
- the dangers of corruption leading to an unfair and inequitable distribution of resources.

8.8   Technology and Enterprise

Rationale

The Technology and Enterprise Learning Area provides a learning environment whereby learners can acquire and apply a wide range of the generic skills presented in the previous section. Learners also acquire the range of skills that derive from the various traditional subject areas – food and nutrition, textiles, agriculture, enterprise skills, ICT, design skills from the vocational subjects. Technology is about the application of knowledge and skills to extend human capabilities and help satisfy human needs and wants. It provides scope for developing technological skills, knowledge, understanding and attributes through creative, practical and work-related activities. Handled in the appropriate way, the Technology and Enterprise Learning Area imparts a range of understandings, methods, and skills to help young people tackle the spectrum of societal problems.

A wide range of 'real life' problems are manifest in Ugandan society. Some problems clearly visible in the country are:

- Inadequate sanitary facilities in villages and lack of clean water supply in many places;
- Low take-up of rainwater trapment systems;
- Food storage methods and gardening techniques unchanged for generations;
- Lack of exposure to non-traditional methods of food preparation;
- Inability to store food due to lack of powered appliances;
- Lack of extension work to foster new gardening practices;
- Poor basic enterprise skills;
- Lack of access to small loans to trigger start-up ventures;
- Poor application of generic technological skills to everyday village problems;
- Low awareness of the dangers of inappropriate use of electrical appliances;
- Range of 'health' related issues (e.g. early pregnancy; inadequate knowledge of basic hygienic practices; ignorance of the need for anti-malaria measures);
- Seriously deficient vehicle driving practices and habits.

The skills are acquired by a programme of study in 'skills' sub-strands within each year level. They are then applied to learner work on a range of projects. These projects will be selected according to 'do-ability', local area needs learner preference and teacher competence to handle. These project sub-strands (or modules) will constitute responses to identified societal problems and challenges. The products of this work are likely to be

'tangible' designs, items, approaches, technical methods, experimental techniques, or prototype equipment, focused on the identified problems or challenges.[17]

Strands (thematic)

To construct the sub-strand modules, the identified societal problems are clustered into thematic strands. These then become the organising framework for programmes of study across the four year levels. Currently, six thematic strands appear to emerge readily from an analysis of the problems confronting ordinary people in their daily lives. They are:

- Self-employment and money;
- Crop production and animal husbandry;
- Food production and food security;
- Water, sanitation and hygiene;
- Housing and construction;
- Machines and technology;

Learning Outcomes

Understandings

Learners should **understand**:

- The procedures and steps to be followed in identifying community problems, needs, wants and challenges to be addressed by the application of technology;
- How to use, maintain and store of basic tools, equipment and materials for work;
- The jobs involved in running a small business;
- Some ways of adding value to agricultural products, so that they become the basis of small enterprise;
- Essential health, safety and hygiene practices;
- That the use of basic technologies can move people towards self-reliance and improvement of livelihoods and standard of living;
- The concepts behind technological thinking, and the links between the technologies and the Sciences;
- The design process: viz. the design brief, a specification, and the design and development of models and prototypes;
- The importance of planning and the list of things that should be included in a production plan;

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[17] *For an explanatory paper on the nature of the 'technology' and 'enterprise' fields, as understood in the TE Learning Area, see Appendix x to this document*

- The role that each job plays in the success of a small business;

- The relationships between inputs, processes and outputs;

- The positive and negative impacts of technology on society;

- The concept of Sustainable Development, non-renewable resources, renewable resources, by-products, pollution and sustainable materials, and methods of managing and disposing of different types of waste;

- The importance of adapting and using locally available materials and technology;

- The qualities and characteristics of an entrepreneur;

- The importance of business for sustainable community and national development;

- The different types of businesses in Uganda;

- How entrepreneurship is regulated in Uganda;

- The role that information and communications technology (ICT) can play.

Skills

Learners **should be able to**:

- Have the skills and confidence to use technologies at home, at work and in the community;

- Gather and analyse data and information, identify problems, challenges and opportunities in relation to the needs of the community;

- Generate ideas through the use of scientific investigation and inquiry;

- Create and design innovative products and services to meet the needs of the community;

- Plan and organise innovative strategies, systems, processes and procedures for the development of the products;

- Identify, select and cost required tools, equipment, materials and labour;

- Manipulate tools, equipment and materials in different contexts;

- Use different modes of communication including written and oral text, sketches, drawings, diagrams, graphs, tables and presentations during the design, development and production;

- Interpret information conveyed through text, sketches, drawings, diagrams, graphs and other communication modes;

- Apply safety and hygiene rules;

- Evaluate products and services based on pre-determined criteria;

- Adapt and use locally available materials and technologies;

- Generate business ideas through simple market research to determine community needs, products and services;

- Register a business in accordance with the legal framework and procedures of registering different types of businesses in Uganda;

- Prepare a basic business plan;
- Perform basic business management tasks including marketing, finances, human resources and operations;
- Manage resources to meet specific needs;
- Adapt and use locally available materials and technology;
- Plan, develop, make and evaluate food or textile items which meet needs at home or in the world of work;
- Apply a range of food preparation techniques and processes to make a variety of items showing imagination and creativity and recognisisng the need to conserve resources;
- Use simple data handling software to search, sort, retrieve or display information and to analyse and interpret;
- Use different technologies to interact and share experiences, ideas and information with others;
- Perform effective crop and animal management practices safely, and in collaboration with others;
- Use ingredients and equipment and apply specialist skills in preparing food, with confidence and dexterity;
- Use textile skills in practical and creative situations;
- Be capable of making reasoned choices relating to the environment, to sustainable development and to ethical, economic and cultural issues;
- Decide upon after-school specialised study careers.

Values

Learners should **appreciate and value**:
- The dignity of work;
- Being self-motivated and self-directed;
- Having the qualities of honesty and integrity;
- Being innovative, creative and resourceful;
- The potential of the scientific and designed world;
- That there are positive and negative impacts of technology;
- Having care and concern for the health and safety of others;
- Having care and concern for the sustainability of the environment;
- Participating actively in personal well-being and that of family and community;
- Appreciating the richness and diversity of locally available technologies;
- Having a positive perception of owning and running a business;
- Being oriented to customer needs in small business practice;
- Adhering to acceptable business ethics and practices;

- Being willing to work with others;

- Being disposed towards the achievement of high quality standards or excellence;

- Becoming informed consumers and producers who appreciate the impact of products and services;

- Contributing to improved material well-being for self and community;

- Actively establishing foundations for lifelong learning;

- Conserving materials and resources, considering the impact of my actions on the environment;

- Taking and managing risks.

8.9 Contribution of the Learning Areas to the KLOs

The table below indicates how the eight Learning Areas contribute to the achievement of the Key Learning Outcomes (KLO), as presented in Section 5.

Table 8.1: Learning Areas' contribution to the KLOs

KLO	Indicators	CA	Lg	LE	Ma	RE	Sc	SS	TE
Learner is a self-assured individual	Demonstrates self-motivation, self-management and self-esteem	✔	✔	✔*	✔		✔	✔	✔
	Knows own preferences, strengths and limitations	✔	✔	✔*	✔	✔	✔	✔	✔
	Uses appropriate language and adjusts behaviour according to social situations	✔	✔	✔		✔	✔	✔	
	Is able to relate to a range of personality types	✔	✔	✔	✔	✔	✔	✔	✔
Learner is a responsible and patriotic citizen	Cherishes the values promoted in the curriculum	✔	✔	✔	✔	✔	✔	✔	
	Promotes the development of indigenous cultures and languages and appreciates diversity, equity and inclusiveness	✔	✔		✔	✔	✔	✔	
	Applies environmental and health awareness when making decisions for themselves and their community	✔	✔	✔		✔	✔	✔	✔
	Is positive in their own identity as individuals and global citizens	✔	✔	✔*	✔	✔	✔	✔	✔
Learner has a passion for life-long learning	Can plan, reflect and direct their own learning	✔	✔	✔	✔	✔	✔	✔	✔
	Actively seeks lifelong learning opportunities for personal and professional development	✔	✔	✔	✔	✔	✔		✔
Learner makes a positive contribution to national development	Has acquired and can apply the Generic Skills	✔	✔	✔	✔	✔	✔	✔	✔
	Knows own abilities and makes future plans accordingly	✔	✔	✔	✔	✔	✔		
	Demonstrates knowledge and an understanding of the emerging needs of society and the economy	✔	✔	✔	✔		✔	✔	✔

KLO	Indicators	CA	Lg	LE	Ma	RE	Sc	SS	TE
	Understands how to design, make and critically evaluate products and processes to address needs	✔			✔		✔		✔
	Appreciates the physical, biological and technological world and makes informed decisions about sustainable development and its impact on people and the environment	✔	✔		✔		✔	✔	✔
	Is motivated to contribute to the wellbeing of themselves, their community and the nation	✔	✔	✔*	✔	✔	✔	✔	✔

The eight Learning Areas contribute to learner achievement of the Key Learning Outcomes. While learners achieve outcomes by following the programmes of study in all Learning Areas, they also make progress towards achieving the Key Learning Outcomes of the overall lower secondary curriculum. For example, the Technology and Enterprise Learning Area should contribute in a major way to the outcome 'Understand how to design, make and critically evaluate products and processes in response to human needs and challenges.' However, all Learning Areas in some way contribute towards the achievement of this outcome.

9. Learning Time

This section presents the agreed allocation of Learning Time across the Learning Areas of the curriculum, as proposed by the National Curriculum Development Centre.

The Learning Time proposals in this section are based on the following assumptions:

- All periods are 40 minutes long;
- There should be eight learning periods per day, i.e. 40 periods per week. This totals 1,600 learning minutes per week;
- Learning time needs to be allocated at school level so that time spans are available for meaningful work in Learning Areas, e.g. a Technology and Enterprise project planning exercise may need at least two double periods; indeed, the activity may run into extra-curricular time; hence, schools must decide how best to structure the learning periods for the Learning Areas (as has been the case under the old curriculum).

This table and pie chart depict the allocation of Learning Time across Learning Areas. The graphics are based on the 1600 minute Learning Time scenario.

Table 9.1: Learning time allocation

Learning Area	Periods per week	Length of lesson	Total minutes	Percentage Time
Creative Arts	4	40	160	10
Languages	8	40	320	20
Life Education	3	40	120	7.5
Maths	6	40	240	15
Religious Education	2	40	80	5
Science	6	40	240	15
Social Studies	5	40	200	12.5
Technology and Enterprise	6	40	240	15
Totals	**40**		**1600**	100

Figure 9.1: Learning time allocation

Periods per week

Technology and Enterprise, 6 · Creative Arts, 4 · Languages, 8 · Social Studies, 5 · Life Education, 3 · Science, 6 · Maths, 6 · Religious Education, 2

Languages are allocated the greatest number of periods per week (eight). There are two compulsory languages – English and Kiswahili. English is the medium of instruction, and so is crucial for learning in all Learning Areas. Hence, it is vital that the Learning Time for it is adequate. Learners will be able to choose a programme of study in either a Foreign Language (FL) or a Local Language (LL). Learning Time allocation for Languages in a Learning week will therefore be: English four periods; Kiswahili two periods; Foreign Language or Local Language two periods.

Mathematics, Science, and Technology and Enterprise are each allocated six periods per week; Social Studies is allocated five.

Life Education has two strands (PE and PHSE). The Physical Education strand requires at least a double period per week, to allow meaningful activity outdoors, either on games, or movement /athletics. The other period is for the PHSE strand.

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The Technology and Enterprise six periods per week allocation will need to be handled at the school level in a way that caters for practical sub-strands and projects. A year long project may begin with seven or eight periods within official learning time. However, the continuance of such of project require extra-curricula time.

Table 9.2 depicts the 40 period week over the five days, with the learning day starting at 08h00 and finishing at 15h00

Table 9.2: A school day

Activity	Time	Monday	Tuesday	Wednesday	Thursday	Friday
Registration	0745 - 0800					
Lesson 1	0800 – 0840					
Lesson 2	0840 – 0920					
Short break	0920 - 0930					
Lesson 3	0930 - 1010					
Lesson 4	1010 – 1050					
Break	1050 - 1120					
Lesson 5	1120 – 1200					
Lesson 6	1200 – 1240					
Lunch	1240 – 1340					
Lesson 7	1340 – 1420					
Lesson 8	1420 - 1500					
Non-academic extra-curricula activities	1500 - 1600					

Table 9.3 shows how the Learning Area timetable might be allocated in a 40-period week.

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Table 9.3: A sample timetable

Activity	Time	Monday	Tuesday	Wednesday	Thursday	Friday
Registration	0745 - 0800					
Lesson 1	0800 – 0840	Languages	Science	Languages	Languages	Languages
Lesson 2	0840 – 0920	Maths	Science	Life Education	Languages	Religious Education
Short break	0920 - 0930					
Lesson 3	0930 - 1010	Creative Arts	Maths	Social Studies	Maths	Technology & Enterprise
Lesson 4	1010 – 1050	Creative Arts	Maths	Social Studies	Social Studies	Technology & Enterprise
Break	1050 - 1120					
Lesson 5	1120 – 1200	Languages	Languages	Science	Technology & Enterprise	Science
Lesson 6	1200 – 1240	Social Studies	Social Studies	Science	Technology & Enterprise	Science
Lunch	1240 – 1340					
Lesson 7	1340 – 1420	Technology & Enterprise	Languages	Maths	Life Education	Creative Arts
Lesson 8	1420 - 1500	Technology & Enterprise	Religious Education	Maths	Life Education	Creative Arts
Non-academic extra-curricula activities	1500 - 1600	e.g. School band/choir	e.g. Games/ Athletics	e.g. Guest talks	e.g. Drama/Dance club	e.g. Income generating activities

This represents a seven hour day for learners, including the three breaks – already very long. In locations where schools need to operate a double shift, the only option is to shorten the period length, and organise a day of seven periods only. To complete a double shift day by by 18h00, a school would need to begin Shift 1 at 08h15 (registration at 08h00). Each shift would be structured as:

Seven periods of 35 mins, with a short break of 10 mins, and a long break of 30 mins, giving 285 minutes (or 4 hours, 45 mins). Hence, Shift 1 needs to begin at 08h15, and finish at 13h00. Shift 2 needs to begin at 13h15, and finish at 18h00.

The consequence of such a double shift scenario would be that the Learning Time for all Learning Areas would have to be proportionately reduced. The Learning Day is about one third lower than the optimum, as proposed above. Hence, the time available for each LA would be reduced by a similar fraction. The reality would be that Mathematics, for instance, with a proposed six periods of 40 minutes (240 minutes), would have to settle for less than five periods of 35 minutes (about 160 minutes, in fact).

10. How learners will learn

The intended curriculum becomes a reality when teachers deeply understand what their learners are required to learn. They make learning accessible by using strategies which ensure intended learning outcomes are achieved. Such teachers know that while learning and teaching are strongly connected, they are not the same.
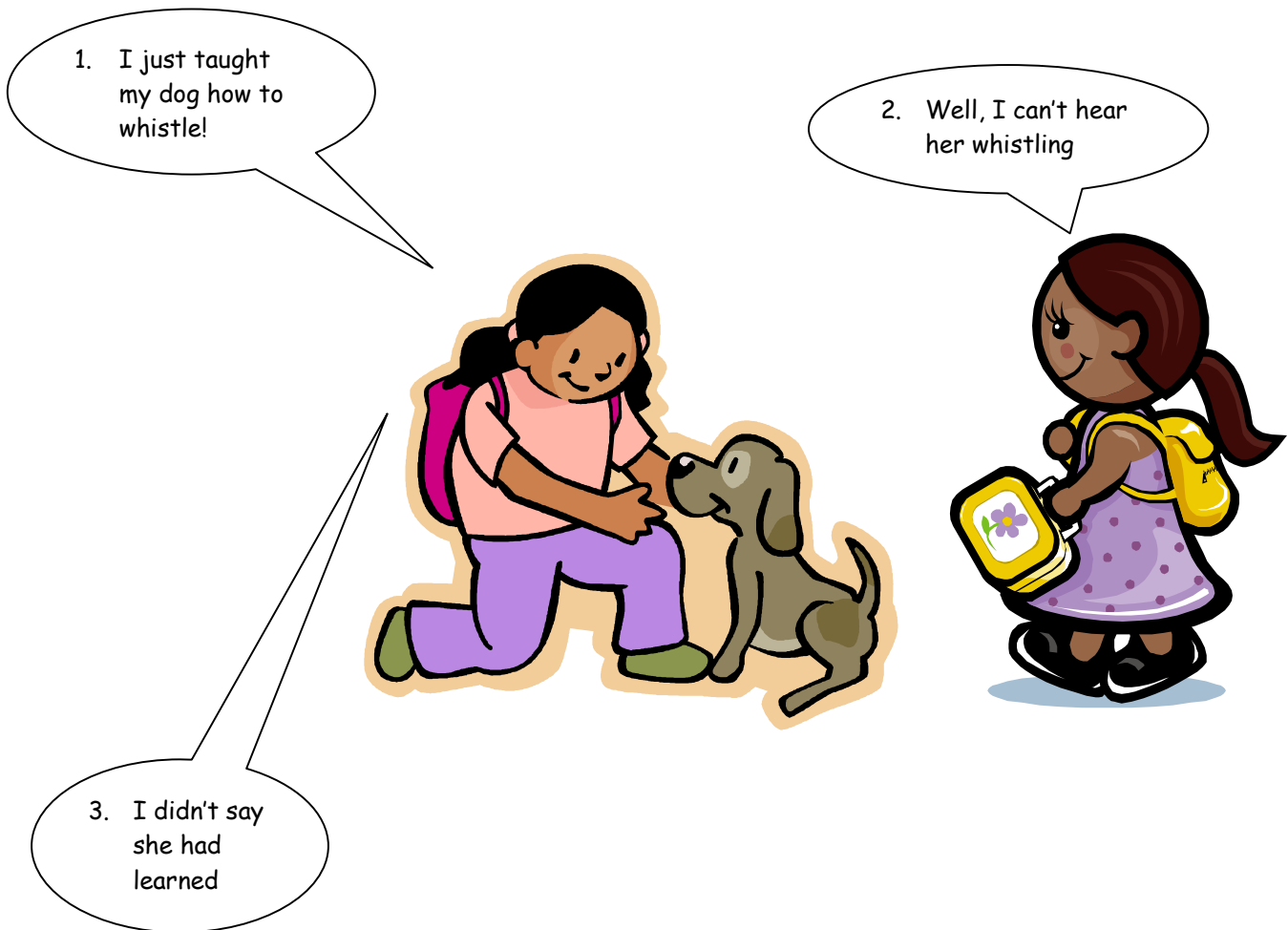
10.1   Ensuring the inclusion, participation and achievement of all learners

In order to ensure the inclusion of all learners, it is necessary for schools to identify the barriers that may lead to exclusion, and then reduce these barriers. They need to ensure participation and achievement of all learners. Schools need to respond positively to diversity and difference. They must continually strive to meet the needs of all learners. There must be an on-going process of quality improvement in teaching and learning.

Teachers will need to employ strategies for dealing with a diverse range of learning needs in the classroom. This will include methodologies that provide variety in the teaching and learning process. If the same methods and materials are applied for all, the learning needs of many learners will not be met. This will be reflected in low levels of achievement.

It is therefore essential that:
- schools respect and accommodate differences between learners;
- opportunities are provided for learners to learn both independently and from and with others;
- the school and classroom setting is safe and conducive to effective learning. Positive discipline is established in a class where there is a supportive atmosphere, where the work is experienced by the learners as challenging and meaningful, and where learning is organised efficiently.
- learning and teaching materials provide a positive representation of all groups in society without stereotyping.

The opportunity must be provided for all learners to achieve in all Learning Areas to their full potential. This includes learners who leave school, either before the end of the four-year cycle, or at the end of it. Learners who leave school and return to work in their own community have as great a need for a good, appropriate education as those who those who may eventually continue to study further. The curriculum approach must therefore take account of the multiple intentions of learners when they leave school. Teachers are also expected to ensure that girls and boys have equal access to all aspects of education. All strands of all Learning Areas should be presented so that they are equally appealing and useful to girls as they are to boys.

Schools should ensure that every learner has access to the curriculum at an appropriate level. The inclusive nature of the curriculum means that learners with disabilities should, as far as possible, be able to participate in the normal education system, or that special provision should be made for them. Modifications should be made to suit learner needs, as required. The needs of exceptional or gifted or vulnerable learners need to be met. This will be achieved by effective differentiation of learning, together with the provision of a clear programme of specific interventions to overcome difficulties. All Learning Area syllabuses take such learners into account. An adequate range of quality learning and teaching materials must be developed for these learners.

It is recognised internationally that, with universal access to education, learners entering secondary school have a very wide range of levels of achievement. This is particularly evident in Mathematics and Science, where studies have indicated just how wide the gap between the highest and the lowest achievers may be.

The Core and Extended programmes of study in some Learning Areas (described in Section 8 of this Curriculum Framework document) are designed to accommodate learners working at these very different levels, from the lower end of the Core to the upper end of Extended. An assessment structure to support these programmes of study, leading to the award of the new qualification, the Uganda Certificate of Lower Secondary Education (UCLSE), is also being introduced.

It is not intended that learners following the Core and the Extended programmes of study should be taught separately. Rather, it is expected that teachers will guide higher-achieving learners to continue on to the extended exercises whenever they are able to do so. These learners will do additional tasks related to the topic, but requiring higher order thinking skills.

The key difference between the proposed new approach and that taken previously is in the provision made for learners who have different levels of ability. All learners will follow the same broad programmes of study. Within this, higher achievers will be given more demanding tasks which will extend their understanding, while lower achievers will have the time to develop a real grasp of the understandings and skills that they will actually need and use in their future lives.

10.2 Banking vs. Problem-posing education

The reformed curriculum aims to ensure that learners understand what they learn. At the same time, it will help learners to acquire the skills, values and attitudes they need to apply their knowledge to everyday life.

One way to think about the new approach is to think of the traditional approach as **banking education.** In banking education, the teacher regards the learners as empty buckets which should be filled with knowledge. The learners are then tested by being asked to reproduce the knowledge the teacher has given them. This method relies a lot on the learner listening to the teacher, copying notes from the board, learning them by rote, and reproducing them later. This can even be done successfully without learners understanding what they are writing or reading.

An approach concerned with learners achieving outcomes can be called **problem-posing education.** This presumes that the learners already have their own ideas, knowledge and skills based on previous experience in school or elsewhere. They should be encouraged to think of learning as an active process on their part. It involves a conscious intention to make sense of new ideas or experiences. This improves their own knowledge and capabilities, rather than simply expecting them to reproduce or remember.

In the problem-solving approach, the job of the teacher, therefore, is to build on this existing knowledge and experience. The teacher poses problems to the learners. This makes them think about their own ideas and

experiences, as well as adding new knowledge and skills to it. Learners are also exposed to reality outside the classroom. They look at pictures or diagrams, examine statistics, or read texts from a range of sources. They find out knowledge and ideas for themselves. They are then expected to express these in their own words, not those of the teacher. In this way, they demonstrate that they have understood what they have learnt. Learners are encouraged to be responsible for their own learning, to think for themselves and form their own ideas and opinions. They are encouraged to become critical thinkers, ready to face new challenges and situations for themselves. Learning becomes a cooperative effort between the learner and the teacher.

Education acts as a way of forming the kinds of values and attitudes which will make people good and responsible citizens in the future. It is not just a way of passing on knowledge and skills.

In this approach, there are a number of important elements as discussed below.

10.3   Learning for Understanding

Learning experiences should ensure that learners do not merely acquire knowledge. They must understand it. Learning experiences must, therefore, be motivating. Their purpose must be clear to the learner. Learners should have the opportunity to show their own initiative, creativity and problem-solving skills. The learning experiences require them to consider, test and evaluate various approaches to achieving goals or solving problems. Learning experiences should be meaningful. They should require learners to participate actively by doing and reflecting on their learning, not just passively listening to the teacher or copying notes.

The learning experiences should develop learners' ability to seek, use and evaluate information for a range of purposes. They should involve tasks which require them to:

- Clarify goals and approaches in relation to the information they need for different purposes;
- Show initiative and perseverance in accessing appropriate information;
- Compare and evaluate information and ideas from different sources;
- Critically select and synthesise information in ways relevant to different problems.

Emphasis is placed on understanding concepts and applying methods rather than acquiring knowledge in isolation.

Through these processes, learners do not just acquire new knowledge, concepts or skills. Rather, they make them their own. Understanding develops through linkages between new concepts, ideas and skills and what is already in the learner's brain. Douglas Barnes, an educationist, said that knowledge is both "out there" in the real world and "in here", in people's heads (1976). The fact that it is "out there" and known to the teacher

doesn't mean the teacher can give it to the learners merely by telling them. Getting the knowledge from "out there" to "in here" in the learners mind is something for the learners themselves to do.

The art of teaching is knowing how to help the learners to do it. Simply telling or writing on the board or demonstrating a skill will not achieve this. There must be an activity which makes learners think actively about what they are learning. They use a new skill and "make it their own." A person cannot ride a bicycle by being told how to do it or by watching someone else do it. They must do it for themselves.

In an active classroom environment, learners:

- Reflect on their own existing knowledge and experiences through being asked questions or set activities which question them about their own lives and their previous learning;
- Find out information by using passages for comprehension, diagrams, photographs, statistics, maps;
- Ask questions of the teacher and each other;
- Take responsibility for their own learning (are reflective learners);
- Collaborate in their learning through group work;
- Actively listen to opinions of others (learners can often learn as much from each other as from the teacher);
- Practise skills and make mistakes;
- Connect their learning to experience, for example through questioning, field work or practical activities.

10.4   Acquiring Skills

An essential part of education should be the acquisition of useful skills, both practical and intellectual. A learner who learns a skill has learnt something on which they can build later. The skill will be useful all their life. Knowledge may be forgotten or become out-dated. This is reflected in the saying:

"Give a person a fish and they can eat once; teach them to fish and they can feed themselves for life."

Learning experiences should enable learners to observe and practise the actual processes and skills which they are learning. In every lesson, teachers should ask "What skills can be practiced in teaching this topic?" These may be practical skills or cognitive skills such as the ability to analyse, synthesise, compare and contrast – the 'higher order' cognitive skills. All Learning Areas contribute to the acquisition of Geneic Skills, these have been dealt with in Section 7. All Learning Areas should give learners opportunities to actually practice the skills they learn. A person cannot learn a skill 'in theory'.

10.5   Developing Values and Attitudes

The reformed lower secondary curriculum aims to produce people who are caring, responsible citizens of the country. This means that they need to acquire values and attitudes which encourage them to respect their families, their communities, the country as a whole, and its environment and resources.

In the past, attitudes and values tended to be left only to religious education. Religious education will continue to be important. However, the development of values and attitudes should now be incorporated into all Learning Area programmes of study. For example, Science should ask what the value of scientific discoveries is. It should look at the good and bad ways Science can be used. Technology and Enterprise should question the value of and dangers of different kinds of technology and their social impacts. A good example is the global debate on nuclear energy. Social Studies should feature values and attitudes in almost every topic.

In many cases, this means teaching positive values: which every citizen should have. However, teachers will not be telling learners what they should believe. They will expose them to different points of view and enable them to choose for themselves. Stories illustrating the consequences of different actions or points of view, discussions, debates, drama and role play can all be used to enable learners to form their own attitudes and values. These should be used in such a way that the learners acquire the values and attitudes which will lead to the development of a peaceful and prosperous society.

Consider corruption and its consequences to Uganda in this 2012 article about the Malaria Global Fund. The final sentence refers to the loss of these funds in Uganda. Such a piece might be included in a Social Studies unit about good governance.

> According to WHO, an estimated five to six billion dollars is needed annually to achieve the malaria targets. In 2010, $1.7 billion was committed to the cause, increasing to $2 billion in 2011. Funding for malaria, however, decreased in 2012, and is estimated to continue to decrease to $1.5 billion annually by 2015. This is largely through lack of funding for the Global Fund to Fight Aids, Malaria and TB by the international community.
>
> GFTAM estimates that there is a $3.3 billion gap in funding needed to achieve and sustain universal coverage of essential malaria interventions including artemisinin-based combination therapies, rapid diagnostic tests and long-lasting insecticidal nets up to the end of 2015.
>
> Evidence of the mismanagement of the malaria grant has been reported. The latest being in Uganda where the loss of a $51 million malaria grant from the Global Fund resulted in the July arrest of three Ministry of Health employees and prompted a police investigation into the matter.

Learning Outcomes at Senior 3 and Senior 4 levels include these:

- Appreciate the need to respect human rights and the rule of law in order to maintain a peaceful society (attitude (a)/ value (v), generic skills (gs))

- Be able to read and understand newspaper articles or understand television news about international events. (skill (s), generic skill (gs)).

The extract would probably be part of an activity whereby learners would develop an understanding of the content of the article. They would form an attitude towards the theft of public funds, and also towards people who steal money meant for malaria prevention work. Ensuring that young people acquire such attitudes may help to prevent similar events from occurring in the future.

10.6   Acquiring Knowledge

Learners' minds are not empty buckets to be filled with information. However, this does not mean that knowledge is unimportant. People cannot learn any concept or develop any skill without a basis of knowledge. New knowledge should as far as possible be based on previously acquired experiences and knowledge. Building on experience will enable the learner to perceive the connection between the world outside school, and what is learned in school. Teaching should help learners to realise what they might already know about something. They will form ideas or questions about it in order to find out more.

Knowledge should be selected because it is relevant and useful in life outside school. It should not be there simply because it is traditionally part of a school 'subject'. The focus is on the needs of the learner - not traditional content. Clear learning outcomes and expected levels of achievement will include the sequence of learning for all levels of learning ability.

The local environment and community should be used as an extension of the classroom. The environment is a field to be researched. It also has resources from which to obtain information and knowledge, and to stimulate investigation, enquiry and creativity.

10.7   The Interconnectedness of Learning

Teachers should emphasise the interconnectedness of understanding, skills and values, both within and across different Learning Areas. Schools should provide an environment in which the development of understanding, skills and values are seen as an integrated and continuous process. This is why the curriculum

has "Learning Areas". It is why the acquisition of Generic Skills links all Learning Areas. Teachers should link work in one Learning Area with other Learning Areas, and also with the Generic Skills

The curriculum can help learners to make these links for themselves in two ways. Whilst learners should be encouraged to become independent, they should be provided with opportunities to learn from and with others. Learners should be enabled to acquire a repertoire of learning strategies and practices, develop positive learning dispositions, and develop the will and confidence to become agents in their own learning.

Teaching methods should also take account of what the learner knows already. This includes building on prior learning. It also takes account of the personal and cultural experiences of different groups of learners. In this way, teachers can plan for subsequent learning.

10.8   The Learning Environment

The environment in which learners learn, strongly affects how they learn, and what they learn. A clean, well planned, comfortable, friendly and pleasant environment is more effective for learning than a dirty, uncomfortable or unfriendly place with no plan or proper layout. To ensure a good learning environment, there is a range of factors to consider:

Cleanliness

Too many classrooms are dirty, with rubbish on the floor, paint peeling off the walls, unclean windows and no proper plan for the furniture. Such conditions are not a conducive learning environment. Even if the facilities are poor, they can be kept clean.

Furniture

Classroom furniture needs to enable learners to work comfortably from textbooks and to have a solid surface on which to write and draw.

Arrangement of furniture

The reformed curriculum emphasises the value of learning by sharing in groups, having group discussion and cooperation. Where possible, desks and chairs should be arranged in groups or circles rather than in rows facing one way. Learners need to face each other. You cannot discuss or argue with someone's back.

Use of Classroom walls

Classroom walls can be used for pictures, photographs, charts, maps and diagrams. These can be

bought, made by the teacher, or they can be the products of learners' work. A good idea, which costs nothing, is a wall newspaper, in which learners write things about themselves, stories, events in the school or local area, scientific experiments they have done, accounts of sports activities like soccer or netball matches, or produce art work. These are then pinned or stuck on the wall. They become things learners can learn from. It is a way of sharing learning. If there is no wall space, things can be hung up on a wire across the classroom.

Ownership of the classroom

A particular group of learners should "own" the classroom and feel it belongs to them. Learners should feel pride in the classroom and want to keep it clean and tidy. This should be the class which most often sits in that room. Competitions can be organised at intervals, for the best kept classroom.

School environment

The whole school environment contributes to learning. This should be kept clean with grass cut, flowers and trees planted and rubbish bins for waste disposal.

Toilets

These are often a problem in schools if they are not cleaned regularly. It is not easy to learn happily if the school environment smells or if people avoid going to a toilet because it smells.

Kitchen, dining hall and dormitories

In a boarding school the kitchen and dining hall must be kept clean for similar reasons.

In order to implement the reformed curriculum, the challenge will be to transform current classroom conditions into learning environments where these sorts of activities and approaches are practised.

This section has discussed what the approach to learning should be. Various examples were given. Figure 10.1 presents a wide range of strategies for helping learners to achieve learning outcomes. They are in eight categories.

Figure 10.1: Strategies for participative learning

Ideas
- Concept mapping
- Brainstorming
- Inquiry and curiosity
- Predict, observe, explain
- Open ended experiments

Problem solving
- Brief design
- Model building
- Whole group extended
- Decision making process
- Testing solutions

People
- Peer teaching
- Cooperative learning
- Interviews
- Visits and visitors

Skills and processes
- Investigative processes
- Practices
- Mastery learning
- Skills development
- Values clarification
- Process writing

Learning may be achieved through:

Media
- Debates
- Story- telling
- Small- group discussion
- Class discussions
- Creative writing
- Quality questioning

Personal experience
- Learners' personal experiences
- Investigations
- Hands-on activities
- Interactive learning
- Excursions, field trips

Research
- Small group research
- Library assignments
- Analysis of hand data
- Collection of material

Presentations
- Role play
- Drama and dance
- Talks and reports
- Demonstration
- Posters
- Story shells
- Simulation

11. Learning and Teaching Materials

The reformed Lower Secondary Curriculum will be delivered using textbooks which have been developed, designed and produced to achieve the intentions of the reform. The textbooks must:

- be interactive;
- be inclusive;
- accommodate all learning abilities;
- be contextually relevant;
- incorporate real-life situations;
- contribute to the acquisition of Generic Skills;
- embed the values considered appropriate;
- develop the full range of cognitive skills;
- use 'assessment for learning'.

To achieve this requires sustained attention to the pedagogical characteristics of the learning material.

The following pages exemplify how some of the above characteristics might be handled.

(a) Is a 2-page spread from a textbook for an S2 Science course in Britain.

(b) Is a notional extract from an S2 Maths textbook for the Uganda Certificate of Lower Secondary Education (UCLSE). It illustrates how the material would incorporate assessment items for the 'core' and 'extended' programmes of study.

A) Extract from Exploring Science: How Science Works 8

8Ld 'Ear 'ear

How do we hear sounds?

Most animals use ears to hear things. Many animals have a much wider range of hearing than we do. Whales can communicate using both sounds that are too low for humans to hear and sounds that are too high for us to hear.
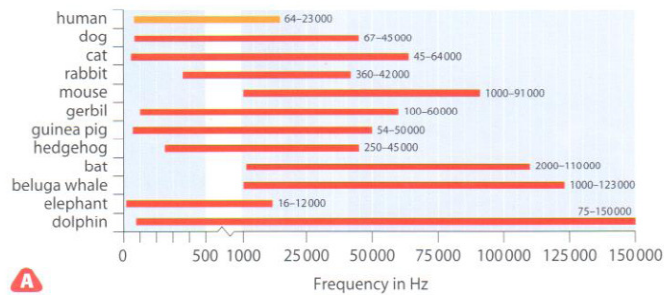
A dog's hearing is twice as sensitive as ours. For dogs, exploding fireworks sound as loud as being next to a road drill.
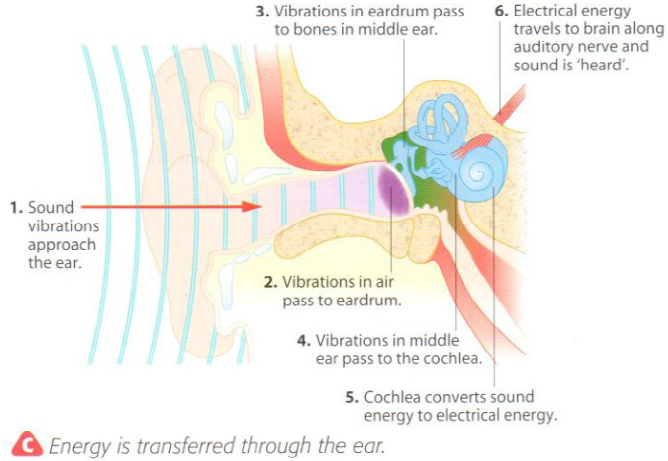
Chart A — hearing ranges (Frequency in Hz):

Animal	Range (Hz)
human	64–23000
dog	67–45000
cat	45–64000
rabbit	360–42000
mouse	1000–91000
gerbil	100–60000
guinea pig	54–50000
hedgehog	250–45000
bat	2000–110000
beluga whale	1000–123000
elephant	16–12000
dolphin	75–150000

A

1 a Name four animals that have hearing that is different from ours.
  b Explain how their hearing is different.
2 Why can dogs hear a dog whistle but humans cannot?
3 A 'bat box' detects sounds made by bats and converts them into sounds that humans can hear. Why do scientists use bat boxes?

How would you find out whether everyone can hear the same frequencies of sound waves?

B

A signal generator and loudspeaker will produce sound waves of set frequencies that you can listen to.

Sound waves travel through the air and into the ear, making the **eardrum** vibrate. These vibrations then cause the three small bones in the ear to vibrate and these in turn cause the liquid inside the **cochlea** (pronounced '*cok-lee-a*') to vibrate. The cochlea changes the sound waves into electrical signals called **impulses** that travel down a nerve to the brain. When the impulses reach the brain, we hear the sound.

3. Vibrations in eardrum pass to bones in middle ear.
6. Electrical energy travels to brain along auditory nerve and sound is 'heard'.
1. Sound vibrations approach the ear.
2. Vibrations in air pass to eardrum.
4. Vibrations in middle ear pass to the cochlea.
5. Cochlea converts sound energy to electrical energy.

C *Energy is transferred through the ear.*

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4 What is the main energy change that happens in the ear?

5 Which part of the ear:
   a detects the sound waves
   b sends signals to the brain

c passes the vibrations from the eardrum to the cochlea?

6 Draw a flow chart to show how energy is transferred through the ear. Ⓗ Ⓢ Ⓦ

Ear damage

The ear is very delicate. It contains thin membranes (thin layers of cells) and tiny bones, which are easily damaged.

- The ear can get blocked by wax and the eardrum cannot vibrate. A doctor can wash out the wax and cure the deafness caused.
- Accidents or a loud bang can damage the eardrum. This may repair itself.
- The middle ear can get infected. Ear infections can be treated by **antibiotics**.
- As people get older the tiny bones in their ears can fuse together and so don't vibrate.
- Sometimes the nerve cells in the cochlea do not work as well when you get older so the signals are not sent to the brain.
- The cochlea can be damaged by loud noise, for example from nightclubs or wearing personal stereos that are too loud. There is no cure for this.
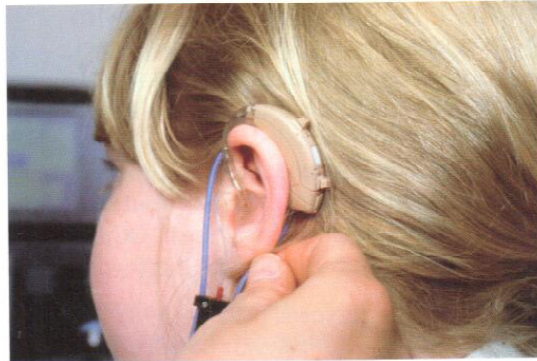
D A hearing aid can be used to make sounds louder.

7 Name three ways in which the ear can be damaged.

8 Think of a plus, minus and interesting point for these statements:
   a A mouse should be able to hear sounds from a greater distance
   b Humans should be able to hear much higher frequencies.

9 Midwives use a piece of equipment called a pinard. Explain how you think it works.

F A midwife using a pinard.

People with poor hearing started using large hearing trumpets in the seventeenth century. The first electrical hearing aid was made in 1902 by American inventor Miller Reese Hutchison (1876–1944).
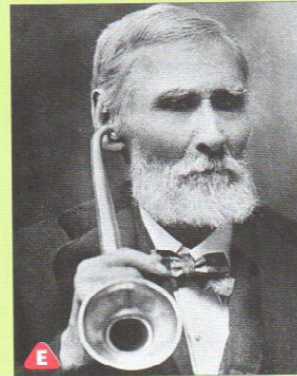
I CAN...

- describe differences in the ranges of hearing of different animals.
- describe how vibrations travel through the ear.
- list some ways in which ear hearing loss can occur.

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B) Exemplar Core and Extended exercises for Mathematics

In a textbook unit for Senior 1 in the **Patterns and Algebra** strand of the Mathematics Learning Area, all learners are required to *analyse sequences of numbers and patterns*. They will be taught to construct and analyse sequences with questions such as the following:

Core level question on Sequences

Opio used brown and white beans to make the first four patterns in a sequence.
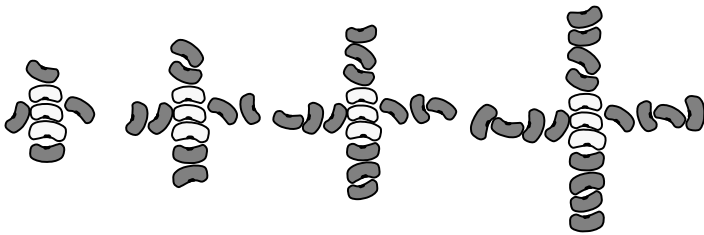
a) Make and draw the next pattern in Opio's sequence.

b) How many brown beans and white beans would you need to make:
   1) the 6th pattern? 2) the 20th pattern? 3) the 100th pattern?

c) Write an expression for the total number of beans in the nth pattern in the sequence.
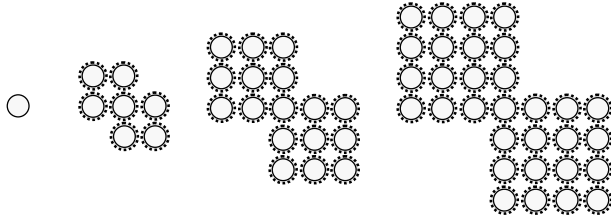
d) Create a sequence of patterns of counters (e.g. beans, seeds, bottle tops) in which the nth pattern has $3n + 2$ counters.

[Answers: a) Diagram with 3 white and 4 ×5 brown counters; b1) 24 brown and 3 white; b2) 80 brown and 3 white; b3) 400 brown and 3 white; c) $3 + 4n$; d) Sequence of patterns with 2 constant counters and 3 growing 'arms' of different counters]

This question requires learners to analyse the structure of a sequence based on a simple linear expression, and to use the concrete context to find further terms in the sequence. They must then express the pattern algebraically, recognising the role of the white beans in representing the constant, 3, and the brown beans in representing the variable, n, while the number of growing 'arms' in the sequence gives the coefficient, 4. Finally learners are asked to create a new pattern based on a different simple linear expression, $3n + 2$. Lower-achieving learners may be expected to take time to understand these ideas, and will need to practise them with further questions of a similar type. Higher-achieving learners, on the other hand, may be expected to complete this exercise quite quickly. They may go on to solve more complex problems, as in the following question:

Extended level question on Sequences

Aisha used bottle tops to make the first four patterns in a sequence.

a) Make or draw the next pattern in Aisha's sequence.

b) How many bottle tops would you need to make the 20th pattern?

c) Write an expression for the number of bottle tops in the nth pattern in the sequence.

d) Create a sequence of patterns of counters in which the nth pattern has $n^2 + 2n + 4$ counters. Use the counters to show the structure of the algebraic expression.

e) Use counters to show the structure of the algebraic expression $n(n + 2) + 4$. What do you notice?

f) Work with a partner or in a group. Each learner should write another expression in n^2, and use counters to show the structure of their expression. Then learners swap expressions, and use counters to represent each others' expressions. Discuss and record what you find out.

[Answers: a) Diagram with two 5^2 squares, overlapping at one corner; b) 799; c) $2n^2 - 1$;

d) Sequence of patterns, e.g.
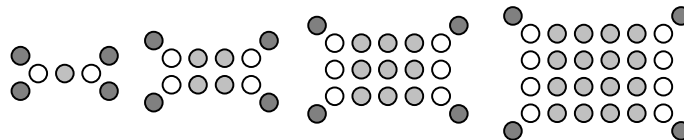
e) Sequence of   patterns, e.g.

12. Assessment

12.1   Reforming assessment – rationale

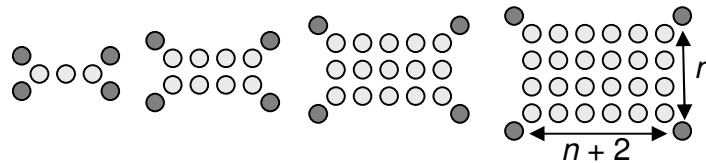There is a national consensus on the need for reform of the lower secondary curriculum and the associated assessment structure. This consensus springs from two major concerns.

First, in the past the education system was too focused on rote learning and knowledge retention. This focus was exacerbated by the formal, academic nature of the 'O' level examinations taken at the end of Senior 4. Learners were unable to use their classroom knowledge effectively, or to apply it to solve problems in novel situations.

Second, the curriculum and its associated assessment regime were primarily designed to meet the needs of the small minority of learners who would proceed to higher levels of education. Little attention was paid to those who would leave school after completing their lower secondary education. These learners, who form the great majority of the school population, were branded as 'failures' and were left with very limited opportunities.

As explained in Section 6 of this Curriculum Framework document, the new curriculum is designed to recognise and build on the abilities of every learner, providing them with lifelong generic skills that will be of use not only in school but also in the wider community and in the world of work. The curriculum is phrased in terms of Learning Outcomes which emphasise the development of the learner's understanding of key concepts and on their ability to apply their knowledge effectively in a range of situations. The assessment structure must be similarly reformed to support the new curriculum, with instruments that focus on the learner's skills and understanding, not just on their ability to recall facts and techniques with little understanding of why these work or how they may be applied to solve problems.

The changing educational landscape that follows the introduction of the new outcomes-based curriculum and the successful implementation of the Universal Secondary Education policy requires a revised, skill-oriented approach to assessment that will support learning and reward achievement at all levels. This will be criterion-referenced to ensure that standards can be maintained year by year. The new approach to assessment will support the changed emphasis in the nature of learning and teaching under the new curriculum by:

- Assessing the learners' *understanding*, not just their knowledge, of key concepts in each Learning Area;
- Focusing on the learner's ability to apply their knowledge in a range of situations;
- Enabling the learner to demonstrate a selection of relevant generic skills, as discussed in Section 7 of this Curriculum Framework document;

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- Using a diversified range of assessment techniques;

- Encouraging the development of learners' abilities to reflect on their own learning and carry out self-assessment.

The curriculum and assessment agencies are collaborating on the development of Learning Area syllabuses and programmes of study and on the design of assessment materials. These materials will support classroom learning in the new lower secondary curriculum and provide for the assessment and reporting of achievement for all learners following the curriculum.

12.1.1   Formative assessment of the outcomes-based curriculum

Assessment of the new curriculum is based on the principle of outcomes-based education. One key aspect of this is the idea that whenever learners answer a question or draw a picture or write a few sentences, they are demonstrating something that they can do. They are showing evidence of achievement of a learning outcome. The point is not whether they succeed or fail in meeting the teacher's (or their own) expectations. In demonstrating their achievement level they are showing what they can do, and they are indicating what they should do next in order to make further progress. Thus one function of formative assessment may be diagnostic: it enables the teacher to identify those learners who need further assistance to develop a full, accurate understanding of the concepts being studied.

Particularly important are the key purposes of 'providing information to teachers to help them to improve instruction and enhance learning', and of 'providing feedback to learners to enable them to participate in decisions and plans to ensure their continuous progress'. However, it is often the case that the main focus is on summative assessment. This may dominate learning and teaching, so that even the teachers' own classroom assessments are designed to mimic the formal, written tests and examinations of summative end-of-course assessment.

None the less, good teachers are likely to carry out small-scale, informal assessments every day in every lesson and to use these formatively – but they may not realise that they are doing so! Every time the teacher listens to an explanation from a learner or a response to a question, every time they observe the learners engaged in an activity or mark a piece of work, they may be picking up clues about the learners' level of understanding and noting any misconceptions that they may have. Given sufficient encouragement, learners will also be able to reflect on their piece of work and be able to offer a commentary on what they've done, what could have been done better, what alternative methods could be used, and so on. This evidence – which is assessment-based evidence, however informal – can form the basis of a dialogue between teacher and learner out of which can come decisions about what to do next, and how to approach the learner's next steps.

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Participation in this process by the learner may form a key part of the development of learning management skills.

Each of these actions by the teacher is an example of formative assessment. With the introduction of the reformed Lower Secondary curriculum, and the new emphasis on skills and understanding, teachers are encouraged to develop their use of this type of informal formative assessment and to make full use of it to help them to structure all aspects of learning and teaching.

The following example of two learners' responses to a spelling test illustrates how this approach to assessment may be applied.

Example 12.1: Outcomes-based formative assessment – English Language spelling test

Consider the performances of two learners, Kato and Aida, on an English language spelling test.

Words to spell	Kato	Aida
knife	naise	nife
asked	usi	askckt
cattle	call	cattell
circle	sluk	serkel
thumb	fob	thubm
village	vij	viledje
kept	gept	ceped

The teacher gave both Kato and Aida 0 marks out of 7 for their efforts. The scores of 0/7 are clear measurements: the words were not spelled correctly; the behaviour was wrong; both learners did equally badly on the test.

However, looking carefully at the words written by the two learners, it is possible to see that Aida shows some understanding of letter-sounds and phonetics. Consider this alternative scoring rubric for the spelling test:

Level 1 – Basic	Level 2 – Low	Level 3 – Satisfactory	Level 4 – Good	Level 5 – Excellent
Identifies some common symbols as representations of objects or words	Identifies letters as the basis of writing	Identifies some groups of letters as relating to appropriate sounds or syllables	Understands and applies the relationships between letter sounds and word sounds	Uses conventions of spelling accurately and remembers exceptions for common words

Now, apply the alternative scoring rubric to assess the spelling performances of Kato and Aida. What conclusions may be drawn about the levels of the two learners?

Using this alternative scoring rubric, are they working at the same level?

When the teacher uses the alternative scoring rubric they are inferring what went on in Aida's head as she tried to spell. These inferences can be supported with evidence drawn from particular examples. The teacher is judging the learner's ability, not simply on the basis of a score, but by analysing her work and inferring what she can do. This kind of inference is what teachers do naturally, to help them to plan the next steps in the learning process. Informal, formative assessment often involves teachers in making judgments based on inferences like this.

This is an example of a simple *criterion-referenced* assessment. The scoring rubric does not produce a score based on 'right/wrong' marking. Rather, it makes use of a set of *criteria* which describe five levels of performance. The criterion for each level is expressed in terms of what the learner can do. The criterion for the next level up indicates what they cannot do yet but may do next – how they may be helped to progress.

For effective formative assessment, teachers need to observe learners carefully in order to pick up clues about what they think and can do. This will impact on the nature of the tasks that the teacher sets, the questions that they ask and the way that the class is organised. Teachers cannot get many clues about what their learners are thinking if they are always talking and the learners are always listening! On the other hand, a teacher can get lots of clues when learners are talking, writing, drawing, explaining, translating, building, pretending, questioning, classifying, collecting and imagining, and the teacher is watching, listening and asking.

Classroom assessment of this sort allows teachers to assess the learner's achievement of a much wider range of outcomes, including generic skills as such as Communication and Problem-solving. It also provides the opportunity to assess the learner's values and attitudes, such as their ability to Participate in the sustainable

socio-economic development of the country or to Develop a healthy society. For instance, the project in Example 12.2 provides opportunities for teachers to identify the learners' development of a range of skills.

Example 12.2: Exemplar Senior 3 project in Technology and Enterprise

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Eating for Health

Use a questionnaire to collect and analyse information on whether people in your school or surrounding community eat balanced meals.

The research should be conducted by teams, with five or six learners in each team.

Activities to be carried out by each team

1. Hold a brainstorming session and write down 10 to 20 ideas on the questions you are going to ask the selected people and how you will collect and analyse the information.

2. Produce a flow chart or flow diagram with the steps you will take to carry out the task.

3. Develop a questionnaire with the questions you will ask.

4. Collect and analyse the information.

5. Draw a table which shows the foods eaten by each person and the food group it belongs to.

6. Present your findings graphically, for example on a bar graph or pie chart.

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This work will allow the teacher to judge their learners' acquisition of a range of the generic skills described in Section 7 of this Curriculum Framework document, including *Communication*, *Social and interpersonal skills*, *Critical thinking* and *problem-solving* and *Numeracy*. For example, under Numeracy, learners are expected to "Use functional Maths". An aspect of functional Maths is the skill of graphically presenting data. Hence, an assessment rubric for thew construction of a simple bar graph might be:

	Level 1 – basic	Level 2 – low	Level 3 – satisfactory	Level 4 – good	Level 5 - excellent
Score	1	2	3	4	5
descriptor	Axis not horizontal or vertical ; bars or lines but not showing quantities ; no title	Axes horizontal and vertical ; no labels ; lines instead of bars ; lines showing wrong quantities ; no title	Axes not labeled ; bars drawn but only one or two correct ; no title	Horizontal and vertical axes drawn ; labels correct ; some bars show wrong quantities ; title not appropriate	Horizontal and vertical axes correctly drawn ; axes labeled correctly ; bars show correct quantities ; appropriate title

The transition to the use of formative assessment of this type will require careful teacher preparation and orientation. It will give rise to significant resource demands quite apart from the reform of the curriculum and assessment structure as such, but the results will be seen in much more effective learning and teaching in the classroom. Furthermore, appropriate tasks and activities with valid scoring rubrics are a key feature of the textbooks and teacher resource materials that have been developed to support the programmes of study in the new lower secondary curriculum. These will offer valuable support to teachers as they develop their ability to use formative assessment in the classroom.

12.2 Criterion-referenced assessment

The reformed Lower Secondary curriculum is concerned with the learner's achievement of a wide range of outcomes. As explained in Section 8 of this Curriculum Framework document, the programme of study for each Learning Area is expressed using statements of *desired learning outcomes* for each strand in each year. These present what learners will be expected to achieve at each point in their lower secondary education. The learning outcomes are framed as knowledge, understanding, skills, and attitudes/values, with Generic Skills indicated where appropriate. Previously, such statements have been called 'learning objectives' and that is still a useful phrase, but the use of the term 'outcomes' puts the emphasis on what the *learner* will do rather than on the aims of the *teaching* – the 'objectives'. Each outcome is accompanied by one or more *Evidence of Achievement statements*, as demonstrated in Example 12.3 below. Note the use of the action words *list*, *identify* and *find* to present the Evidence of Achievement statements in the second column.

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Example 12.3: Outcomes and Evidence of Achievement statements in Social Studies

Senior 2 Sub-strand of Time and Continuity: *How and why Europeans came to Africa, divided it up and ruled it*

Selected Learning Outcomes	Selected Evidence of Achievement statements
Learners should	Learners should be able to
Understand why the Europeans came to Africa and divided it up (understanding (u)) Know which countries were involved in dividing up Africa (knowledge (k)) Be able to locate on a map the areas ruled by the different European countries (skill (s)) (generic skill (gs))	List 4 reasons why Europeans came to Africa in the nineteenth century and why they divided Africa up to be ruled by them Identify the European nations which took part in the division of Africa Find on a map 2 areas occupied by each of the European countries

The new outcomes-based curriculum requires a criterion-referenced system of assessment. As seen in Example 12.3 above, one of the key features of such a system is that the learner's achievements are assessed against criteria stated in words rather than as numbers. Example 12.4 below demonstrates the process of criterion referencing for some of the Social Studies learning outcomes *related to the* Senior 2 sub-strand *How and why Europeans came to Africa, divided it up and ruled it.*

Example 12.4: Criterion-referenced Scoring Rubric for Why Europeans came to Africa

	Level 1 – Basic	Level 2 – Low	Level 3 – Satisfactory	Level 4 – Good	Level 5 – Excellent
Score:	1	2	3	4	5
	Knows that Europeans came to Uganda – i.e. that there was a time before any Europeans had arrived	Knows that Europeans came to many different parts of Africa in the nineteenth century Gives one or two reasons why they came, but without specific examples	Identifies at least two different European nations which occupied parts of Africa, and two or more areas that Europeans occupied and ruled, but does not identify which groups went where	Identifies at least two different European nations which came to Africa and gives an account of their reasons and process of occupation	Correctly identifies all the European nations which took part in the division of Africa, with an account of each one's reasons and activities

This scoring rubric uses a scale of achievement, with a criterion-referenced performance descriptor for each of the five levels. These descriptors enable the teacher to decide on the level of achievement for each learner.

The levels derive from the Evidence of Achievement statements. They also help to identify the next steps that will allow the learner to progress. A profile of performance can be created, using the clearly expressed descriptors. This is much more detailed and more useful (in the formative sense) than any numerical mark. For example, consider what a simple 3 out of 5 would mean (without any descriptors), as opposed to the '3' on this scale of achievement levels.

12.3   Formal assessment from Senior 1 to Senior 3

An increase in the use of informal, observation-based assessment does not mean that tests and examinations do not have a role in the classroom. A test can be efficiently administered to a large number of learners, and quickly provides a rough measure of their achievements in some areas of the curriculum. A test can also be a useful formative assessment tool if the teacher analyses the learners' answers to guide further learning and teaching, rather than simply scoring and summing the test marks.

So tests and in-school examinations will continue to be a feature of school life. These are the responsibility of teachers, who should become very well acquainted with the desired learning outcomes for the Learning Areas and year groups that they are teaching. However, in Senior 1 to 3 the emphasis in the new lower secondary curriculum on learners' understanding of what they are learning may well lead to fewer such assessments. Before setting a formal test or examination the teacher should always ask: 'What useful feedback to the learner will be given after the assessment?' Furthermore, teachers should use assessment mechanisms which are in line with the aims of practical learning and the application of knowledge, which are essential aspects of the new curriculum. In this respect observation-based assessment techniques are often likely to be more appropriate than timed, written tests, at least in the first three years of lower secondary education.

Where more formal written assessments are used, new types of question and task will be needed to ensure that the skills, values and attitudes that are embedded in each Learning Area are assessed. Such innovations will no doubt be seen in the Uganda National Examination Board's examination papers, and this may help teachers to create their own. Teacher-orientation courses for curriculum implementation will address this issue. Good, skills-based assessment items and activities for school use form an essential part of textbooks and teacher resource materials developed to support the new curriculum. School tests in at least the first three years of secondary education do not have to be constrained by the examinations taken at the end of Senior 4. It is hoped that teachers will develop their own innovative ways of assessing, which produce valid and reliable results which are of benefit to their learners.

12.4   The issue of assessment-related stress

It is widely reported that the current assessment system leads to too much stress being put on the learners. Parents, teachers and educational leaders are all aware of this, and it is a problem that must be addressed. Reducing the curriculum to eight Learning Areas and the coverage of each Learning Area syllabus will help to reduce the pressure on the previously over-crowded curriculum. As explained in Section 8 of this Curriculum Framework document, part or all of each Learning Area will be identified as forming the Core programme of study. This will constitute the essential material which will be presented to all learners, no matter what their level of achievement. In addition to this, in some Learning Areas there will be Extended programmes of study with learning and teaching materials that are designed specifically for those higher-attaining learners who can benefit from them. But the focus on the Core programmes of study will give all learners, including the lower achievers, time to develop a full understanding of the key concepts and skills that they actually need, rather than memorising facts with little grasp of their real relevance or meaning.

Similarly, a greater use of informal, formative assessment and a reduction in the number of formal summative tests carried out in schools, will reduce some of the pressure on the learners. However, it must be acknowledged that the pressure does not originate solely from the curriculum, nor from the examination system. Many factors drive the system: individual candidates, encouraged by their families, compete for places in prized institutions or access to rewarding job opportunities; schools strive to attract more and better learners; education administrators seek to increase the prestige of their schools. Change in the attitudes of all these education stakeholders will be necessary. However, this cannot be achieved through the reform of the assessment system as such.

12.5   The Certificate of Lower Secondary Education

The reform is an attempt to establish a curriculum and an assessment structure that are appropriate for all learners, not just for the small minority who will eventually proceed to Advanced level courses of study. This has led to the replacement of the previous UCE "O" level examinations and the development of a new approach. Learners will still be formally assessed at the end of Senior 4. But the results of those assessments will lead to the award of a new type of qualification, the Uganda Certificate of Lower Secondary Education (UCLSE).

12.5.1 Summative final assessment: catering for the full range of abilities

As explained in section 10.7 of this document, international studies have shown that in all educational systems which provide universal access to secondary education learners entering secondary schools have a very wide range of levels of achievement, particularly in Mathematics and Science, where studies have indicated just how wide the gap between the highest and the lowest achievers may be. So, for example, as Cockcroft (1982)

observes, even in countries such as the UK or Australia which have well-established systems of universal primary and secondary education,

> *'there is a 'seven year difference' in achieving an understanding of place value which is sufficient to write down the number which is 1 more than 6399. By this we mean that, whereas an 'average' child can perform this task at age 11 but not at age 10, there are some 14 year olds who cannot do it and some 7 year olds who can.'*[18]

This wide range of achievement is indicated clearly in the scores awarded to learners in the Ugandan Primary Leaving Examination (PLE). Learners are awarded a grade from 1 to 8, or 9 (fail), in each of four subjects: English, Mathematics, Science and Social Studies. Thus the 'best' aggregate score available is 4, for a learner who scores Grade 1 in all four subjects: the 'worst' is 36, for four results at Grade 9 indicating failure in all four subjects. These aggregate results are used to select learners for entry into different secondary schools. As explained in Section 3.1 of this document, a USE school is likely to accept some learners who scored as low as 28 at the end of primary school. These learners cannot be expected to make any progress with a curriculum that is designed to meet the needs of those at the other end of the spectrum – and, indeed, the results of the old 'O' level examinations taken four years later demonstrated this clearly, especially in Science and Mathematics. It is essential that the new end-of-cycle examination is designed to allow all learners to achieve a grade, whether a high one or a low one, and that all grades can be awarded reliably. That is, we need all the examinations to be accessible to all candidates and to differentiate effectively between them.

12.5.2 Assessing different Learning Areas

There are, broadly speaking, two principal approaches that we can take to getting good differentiation in examinations that are to be accessible to candidates with widely varying levels of achievement. The first of these uses common examination components (all candidates take the same components – question papers, practicals, coursework etc) and the differentiation is achieved **within** each of those. The alternative is to use some form of tiered components, each one targeted on a limited range of achievement: the differentiation is **between** components. Within each of these approaches, some different models can be used.

12.5.2.1 The common component approach

Within this approach the first consideration is how the questions or tasks are framed: what language and what presentational methods will be used so that all candidates can access the task. Some of the (often quite unfortunate) traditional language of examinations may need to be jettisoned because the messages that it gives are not understood equally by all candidates. So, beginning a question with 'Compare and contrast …' or

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[18] Cockcroft, 1982, Par 342 http://www.educationengland.org.uk/documents/cockcroft/cockcroft06.html.

'Evaluate…' may inhibit simpler responses which are, nevertheless, worthy of credit. The use of images as a stimulus may be preferable to long explanations. Questions or tasks set in this way can be said to be 'neutral' with respect to candidates' levels of achievement.

The second consideration is how the differentiation will be achieved. There are two methods that are likely to be useful for the new CLSE examination.

Differentiation by outcome

If a question or task is neutral in its presentation whilst being accessible to all candidates, it will result in a wide range of responses from very low-level comments to high level analyses of the problem. There will be some responses that fall below a threshold at which it is possible to award any credit but others can be categorised against some descriptions that characterise the level of response. In practical terms, the level descriptions will have to relate to the specific task (otherwise there is a serious risk that different assessors will interpret general descriptions or criteria quite differently) so that the design of the question and its marking scheme/scoring rubric will require a good deal of expertise and care.

Some of the most obvious examples of neutral questions with differentiation by outcome are in traditional literary essay tasks or open-ended tasks in art. Many coursework tasks (for example in design and technology) can also be presented in this way. But they are much more widely used than this; the example below shows one such question.

Example 12.5 English Language question that may be answered at different achievement levels

You are going to listen to a passage about six cities of the world. The examiner will read the passage three times. It will be read quite slowly. You will listen carefully.

Before you listen to the passage, look at tasks a) and b) below. You will complete them when you have listened to the passage. You will need to listen very carefully to find out the required information.

a) Listen carefully to the first reading of the passage.

   After the first reading, state the **main point** of the passage.

   [First reading]

b) Now study the table below and note the sort of information that it presents.

   You are going to complete the table.

   During the second and third reading, make sure that you write into the table all the missing information in order to complete it.

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City	Kampala	Nairobi	Perth	London	Los Angeles	Mumbai
Population (millions)	1.4					12.5
Average highest temperature (°C)					29	
Average lowest temperature (°C)	16			2		
Average highest rainfall (mm)						
Average lowest rainfall (mm)		6				

[Second and third readings]

c) Which city would you prefer to live in? Why?

All candidates, whatever their level of achievement, should be able to understand what is required and to make some meaningful attempt to respond to this. But there are not 'easy' and 'hard' questions of this type; rather, there are low-level and high-level responses to the same set of tasks. All candidates attempt all questions (and are thus saved from the discouraging feeling of not being able to answer much of the examination) and the credit that each gains emerges from the quality of his or her answers.

The development of this type of question presents a significant challenge to the question writer, who must create a criterion-based mark scheme that can easily be used by and will ensure consistency between markers. But, in general, this and other common component models of examination will be easier to operate and award than tiered models.

Differentiation using inclines of difficulty

Many common question papers contain multi-part or structured questions in which there is some incline of difficulty; that is, the first parts of the question are easily accessible to all candidates but successive parts are likely to be answered only by the more able candidates. There have been examinations where inclines of difficulty have been attempted across a whole question paper but these are difficult to construct and may result in weaker candidates dropping out of the examination at a relatively early stage; this type of paper is not recommended for use in the UCLSE examninations. At least with the inclines operating within each question, most candidates should be in a position to work through the whole paper, though not completely through many questions.

Questions of this type have to be presented or introduced at a level that is accessible to all candidates. However, the existence of the inclined structure does allow supplementary information to be introduced at a later stage. This type of question is particularly suitable where there is clearly a natural sequence of ideas and issues that are inherently hierarchical in nature and that can easily be related to the structure of learning outcomes in the curriculum. In that case, creating the question and creating the marking scheme are relatively straightforward. It is, however, important to be careful not to exclude weaker candidates at too early a stage in each question and to make the inclines reasonably similar in slope; this will maximise the discrimination without generating too much depression amongst weaker candidates.

12.5.2.2 Tiered examination components

The use of tiered examination approaches is a choice that will derive from the belief that, because of the characteristics of a particular learning area or part of a learning area, it is not possible to create common components. Whilst tiered structures may enable better targeting of examination tasks to candidates who are able to respond to them (and are therefore usually easier to create) the aligning of the grades onto a single, reasonably linear, scale is considerably more difficult to do with confidence, compared to examinations with common components.

There are several important steps to consider before embarking on a tiered model.

- The value to be derived from the use of a tiered model should be made explicit. It is probably not sufficient to choose such a model just because it is common practice elsewhere.

- A case for using a tiered model may be made on the basis that the underlying curriculum is structured in such a way that there is some separation between lower tier topics or approaches and higher tier topics or approaches. In that case, the justification would have to be made in terms of desirable curriculum design.

- There is no clear cut-off in the spread of candidate levels of achievement at which a tiered model becomes essential. It may be possible to cater for a large spread using a common components model; whether this is the case will vary from learning area to learning area.

- A decision to use a tiered model will involve decisions about the grades to be available on each tier.

- The need to award grades reliably on a recognised and accepted scale is paramount; if this cannot be done the examination is unworkable.

Tiered models will carry with them certain entry and grading consequences.

- Students will have to decide, some months before the examination, which tier they will enter. In fact, that decision may have been made much earlier since the learning areas for one tier may be different from those for another.

- There will generally be no opportunity to switch tiers once entries have been made.

- A student entering a tier will have access to a certain range of grades. Very high performance on a lower tier component will not gain a grade above the maximum for that tier. A poor performance on a higher tier component will not earn a grade lower than the minimum grade for that tier; the result will be shown as unclassified.

- It follows that the information about tiered examination must be carefully worded and explicit and the advice given to prospective candidates by their teachers must be carefully judged.

There are several models of tiered examinations that are in use; it is probably only appropriate to review two of these in the context of the proposed UCLSE examination.

A core + extension model

Where a curriculum is clearly and justifiably divided into core and extension sections, a tiered structure in which components reflect the same pattern, may be appropriate. The entry options for candidates would usually to enter either for both core and extension or to enter for core only; it is likely that curriculum considerations would prevent an entry for extension without an entry for core. Such a model would also require results on core and on extension to be certificated separately though on different sections of the same grade scale.

Figure 12.1: Separate Section 1 and Section 2
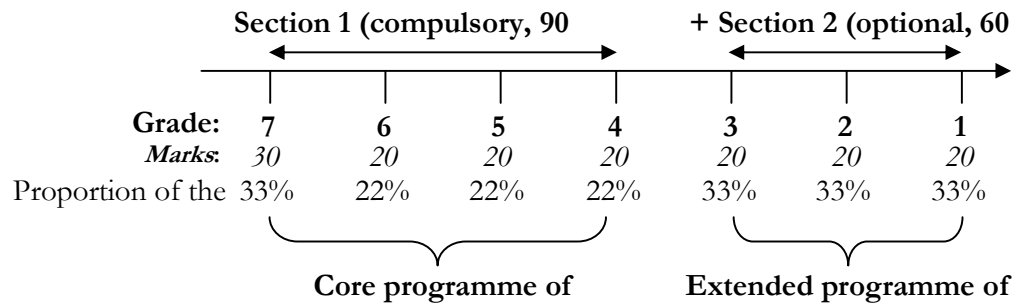
The difficulty with this model is the lack of a usable overlap between the two tiers. Thus, if the core component allows access to grades 4-7 and the extension to 1-3, the placing of candidates on the same grade scale will rely almost entirely on establishing, by judgement, a link between the bottom of grade 3 on the extension and the top of grade 4 on the core.

The new assessment structure is designed to be appropriate for all candidates, whatever their level of achievement, offering them the opportunity to demonstrate what they *can* do rather than what they *cannot*.

Overlapping tiered components

The core + extension model derives from a programme of study that identifies Core and Extension parts. These parts and their characteristics are related to candidates' expectations after S4. From a technical viewpoint it is quite difficult to award grades because there is no grade overlap between the core and extension components. It also requires a longer examination time for those candidates seeking grades 1-3.

A rather simpler model is in widespread use though it will not be suitable for a curriculum that is divided into core and extension. It uses an upper tier component and a lower tier component, with the upper tier allowing access to, say, only grades 1-4 and the lower tier to only grades 4-7. Once again, candidates must make entries for one tier or the other but the examination times can be very similar. Grade awarding is made considerably easier because of the overlap at grade 4, leading to a grading scale about which it is easier to be confident.

All the general considerations regarding differentiation apply to this model as much as to any of the others discussed here.

Mixing assessment models

There may be some Learning Areas that will require a common component model while others require a differentiated component model. In general, this does not present any special problems since the tiered part of the examination will be awarded first, and the common component parts will be added into it to generate the final grade.

In-school assessments as contributions to the final examination

The principles of access to assessment and differentiation described above apply to all types of assessment component so that, although we will most often see differentiated component models used for written papers there is no reason why they may not be used for other types of assessment instrument. These other types are generally used because there are skills that are developed during a learning programme that cannot be assessed in a written paper either because there is not enough time or because the skill cannot be evidenced in written material. The usual approach is to introduce an in-school component into an examination. Some examples would be

- a practical or experimental task in Science; although this may involve data analysis and report writing (both on paper) it may also be important to be able to assess candidates' laboratory skills and to give enough time for a worthwhile experiment to be done;

- a speaking or listening comprehension task in Languages; it is generally far more practicable to conduct these tasks in schools with either a teacher or visiting examiner doing the assessments;

- a performance in Creative Arts; this may be music, dance or drama which cannot be assessed unless the assessor is there at the time of the performance; although assessment from audio or video recordings is theoretically possible these methods rarely allow the full force and value of a performance to be assessed, especially if a group of candidates is involved;

- a piece of coursework in Technology and Enterprise; a research, design, make and evaluate type of exercise, probably conducted over some period of time, will usually provide an opportunity to assess, through observation, a number of underlying skills; such a task can also result in candidates' building portfolios of evidence (containing design studies, research report, photographs, evaluation studies) which can also contribute to the assessment

- creating a painting or sculpture in Creative Arts; because of the time involved this cannot be an examination room task although the resulting artefact can be assessed either by the teacher or a visiting examiner or at the examination board

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It is unrealistic, especially with a modern curriculum, to have a single approach to school-based assessment that covers all Leaning Areas. The choice of examination components of this type will involve discussions about feasibility and cost as well as about the need to identify the skills to be assessed. Some approaches may be unfeasibly expensive either because of the number of candidates involved or because of the time needed or because of the costs of sending examiners or moderators to schools. In some cases it may be unrealistic to expect schools to support some types of in-school assessment. There is a checklist of considerations that will have to be discussed:

- who will construct the task(s) that the students have to do
- whether there should be a choice of tasks and who makes the choice
- what the conditions are for doing these tasks (eg when they have to be done, the time allowed, whether singly or in groups, what equipment may be needed)
- what the teacher is required to do (eg supervise, assess or both)
- what support instructions, materials or training the teachers need in order to carry out their role
- who verifies that the tasks have been managed properly
- what materials or information is fed back to UNEB and when
- what methods of checking, verification or moderation are required before UNEB incorporates the marks into the examination as a whole
- what will happen when things go wrong.

Moderation

If teachers are to make assessments of work done in-school by candidates as part of their final examinations they will have to be given

- suitable information about the task and how it is to be managed

- an understanding of the aspects of learning that they are to assess; this may have come from their familiarization with the curriculum

- a clear set of criteria by which they are to make judgments and whether these are to be, for example, by observation, looking at products or questioning candidates.

Moderation may be needed in order to check (a) that teachers have carried out the assessments as required and (b) that their judgments are at the expected standard. In general, there are three main approaches to moderation.

- It is possible to use statistical methods to adjust teachers' marks to bring them onto mark scales that represent comparable standards. These methods usually rely on using another measure (such as

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marks on written papers) as a benchmark. This is difficult to justify if very different skills are being assessed on the in-school assessment component.

- The products of the in-school assessment, with teachers' marks, can be sent to the board; moderators can look at these and make adjustments based on their judgments (perhaps backed up by statistical evidence). This approach clearly won't work in, for example, the assessment of performance.

- Moderators can visit schools to see the evidence produced by candidates and, if necessary, speak to them. Whilst, in theory, this will allow moderators to see performances, it is often difficult to manage this. Visiting moderation is expensive compared to the other two approaches.

Whilst all these methods are capable of adjusting marks there is no provision for providing feedback to teachers which will help them to improve their assessment techniques. One of the severe disadvantages of statistical moderation is that, although teachers can be told the extent of adjustments that have been made it is almost impossible to say why these were needed. On the other hand, moderation of teachers' assessments by a visiting moderator who has some time to discuss why changes are being made is more likely to promote improvement than moderation on UNEB premises with no or only written feedback.

But all moderators will need training and support and, unless teachers' assessments improve, will need to do the task every year. There may be an alternative approach that supports local teacher networks where they can meet to review assessments that they have made and agree on standards, perhaps swapping between schools in order to do assessments. In considering this, decisions may have to be made with both short-term and long-term objectives in mind. In the short term, the questions are "What can be made to work well at present?", "What measures do we have to put in place to ensure the credibility of the assessments?" and "What can be built into those measures that is likely bring about improvement in teachers' assessments?". The long-term questions are concerned with where we expect the assessment to be in 10 or 20 years' time, assuming that we do the 'right' things now. Is the aim to remove the need for moderation or to reduce it to a level of spot-checking? Could this result in an increase in the weight given to teacher assessment on the grounds that this enhances the range of skills being assessed?

Developing continuous assessment for summative purposes

There is currently debate on how continuous assessment for summative purposes will be developed in the context of the reform. Appendix E presents the rationale for using it, the problems it presents and a possible way forward.

12.6 The Generic Skills Passport

It is proposed that schools will be required to provide each school leaver with a Generic Skills Passport. This will constitute a formal report outlining their achievements, with a particular focus on the generic skills and the values and attitudes that underpin the whole of the reformed lower secondary curriculum. This will ensure that all school leavers, even those who are unable to obtain any qualifications through the Uganda Certificate of Lower Secondary Education (UCLSE), will have a formal record of their achievements at school.

Hence, it is envisaged that schools will develop the Generic Skills Passport and make it available from Senior 1, updating it as learners progress through lower secondary school. The development of a specification for the structure of the Generic Skills Passport will be a process which NCDC will embark on when the new curriculum and assessment has been implemented. There will be collaboration with DIT, so that current approaches to providing skills certification can be accommodated.

12.7 Conclusion

The proposed assessment approaches described in Section 12 complement the curriculum reform and function as tools for enhancing the learning and teaching process. The intention is to evolve towards a regime whereby the formative function is developed, and assessment instruments operate as measures of achievement levels. The reported achievements are reflections of performance of learning outcomes which have been specified, which have transparent criteria and descriptors, and which are clearly understood by learners, teachers, assessors and examiners, advisers and inspectors, and users of assessment reports such as parents, employers and tertiary institutions. In this way, all learners gain from a more objective, a fairer, and a much more appropriate system. The country also gains by affording learners opportunities to demonstrate what they can do. NCDC and UNEB is jointly developing a comprehensive assessment framework. It will present the agreed ways forward for formative and summative assessment for the reformed curriculum. From this, learning areas will derive their specific assessment approaches.

13. Curriculum implementation and evaluation

13.1   A curriculum for all

The school is required to provide an appropriate education for all young people - not for a selected few. The system must prepare educational materials that suit the needs, interests, and abilities of the whole learner population. Programmes have to be adjusted to the needs of the learner, rather than learners selected to fit programme requirements. For this reason, programme developers must seek evidence about the adequacy of an educational programme for a particular learner population. This means that programmes should be empirically tried out before they are approved for use on a large-scale basis. Most curriculum centres established over the last seven decades have adopted this approach. It has become common practice to try out programmes before disseminating them widely. This has become an element of the 'rational curriculum process'.

13.2   Curriculum evaluation[19]

Throughout the process of curriculum development and implementation, a great variety of problems, questions, and dilemmas arise. Essentially, evaluation is concerned with the efficiency of a programme as a whole. The basic concern of evaluation is the success of an entire programme, including all its components.

The problems that evaluation is supposed to deal with vary according to the stage of programme development and utilisation. Accordingly, evaluation methods and strategies differ also.

Quite frequently, evaluation may deal solely with specific components, the focus of a small-scale evaluation study may be a particular chapter of the programme, a particular activity associated with its use, such as the organisation of the dissemination network, or a particular type of learning material included in it, such as a textbook, a teacher's guide, audiovisual aids, extension supplements, experimental equipment, or the teacher support programme. Moreover, an evaluation study may be concerned only with specific features of these components. For example, evaluation may deal with some unique aspect of a textbook such as the quality of the illustrations, the clarity of explanation, the readability level of the text, the sequence of learning experiences, or the adequacy of the exercises. In order to cope with the multitude of problems, a need to

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[19] Material adapted from: Arieh Lewy (ed.) (1977) Handbook of Curriculum Evaluation, Paris, IIEP/UNESCO pages 14 to 25; also, reference to Romiszowski AJ (1981) Designing Intructional Systems, Kogan Page/Nichols, Chapter20, Why Projects Fail

conduct many evaluation sub-studies often arises. A specific evaluation sub-study usually serves to furnish information about one problem only.

Prioritisation and efficacy of studies, within the constraints of time and funds, usually determine just how much resources are devoted to evaluation work.

13.3   Stages of programme development and evaluation

The development of a new curriculum programme is a process that requires a relatively long time. The calendar time needed to complete a programme may vary, depending on:

- The nature of the program;
- The level of perfection aimed at by the development team;
- The staffing and technical facilities available;
- The intensity of the work.

In curriculum centres all over the world, experience has shown that the time devoted to the development of a program generally varies from two to five years. In most curriculum projects, there are usually six stages of program development and implementation. This table of stages (see Lewy) has been adapted substantially for this situation and terminology. The key CURASSE Workplan activities have been added as an extra column in the table. Projected dates and notes have been inserted to show how the CURASSE process conforms (or does not) to the stages.

Table 13.1: Stages in the curriculum development and evaluation process with key CURASSE activities and dates

	Stage	Key CURASSE development activities	Types and roles of evaluation	Key CURASSE WP Activity dates
1	Determination of: general aims; curriculum structure	Decisions about: Aims, principles and values; curriculum framework; Generic Skills baskets; LA structure; Assessment framework; school structure	Studies on: Expected changes; Cultural values; Social forces; Present level of achievement; Feasibility of programmes	Feb 12 – Jul 12 Nov 12 Dec 12 Dec 12 Jul 13
2	Planning	Developing: LA scope and sequence tools; Detailed syllabuses; Learning materials extracts Textbook development Textbook distribution	Examining adequacy of: Learning outcomes; Relevance of EA statements; GS integration; Values, and cross–cutting issues embedding Judgement on appropriateness of LM extracts;	Mar 12 to Feb 13 Mar 13 to Oct 13 Dec 13 to Sep 14 Oct 14 to Dec 14
3	Tryout	Monitoring learning and teaching of extracts in prelim. 'try-out' classes; Modifying extracts	Collection of evidence, using: Observation; judgement; teacher feedback; learner	Aug 13 to Oct 13

	Stage	Key CURASSE development activities	Types and roles of evaluation	Key CURASSE WP Activity dates
			feedback; learner performance	
4	Field trial	Modify the programme of learning; Determine the 'realistic' conditions for effective use of LM	Select sample of learning situations representative of the contextual parameters; Collection of evidence of effectiveness of LM under various conditions	Not envisaged in the plan – see comment below
5	Implementation	Plan for national dissemination of LA syllabuses and LMs in collaboration with: DES; UNEB: teacher support; initial TT system Implementation pre-requisite acts	Collection of evidence on: system linkages; teacher support courses; take-up within ITT; progress of UNEB capacity building to ensure appropriate terminal assessment for 1st cohort	Aug 13 to Dec 16
6	Quality control	Apply recommendations based on evidence from Stage 5; Analysis of learner performance in national and international achievement surveys Plan for further learning and teaching aids development; Build feedback file leading to 'next edition' of LM	Examination efficacy of implementation; Use of NAPE S2 test data, SACMEQ data Studying factors at play in varying levels of effectiveness; Proposing strategies for tackling ineffectual use of LMs	Projected Implementation S1 Jan 17 Projected Implementation S2-S4- 2018, 19, 20

13.4   Planning for curriculum implementation

Once the general educational philosophy, aims and principles have been determined, curriculum centres translate them into specific curricular activities. At this stage, decisions are made concerning the overall curriculum framework, the Learning Outcomes of a particular programme of study, the sequence of learning activities, and the learning/teaching strategies to be employed. For us, this is the Curriculum Framework, the Scope and Sequence tool for each Learning Area, and the elaboration of these into the Main Sections of the LA syllabuses.

Usually, developers do a preliminary trial of some of the learning experiences contained in the emergent programme. At this stage, the programme is still in the process of preparation. Some parts of it are already structured in such a way that they can be tried out with individuals or small groups of learners. However, so far, the only learner-oriented activity that took place during the planning stage was the Link School work. In this curriculum specialists used pre-prepared materials that focus on learner-centred pedagogy. The goal of this was to place Specialists in direct contact with multi-ability groups of learners. From such interaction, specialists might be expected to acquire a "realistic" perspective on the implications of 'interactive' learning,

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within their own LAs, involving large groups of learners from the USE population.

Another aspect of the program that should be examined at this stage is the cost of implementation:

- Does the programme propose the most economic means for achieving its goals?
- Is it feasible for schools and the learners to bear the costs of implementation?

Occasionally funds are available to support curriculum development. But later, no funds exist for nationwide implementation. Thorough examination of various aspects of the programme at this stage can hugely increase its effectiveness. It can also reduce costly trial and error in subsequent stages.

13.5   Preliminary trial and revision of learning materials

Following the substantial workload at the Planning stage, the curriculum team has to develop the first version of the learning material. This includes writing the text, devising learner activities, selecting illustrations, preparing the pilot material. The task of evaluation at this stage is clear. There is a need to assess the scientific quality of the materials, their correspondence to recent developments in the LA domain, their accuracy, and their clarity. Judgment on these issues will usually be made by experts in the particular field of study.

It is also necessary to assess the likelihood that learners will be able to learn from the materials, and acquire the skills and competencies aimed at in the programme of study. This implies examination of the existing cognitive and affective characteristics of the learners. If the program requires specific learning equipment, materials, or learning strategies, the feasibility of such features must be assessed.

A classroom trial is frequently carried out as soon as some self-contained sections of the programme are ready for use. During the trial stage, learners may follow some portions of the new programme before the full course has been completed. Sections of the programme are taught in a small number of classes with the aim of identifying weak points in the programme and of generating suggestions for its improvement. Many types of data are collected by means of such instruments as classroom observation records, judgments, formative tests, interviews. On the basis of systematic formative evaluation results, the preliminary version of the programme is revised.

These trial classes are selected so that they represent the different subgroups of the population for whom the programme is targeted. Schools and classes where teachers have agreed to cooperate with the curriculum development team are selected. Frequently, they are given support training on the programme.

During the trial stage, the curriculum team carefully observes the learning/teaching process in the classroom situation. They encourage both teachers and learners to point out any problems or difficulties encountered in using the programme. At the same time, the curriculum team submits the learning material to various types of experts. They ask them to review the material. On the basis of this expert judgement and the empirical trialling, decisions are made on desired revisions.

A flow chart of the developmental process from a preliminary version of the programme to a modified version is given in Figure 13.1.

Figure 13.1: The process of evaluating and revising learning materials
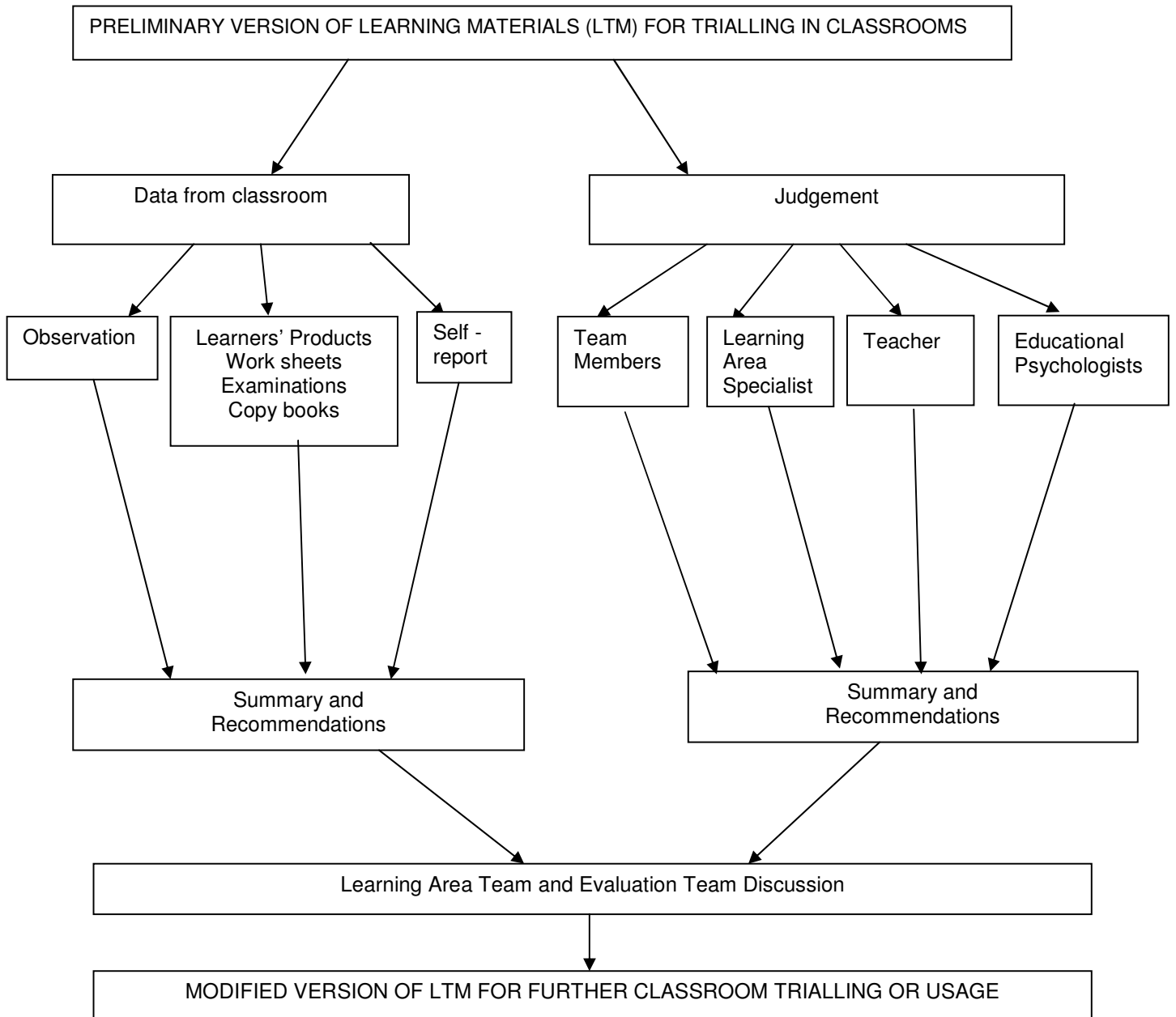
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┌─────────────────────────────────────────────────────────────────────────────┐
│  PRELIMINARY VERSION OF LEARNING MATERIALS (LTM) FOR TRIALLING IN CLASSROOMS  │
└─────────────────────────────────────────────────────────────────────────────┘
         │                                              │
         ▼                                              ▼
┌──────────────────────────┐              ┌──────────────────────────┐
│   Data from classroom    │              │        Judgement         │
└──────────────────────────┘              └──────────────────────────┘
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| Observation | Learners' Products Work sheets Examinations Copy books | Self - report | | Team Members | Learning Area Specialist | Teacher | Educational Psychologists |

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┌──────────────────────────┐              ┌──────────────────────────┐
│    Summary and           │              │    Summary and           │
│    Recommendations       │              │    Recommendations       │
└──────────────────────────┘              └──────────────────────────┘
              │                                  │
              ▼                                  ▼
┌─────────────────────────────────────────────────────────────────────────────┐
│         Learning Area Team and Evaluation Team Discussion                     │
└─────────────────────────────────────────────────────────────────────────────┘
                                    │
                                    ▼
┌─────────────────────────────────────────────────────────────────────────────┐
│     MODIFIED VERSION OF LTM FOR FURTHER CLASSROOM TRIALLING OR USAGE          │
└─────────────────────────────────────────────────────────────────────────────┘
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Summaries and recommendations based on the data sources of two types (see Figure 13.1) are then considered. Decisions are made concerning recommended programme modifications. The modified version is then prepared.

The NCDC CURASSE workplan presents this step as the piloting of learning material extracts. These extracts are being developed by LA teams in the first two quarters of 2013. The tryout is projected to take place from March to October 2013. It is envisaged that the preliminary trialling of selected extracts of textbooks will target all four year levels. Specifications for textbooks are scheduled for preparation during 1st quarter 2014. The procurement, development, production, evaluation and delivery of all textbooks for all LAs for all four year levels is scheduled during the period from December 2013 to March 2016.

13.6   Field Trial

When the revised learning material is available for a whole programme of study, the programme usually undergoes a field trial with a representative sample of the target population. The field-trial stage provides the opportunity to observe the operation of the whole programme in the real world - its expected application in the whole system.

At the field-trial stage, the evaluation goal is to specify how the programme is to be used, i.e., to identify the conditions under which the programme can be successfully implemented. The sort of questions to be answered by a field trial are:

- Is the programme suitable both for rural and urban learners?
- Can teachers use the programme without special training?
- Can the programme work in class sizes of more than thirty learners?
- Will schools expend funds to provide essential consumable materials?

This reform will not undergo a trial stage. The envisaged move to national dissemination based only on the results of 'extract' trials has obvious implications for system reform. Entire sub-systems (see following section) will be required to re-orient their approaches, without benefit of the results gleaned from a field trial of substantial sections of textbooks, used in 'real' classrooms in a 30 to 50 sample size situation.

13.7   Dissemination and Implementation

Dissemination is the systematic introduction of the programme to the whole system. Implementation means the use of a programme throughout an entire school system. Figure 13.2 represents the essential elements of the dissemination stage:

Figure 13.2: Essential elements of curriculum dissemination
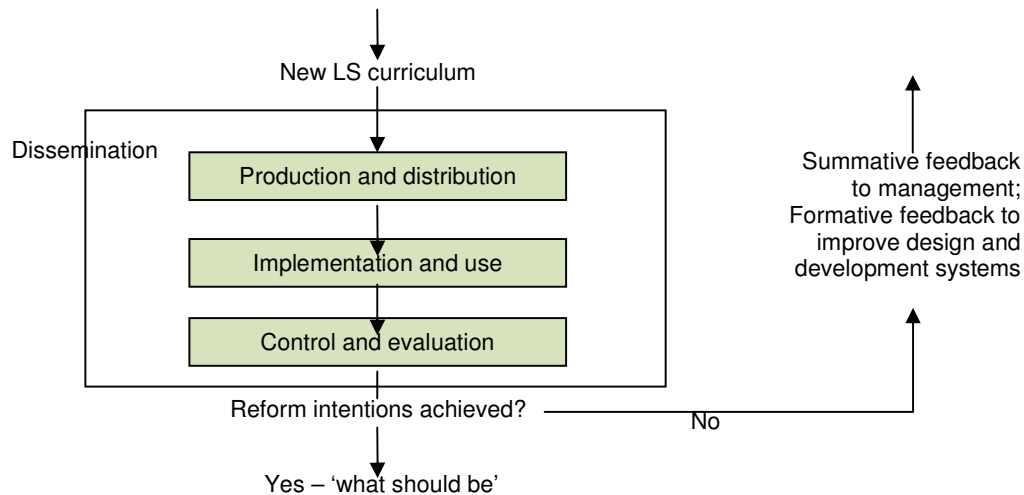
A curriculum may be compulsory for all schools of a certain type. Alternatively, it may be among a list of authorised optional curricula from which each school chooses the most suitable for its needs. In both cases, implementation entails fundamental changes within the system. Here, the changes envisaged are revolutionary:

(a) Teacher-training programmes must be adjusted to the requirements of the new programme. This implies substantial revision of pre-service programmes. It entails a major investment in-service training activities. Teachers need instruction in the Learning Areas of the new programme. The shift required to bring teachers from highly specialised "subject" focus to an adequate competence level in a Learning Area is very challenging. In the Science LA, for instance, people who are currently 'biology' specialists will be required to reach an adequate level of mastery on the S1 to S4 range of understandings and skills within a range of disciplines – life sciences, physical sciences, materials sciences, earth and space sciences.

No in-service programme can presume to achieve such a shift. The teaching force requires substantial "re-training" to develop the range of understandings and skills in disciplines they have not hitherto studied. To do this, the system must invest in a phased re-training programme. Teachers need to be released to enrol either in medium-term full-time courses, or on mixed mode

residential/distance/eLearning courses, leading to certification.

New teaching methods, strategies, or class-management practices may also constitute the focus of a retraining course. Almost always, teachers should be trained to monitor the programme, to identify flaws, and to diagnose learning difficulties.

(b) The support and cooperation of system supervisory personnel is vital. The full collaboration of DES is imperative. Without their cooperation one can hardly expect successful implementation of the programme.

(c) A third challenge is making the appropriate changes in the national examination system. If programmes are changed but national examinations remain unaltered, teachers will not alter the focus of their work. Also, society continues to demand adherence to the examined programme (whatever it may be).

Figure 13.3: Critical activities prior to curriculum implementation
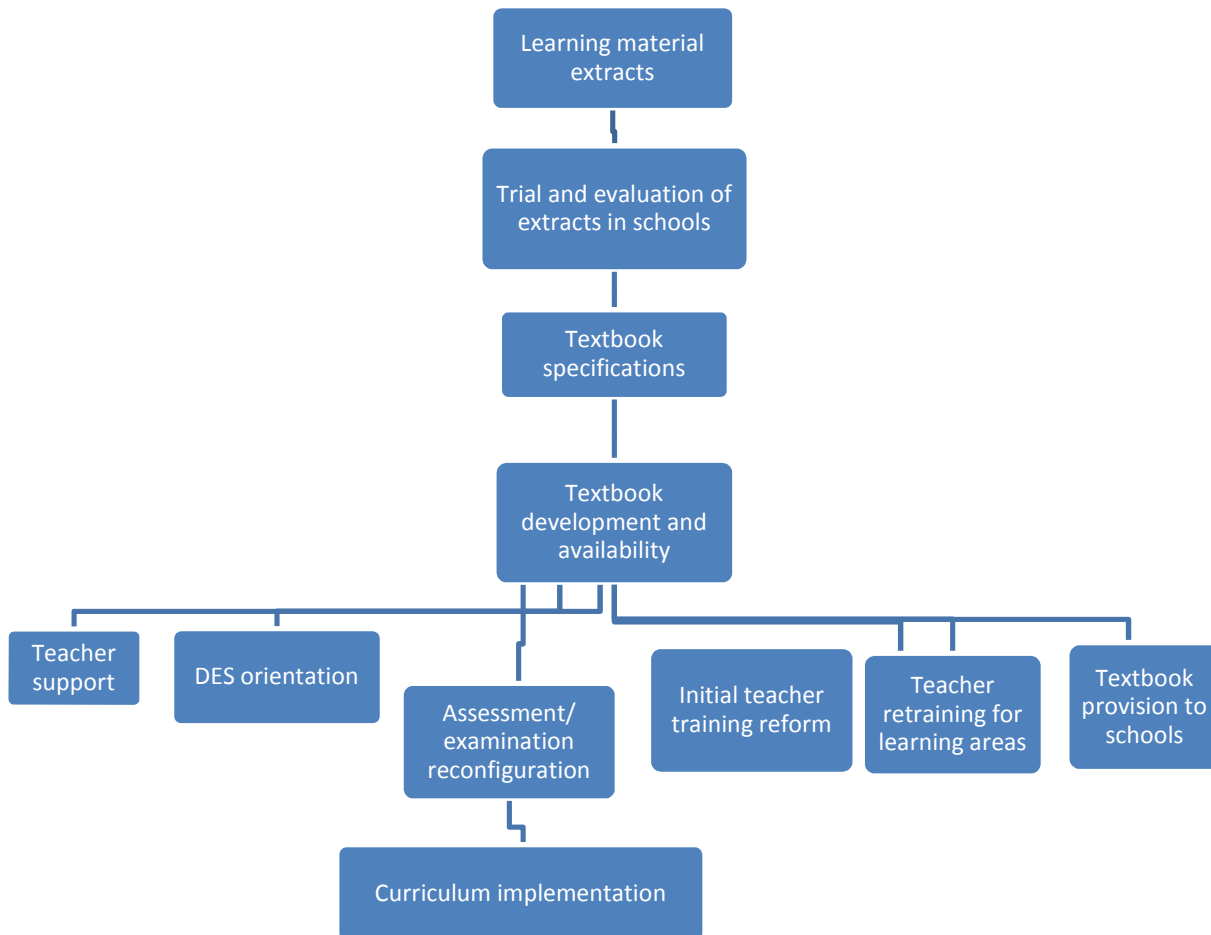
Figure 13.3 depicts all the essential pre-requisite activities for implementation. It is best practice for the elements of teacher support, DES orientation, assessment/examination reconfiguration to take place once the textbooks are available.

At the dissemination stage, the evaluator's role is to examine the efficiency of the changes and adjustments made. This may be done through observation of the teacher-support programme, through analytical examination of both initial teacher training programmes and of the examination system, and by means of the judgments and opinions of experts.

13.8 Quality Assurance

Curriculum development and evaluation is a cyclical activity. A programme that operates very satisfactorily over a certain period of time may gradually become obsolete.

Permanent follow-up and quality assurance of the programme should be maintained. Quality assurance should be designed in such a way that it encourages those schools in which the programme is adequately implemented to support other schools where the implementation has been faulty. This presupposes funding for such activities.

Quality assurance may reveal when some or all portions of the programme should be altered or replaced. In this way, quality assurance may lead toward the updating of an old programme or the development of new programmes. Quality assurance results serve as warning signals and call attention to the need for innovative activities.

The role of the Department for Education Standards

The DES is the quality assurance arm of the MoES and is responsible for school inspection at a national level. The mission of the DES is;

To provide a rational system of setting, defining and reviewing standards and quality of education and sports and to monitor the achievement of such standards and quality to ensure continually improved education and sports in Uganda.

All decisions about inspection are made at headquarters. There are four regional offices with 10 -12 subject specialist inspectors. Regional offices manage and organise the inspection of educational institutions, monitor inspections carried out at district level, provide input to national reporting on education and contribute to professional and policy advice.

District inspectors of schools are employed by local government and report directly to district officers. However they work in collaboration with the DES. Associate Assessors, accountable to the districts, are experienced educators who support district inspections.

DES in support of curriculum reform

Lower Secondary Curriculum, Assessment and Examination Reform Programme

Although the DES is charged with providing quality assurance, the process of ensuring that curriculum delivery is being successful starts in the classroom. The teacher should be constantly evaluating how successfully his or her students have learned. Headteachers' role in quality assurance is to evaluate the success of the school in terms of implementing the curriculum, and to use the results from the evaluation with all staff to bring about improvements. Evidence for school self-evaluation comes from classroom observation and an analysis of data about the performance of students. When visiting schools, inspectors focus on a small number of indicators, one of which is usually learning and teaching .

When the new curriculum is introduced, the focus of school self-evaluation should be upon how well teachers are implementing it. In order that DES can act in support of the Lowers Secondary curriculum reform, the two essential foci of its work will be curriculum delivery and and the learning/teaching process. Inspectors offer immediate feedback to individual teachers, the headteacher and the school. It is envisaged that the feedback will offer 'supportive advice' to teachers and schools on how to deliver the new curriculum. So that DES staff have the competence to provide this supportive advice, they will need to undertake a programme capacity development. That programme is being planned, as a crucial part of the technical assistance being provided under CURASSE. It will be planned and delivered in collaboration with the programmes of teacher support currently being developed, and which is due to commence in 2016. The Handbook for School Inspections gives guidance and tools to inspectors to support consistency of inspections. This is being revised to reflect the curriculum reform.

DES practice requires that reports are sent to school. Headteachers are expected to act on the recommendations. Inspectors check progress on these recommendations on subsequent visits. All these strategies will be used to help embed the reform. For this practice to operate in support of curriculum delivery, it is necessary that these reports and recommendations are oriented towards ensuring that teachers have the learning materials and the guidance materials they need. They are also entitled to expect appropriate help from competent support personnel.

Importantly, all reports come to DES headquarters, analyses are made of the issues and these analyses are sent to the Permanent Secretary. In this way, there is the potential for a national picture of curriculum implementation to be generated for use by sister organisations. Eventually, this would contribute to an understanding of how well the reform is being managed. The DES has the potential to be the 'guardian' of the lower secondary curriculum reform process.

Appendices

Appendix A. Structure of the Education System

The Ugandan education system follows a 7 – 4 – 2 - 4 pattern: seven years of primary education, followed by four years of lower secondary or "Ordinary" level, two years of upper secondary or "Advanced" level, and four more years of tertiary education. There is a parallel technical and vocational track. This includes three-year technical and farm programs that follow immediately after primary education, and three- or four-year post-secondary technical programs.

The system comprises:

- Non-compulsory preschool for 3 – 5 year olds managed by the private sector;

- Seven years of compulsory primary education for 6 – 12-year olds;

- Four years of lower secondary education for 13 – 16 year olds;

- Two years of upper secondary (A-Level) education.

A-level graduates may go on to university, a range of other tertiary institutions or enter the labour market. The education system also provides for two-year vocational and technical colleges, including teaching and nursing. Primary school graduates have an option to enrol in technical schools, community polytechnics or farm schools. Currently, those who opt not to continue with Lower Secondary education do not have an option to enrol in the programmes offered by various technical, polytechnic, and farm school institutions. Their only option appears to be to enter the world of work, either as employed people or as self-employed people. This inadequacy of the system is highly significant in the context of the reform process, as described earlier. The figure below illustrates the structure.

Uganda – Education System Organogram

Selection and certification occur at the end of the primary education level, at the Ordinary level of secondary, and at the Advanced level of secondary by means of national examinations. These include the Primary School Leaving Exam, the Uganda Certificate of Education, and the Uganda Advanced Certificate of Education. There is no certification available for those Lower Secondary learners who opt not to continue with formal education at this level. Hence, a learner who leaves at the end of S1, S2 or S3 does not possess

a valid, certified statement of what s/he has achieved in terms of the school curriculum, or of what competences s/he has acquired as a consequence of that period of secondary school studies.

Alternative technical certificates also exist for learners choosing the technical track, including the Uganda Junior Technical Certificate, which is taken at the end of three-year post-primary technical and farm programs, and the Uganda Advanced Technical Certificate, which is taken at the end of post-secondary technical programs.

The official age of entry is six for primary education. However, as in many countries, most children enter at a later age - around nine years. There is no legally imposed age of entry for post primary education. The official, or "target," age of entry is age thirteen. However, since most children enter primary school late, the de facto post-primary starting age is much higher than thirteen, starting at about age fifteen.

Appendix B. Curriculum process and machinery

The NCDC mandated functions are:

- to investigate and evaluate the need for syllabus revision and curriculum reform at primary, secondary, tertiary levels of education, in pre-school and post-school education and in teacher education;
- to initiate new syllabuses, revise existing ones, carry out curriculum reform, research testing and evaluation to bring up-to-date and improve syllabuses for school and college courses;
- to draft teaching guides, text books, teacher's manuals, and examination syllabuses, in cooperation with teaching institutions and examining bodies;
- to design and develop teaching aids and instructional materials;
- to devise, test and evaluate examination questions and methods of examining learners with other appropriate teaching and examining bodies;
- to organise and conduct in-service courses of instruction for the acquisition of knowledge and professional skill by persons intending or required to teach new courses developed at the centre;
- to organise and conduct courses in the objectives and methods of curriculum development for persons required to participate in curriculum development work;
- to hold seminars and conferences on curriculum development projects and problems;
- to collect, compile, analyse and abstract statistical information on curriculum and matters related to curriculum;
- to publish information, bulletins, digests, periodicals or other written materials concerning curriculum and other matters related to curriculum;
- to disseminate and promote general and other better knowledge and understanding of new curricula, teaching methods and teaching aids.

This spectrum of professional and technical functions of NCDC span the spectrum of curriculum work, from research and evaluation of the state of learning programmes at the school level, through the development of course syllabuses and learning materials, to dissemination work and input into the assessment system. The range of functions encompasses the full spectrum of professional curriculum and learning materials development tasks, syllabus construction, curriculum implementation and support obligations, curriculum research aspects, and also the dimension of raising awareness of curriculum issues throughout the country's education system.

The operational structure is presented as a graphic, showing the governance level, the professional/technical wing, the administration and finance wing. The two main sections (Admin/Finance and Professional) are in a hierarchical arrangement under a Director and a Deputy-Director. An Academic Steering Board vets all technical output. There are four technical departments – pre-primary and Primary, BTEVT, and Secondary. The secondary section is located as the department charged with driving forward the lower secondary curriculum reform work.

NCDC Structure

There is an expectation that the NCDC technical functions will be discharged with the required level of professional competence. This implies that the cadre of curriculum specialists with the responsibility for doing so should have the necessary set of specialist skills, qualifications, experience, and know-how.

Systems for curriculum development and implementation

The approach to curriculum development hitherto applied by NCDC is presented here:
- The NCDC curriculum specialists work with subject panels to prepare curriculum documents. Each subject has a panel of 18 members selected from different stakeholders in education. They include teachers, UNEB, DES (the chair of the panel), employers etc. The NCDC specialist acts as the secretary to the subject's writing panel;
- Workshops of subject panel members are the modus operandi;
- Financial and material support feeds in from agencies concerned with cross cutting issues like climate change, voter education, animal welfare, sexuality education, etc.;
- NCDC receives funding from the Ministry to support orientation of teachers to new syllabuses and textbooks (this includes provision of materials for the orientation courses).

Although function 6 of the NCDC mandate refers to in-service courses, and the Specialist Job Specification mentions teacher orientation courses, an Implementation section is not featured in the NCDC organogram. This omission is significant, in view of the very large scale teacher support component envisaged for the Lower Secondary reform process. Strategies will be required for coherent, long-term teacher in-service delivery focused on ensuring that teachers have the capacity to utilise the new textbooks to deliver the reforms. A range of 'issue' agencies make inputs to the curriculum development and maintenance process. Currently, there are fourteen of these, as listed in the table in Appendix C.

Appendix C.   Organisations and their issues

S/N	Name of organisation	Issue(s) to be introduced
01	ADB (African Development Bank)	Technology integrated with Science/Maths
02	Electoral Commission	Voter and civic education
03	GIZ, DFID, Bank of Uganda	Financial literacy education
04	ILO and Capital Markets, EDUCATE!	Entrepreneurship education
05	LEAP Project (Livelihoods, education and Protection to end Child Labour in Uganda)	Child labour education (non-formal vocation and apprenticeship training has offered self employment to the youths)
06	Ministry of Education and BTVET Department	Farm School Agriculture
07	Ministry of Water and Environment	Climate change education
08	Netherlands Assistance	ICT hardware and training
09	SESEMAT (JICA)	Improvement of Science and Maths teaching
10	UNICEF	Early childhood education
11	UNFPA	Sexuality Education (Adolescent Sexual Reproductive/Life Planning Skills Education
12	UMEME	Electrical safety education
13	Uganda Human Rights Commission	Human Rights Education
14	World Society for the protection of Animals (WSPA)	Animal welfare education

Appendix D.   Generic skills baskets and specific competencies

Generic Skills: baskets			
Communication	**Social & inter-personal skills**	**Creativity and Innovation**	**Critical thinking and problem-solving**
▪ **Is literate** – reads with understanding and writes comprehensibly using languages, symbols and text ▪ **Communicates clearly**-articulates thoughts and ideas effectively using oral, written and non-verbal communication skills in a variety of forms and contexts, uses communications for a variety of purposes (e.g. to inform, instruct, motivate and persuade), communicates clearly in a variety of contexts (including multi-lingual), actively listens	▪ **Interacts effectively with others** - knows when it is appropriate to listen and when to speak, conducts themselves in a respectable, professional manner ▪ **Works effectively in diverse teams** demonstrates ability to work effectively and respectfully with diverse teams[20], exercises flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal, assumes shared responsibility for collaborative work and values the individual contributions made by each team member, responds open-mindedly to different ideas and values ▪ **Guides and leads others**-uses interpersonal and problem-solving skills to influence and guide others towards a goal, demonstrates integrity and ethical behaviour in using influence and power ▪ **Is responsible towards others-** acts responsibly with the interests of the larger community in mind, observes health, safety and environmental protection requirements, demonstrates commitment to human rights	▪ **Thinks creatively –** uses a wide-range of idea generation techniques, creates new and worthwhile ideas, elaborates, refines, analyzes and evaluates own ideas, demonstrates originality and inventiveness in work and understands limits to adopting new ideas ▪ **Works creatively with others-** develops, implements and communicates new ideas to others effectively, is open and responsive to new and diverse perspectives, views failure as an opportunity to learn ▪ **Implements innovations-** acts on creative ideas to make tangible and useful contributions	▪ **Processes data-** Collects, analyses and interprets data and information effectively ▪ **Reasons effectively** Uses various types of reasoning (inductive, deductive) as appropriate to the situation, applies scientific approaches ▪ **Thinks systematically** Analyses how parts of a whole interact with each other to produce overall outcomes in complex systems ▪ **Makes judgments and decisions** Effectively analyses and evaluates evidence, arguments, claims and beliefs, analyses and evaluates major alternative points of view, synthesises and makes connection between information and arguments, interprets information and draws conclusions based on best analysis ▪ **Embraces innovation-** researches innovative solutions to problems ▪ **Solves problems systematically and cooperatively-**solves different kinds of non-familiar problems, identifies and asks significant questions to clarify viewpoints and lead to better solutions

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[20] Teams may include children with special needs, children from other cultures or those with other beliefs or value systems

Generic Skills: baskets			
Learning to learn	**Workplace behaviours**	**Numeracy**	**Information and Technology**
Uses study skills- knows and uses techniques to aid memory, research, note-taking, revision and examinations **Knows oneself-** Has awareness of own thought processes and learning styles **Adapts learning strategies-** knows and uses strategies that might be used for different learning tasks **Self-regulates-** Builds on existing knowledge and experience, assesses the status of own learning, reflects critically on learning experiences and processes **Takes responsibility for developing own skills –** develops and maintains appropriate skill levels	**Produces quality work within agreed timescales -** ensures and takes pride in producing a high quality of work, is accountable for own results **Works independently-** monitors, defines, prioritises and completes tasks without direct oversight **Is reliable –** demonstrates reliability and effective use of time, can follow instructions **Adapts to change-** adapts to varied roles, responsibilities, schedules and contexts, **Is flexible-** incorporates feedback effectively, deals positively with praise, setbacks and criticism **Manages goals and time** - sets goals with tangible and intangible success criteria, balances short-term and long-term goals, utilises time and manages workload effectively **Manages discrete pieces of work and tasks-** sets and meets goals, prioritizes, plans and manages work to achieve the intended result, organises resources; keeps records, Identifies and costs requirements	**Uses functional Mathematics -** Applies Mathematics effectively to everyday activities **Has personal finance skills-** Able to manage personal finances **Has mathematical skills which are relevant to the workplace -** able to use Mathematics in a range of basic work-related contexts e.g. Interpreting and presenting numerical and graphical information, Estimating, Measuring, Calculating	**Applies Information and Communications Technology effectively-** uses ICT to access, gather, evaluate, store and present information, uses digital technologies appropriately to access, manage, integrate, evaluate and create information to successfully function in a knowledge economy **Uses digital media-** engages effectively with digital technologies and electronic media where possible **Enhances appropriate, locally available technologies-** appreciates, analyses and evaluates existing local technologies with a view to developing improved processes and products

Appendix E.   Developing Continuous Assessment for Summative Purposes

As Chapter 12 shows, the nature formative and of summative assessment is different. Crucially, whatever its format, summative assessment provides the basis on which the end-of-cycle qualification, the Uganda Certificate of Lower Secondary Education (UCLSE), is awarded. This inevitably makes summative assessment 'high stakes', and timed, written examinations considered a more secure and reliable format at the lower secondary level.

However, for some time it has been felt that the heavy dependence in Uganda on summative written examinations for qualification purposes at the end of Senior 4 should be reconsidered. The Education Policy Review Commission (EPRC)[21] criticised the one-shot summative assessment at secondary school level and suggested the use of continuous assessment for summative purposes as an alternative.

Continuous assessment reduces the emphasis on timed, written examinations and changes their role. There are a number of reasons for doing this:

- Tests and examinations have a context that is all their own. Continuous assessment offers a more realistic way to assess what learners can actually do in a less stressful environment.

- Tests usually depend on reading and writing as the medium of communication. Assessment is an effective tool for assessing practical skills.

- Continuous assessment is conducted regularly and provides an authentic and comprehensive record of the learners' progress over a period of time.

A great deal of effort has been put into establishing continuous assessment in Uganda over the past years (See *Continuous Assessment for Post Primary Education and Training (PPET) Institutions in Uganda*, UNEB, 2010). If this can be used for summative purposes then it will enable the assessment of learning outcomes that cannot be assessed in written, timed examinations. For example, these might relate to:

- technology projects;

- agricultural practice;

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[21] (Kajubi, 1989)

- entrepreneurial enterprises;

- performances in music, dance, drama or physical education;

- manual and artistic skills;

- oral communication;

- library work;

- geographical or scientific field work;

- practical activities in Science and Mathematics;

- values and attitudes.

All of these can be assessed only if time is given to them and if candidates are physically as well as mentally involved. It would therefore seem essential that the effort to build up a continuous assessment culture should continue.

Problems related to the use of continuous assessment for summative purposes

There are clearly great advantages to be gained from the use of continuous assessment for summative, as opposed to formative, purposes. However, this change of purpose would change its nature and raise a number of significant issues. It is important to consider the impact on continuous assessment if it is used for summative, rather than formative, purposes.

Continuous assessment for formative and summative purposes

Continuous assessment for formative purposes:	Continuous assessment for summative purposes:
1) Is assessment *for learning*.	1) Is assessment *of progress*.
2) Offers evidence throughout the course that provides immediate feedback to the learner and the teacher.	2) Must provide evidence that can be scrutinised at the end of the course.
3) Is designed to support teaching and learning as it progresses.	3) Is designed to establish what progress the candidate made from the beginning to the end of the course.
4) May be based on ephemeral evidence which is not formally recorded.	4) Requires clear, physical evidence such as a piece of written work or an artefact that can be kept for several months or even years.
5) Helps the teacher to establish where the learner is now, and what they should do next.	5) Usually gives rise to a score or grade for each candidate, which may be used to classify candidates or to put them into rank order.

Continuous assessment for formative purposes:	Continuous assessment for summative purposes:
6) Is usually 'low stakes': the results of continuous assessment for formative purposes are not normally used as the basis for major decisions about selection or opportunities for progress.	6) Is often 'high stakes': the results of continuous assessment for summative purposes may be used for a range of selection purposes.

It will be seen that the use of continuous assessment for summative, end-of-cycle purposes leading to the high-stakes Certificate of Lower Secondary Education is likely to conflict with its use for formative purposes. This may give rise to a number of problems.

Teachers may not be ready to accept responsibility for continuous assessment for summative purposes. They face many problems, including: a shortage of time, space and equipment to carry out practical activities with large classes; a lack of storage facilities for learners' work to be stored for submission at the end of the course; teacher mobility, which may not allow teachers to develop the knowledge of their learners which they need to make sound professional judgements; and issues relating to their workload and remuneration.

Furthermore, the Uganda National Examinations Board (UNEB) has expressed concerns about the reliability of assessment within schools. Some differences between a candidate's performance in school-based tasks and in externally administered, written examinations can be expected since different skills, required for practical activities, may be assessed. However, large differences between marks awarded externally and internally need clear explanations to be credible. But all teachers want to do the very best they can for their learners. Indeed, the more committed the teachers, the more determined they will be that their learners should achieve the best results possible. If continuous assessment is 'high stakes' then teachers come under enormous pressure to ensure that their learners show the evidence of progress that is required for a good grade. But where teachers must use their professional judgement to collect and record that evidence – for example, through their observation of the learners' use of practical skills – this may lead to inconsistencies and unreliable results. Inevitably, teachers may tend to favour learners who show the greatest effort, and they may overlook the achievements of others whose behaviour presents some challenges. Differences in cultural background between learners and teachers may also cause difficulties which result in unreliable teacher judgments. There may even be cases where artefacts such as Visual Art work are authenticated by the teacher as being the candidate's own work when this is not the case. So the path to the effective use of continuous assessment for summative purposes is not smooth and straight.

Continuous assessment for summative purposes – ways forward

Despite the issues discussed above, UNEB continues to work to improve the use of continuous assessment for summative purposes in the lower secondary years, particularly for the assessment of learning outcomes that involve practical activities on the part of the learners. A three-stage plan to take this forward is proposed.

Stage 1

During the first stage of the reform, the assessment of practical work will have three aspects.

a) National assessment

In this phase, practical work for the Certificate of Lower Secondary Education (CLSE) will be assessed as it was for 'O' level. Candidates will produce portfolios of artefacts, such as fine art work or technology projects in the Creative Arts and the Technology and Enterprise Learning Areas, and these will be sent to an examination centre to be graded by an independent examiner. External examiners will visit schools to observe activities such as performances in music and drama or practical projects in agriculture and various tangible outputs produced by learners in the eight learning areas. The great increase in the number of candidates in these areas following their introduction as compulsory Learning Areas in the new Lower Secondary curriculum will require a significant increase in the number of external examiners needed for these assessments, with implications for recruitment and funding.

b) Local assessment

In parallel with the national assessment system described above, a system of local, school-based assessment will be established. Learning area teachers will mark their own learners' products and activities according to criteria developed by UNEB. Teachers from a cluster of schools will form a moderation group (perhaps under the guidance of an independent external examiner) to meet and standardise their decisions. The results of these assessments will be published locally, although they will not contribute to the grading of the CLSE.

c) Exhibitions and competitions

In addition to the national and local systems of formal assessment, less formal opportunities for learners to demonstrate what they have achieved will be developed through a structure of local, regional and national art festivals, technology exhibitions and competitions. These will work in a way that is similar to the school sports events that take place now, where good performance brings recognition to both the learners involved and to their schools.

Stage 2

As the culture of continuous assessment is established through the system of local assessment, teachers will gain experience of the process of marking their learners' work according to given criteria. In this way, the ground will be laid for the more formal use of continuous assessment to contribute to the grading of the Certificate of Lower Secondary Education (CLSE). In the second phase, marks awarded by teachers and moderated through the local school moderation groups may contribute up to 20% of the overall marks for the relevant assessments. However, these marks will be statistically adjusted where necessary to bring them into line with the school's overall results for the Learning Area, including those from any written assessments. Thus the performance of an individual candidate in the school assessment will impact on that individual's results, but a school will not be able to inflate its overall results through its school assessment practices.

Stage 3

In due course, it may become possible to increase the proportion of each candidate's marks that are awarded by the teacher. This will reduce the dependence of a school's assessment results on those obtained through external assessment.

Appendix F.   Terminology used in syllabus documents

The Scope and Sequence section of a syllabus document contains the summary of the programme of study. The Sub-strand pages of the Main Section of the syllabus contain the detail of the programme of study.

These sections use terminology to present the programme of study. The terms are explained below.

Strand

Strands are the main areas of study into which a Learning Area is arranged. For instance, in Technology and Enterprise, there are six strands:

- Self-employment and money;
- Crop production and animal husbandry;
- Food production and food security;
- Water, hygiene, and sanitation.
- Housing and construction;
- Machines and technology;

The detail of the programmes of study for the strands will be presented in the Main Section of the Learning Area syllabuses, as a set of sub-strands.

A sub-strand page contains:

- the Learning Area title;
- the Year label;
- the Strand name;
- the sub-strand title;
- the suggested number of 40 minute periods;
- the sub-strand statement;
- the sequence of Learning Outcomes (as knowledge, understanding, skills, or attitude/value statements;
- linked Evidence of Achievement statements;

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- exemplar Assessment Items;
- reference to the textbook.

See page 154 for a sample sub-strand page

Sub-strand

1.1 **Sub-strands** are the units of study for the year. For example, in Senior 1 of Technology and Enterprise, the Strand Physical Education, has eight sub-strands: Warm up, body conditioning and Cool down, Introduction to Physical Education, Health-related Physical fitness components, Balancing and Movement variations, Introduction to track events, Field events: Basics of jumping, Field events: Basics of throwing and Introduction to Ball Games.

Some Learning Areas have **Themes**. For instance, Social Studies has the Strand, **Resources and sustainable development.** In Senior 2, the theme within this strand is **Nature and use of resources: minerals, energy and industries**. This theme runs through all the Sub-strands for that study year. For example, Sub-strand 2.11 in Senior 2 deals with Manufacturing industries in Uganda and the Rest of East Africa.

The series of Sub-strand pages make up Section 4 of an LA Syllabus document. The collection of sub-strands constitutes the detailed syllabus for the Learning Area.

A Programme Planner shows how the series of sub-strands across a learning year is arranged across the year's Learning Weeks. The programme presents the projected sequences through the material of all strands as learning progresses through the three terms of a Learning year. Similar mapping in all four years renders a comprehensive programme of study for the Learning Area across the four years of the Lower Secondary cycle. The Programme Planner for an LA is in the LA Syllabus Document.

Learning Outcome

The Learning Outcomes for the entire Lowers Secondary curriculum have been given in Section 9 of this Framework document. A **Learning Outcome** is a general statement which specifies what the learner should know, understand, be able to do or demonstrate, the attitude or value s/he should assimilate, as a result of the learning process during that sub-strand. It tells us the concepts, ideas, skills or values which the learners should learn.

- Learning Outcomes (LO) are concerned with *knowledge, understanding, skills or values.* The LO statements begin with verbs which try to express in general terms what learners should acquire as a result their learning.

- Verbs most commonly used are *know, understand, be able to,* and *appreciate.* Other verbs used include *shows skill in, apply, use, recognise, judge, have formed opinions about.*

These statements are the intended results of learning. Often, it is not easy to observe performances which might demonstrate that learners have achieved the LOs. Similarly, it is not always possible to measure the attainment directly. For instance, the Science LO, '*Appreciate that the different energy resources available in Uganda should be used sustainably.*' has the target of learners assimilating values which lead them to respect the country's resources, and use those resources sensitively. However, being able to assess whether such an attitude has been acquired by a Senior 2 learner is probably a difficult challenge. Apart from observed behaviour in a life situation, one method would be the use of an attitude survey instrument – something which is not yet part of the assessment tool kit at Lower Secondary level.

Evidence of Achievement statement

Evidence of Achievement statements are much more specific. They specify observable behaviour. These behaviours indicate what learners should be able to do to show that they have achieved a Learning Outcome. They specify actions which learners can perform to show that they have acquired the understanding, knowledge, skills or attitudes specified in the LO. They are, therefore, expressed as verbs of action such as *define, describe, list*, *write about, compare, summarise, relate, justify, make, sew, assemble, choose, select, initiate,* and many others.

- **Evidence of Achievement statements** must be observable, measurable and based on an activity done by the learners.
- The purpose of **Evidence of Achievement statements** is to assess performance, monitor progress and provide stakeholders with evidence that learning has taken place.
- **Evidence of Achievement statements** lead directly to assessment activities.
- **Evidence of Achievement statements** referring to knowledge and understanding should not only use verbs like *list* or *define.* Such behaviour can often be demonstrated, even if a concept has not been understood. Such verbs reflect lower level cognitive skills. The LA syllabuses also use verbs connected to higher levels of cognitive skills. Such verbs are *compare, contrast, justify, appraise*, *analyse and synthesise.* These demand thought and understanding from learners.

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- **Evidence of Achievement statements** suggest that learners can *apply* the knowledge of what they have learnt in a useful or practical way, in a context they are likely to find during the learning period and after they leave school. This means that learning situations should expect learners to *make use of* what they learn, e.g. not just to learn about an aspect of history or current affairs, but to be able to listen intelligently to the news or read a newspaper with understanding, or even take part in political activity in a local community. This is the level of learning that is captured by the eight baskets of Generic Skills, which were dealt with in Section 6.

Suggested Assessment Activities

Suggested Assessment Activities present ways of assessing learners to show that they have achieved the outcomes for a sub-strand. They are merely examples. The textbook for the LA at the particular level gives many more such activities.

Learning Area syllabuses also indicate how the agreed values and generic skills are acquired by all learners as a contribution to the achievement of the Key Learning Outcomes, as specified in Section 4 above. These generic skills would be acquired by learners within the programmes of study of the Learning Areas. The programmes of study take cognisance of the need to sequence the acquisition of the Generic Skills. The detailed syllabus document for each LA indicates this sequence.

Appendix G.   Learning Area Syllabus Structure

All Lower Secondary Learning Area Syllabuses developed under the CURASSE reform have the same structure. This section describes the structure of a Learning Area syllabus document.

All syllabuses have these sections:

Introductory pages

   i.   **Title page**

  ii.   **Publishing details**

 iii.   **Contents**

 iv.   **Foreword**

  v.   **Acknowledgements**

Main sections of a syllabus document

1. Rationale

2. Strand statements

3. Scope and Sequence chart

4. Syllabus Sub-strands

5. Programme Planner

6. Table of process skills

7. Contribution of the Learning Area to the curriculum's Key Learning Outcomes

8. Contribution of the Learning Area to the Values

9. Contribution of the Learning Area to the Generic Skills

10.   How learners will learn

   10.1 Inclusive Education

   10.2 Links with other learning areas

   10.3 Controversial or sensitive issues

11.   Assessment

   11.1 Formative Assessment

   11.2 Certificate of Lower Secondary Education

   11.3 Contribution to the Generic Skills Passport

12.   Learning time allocation

13.   Learning and teaching materials

14.   Tools and equipment

Exemplar tables in the syllabus

In the syllabus itself, each Sub-strand occupies one page, which shows details of all that should be taught in that sub-strand.

For each sub-strand, the syllabus shows **Learning Outcomes, Evidence of Achievement statements,** and **Suggested Assessment Items** related to that sub-strand. These are shown in three columns. Where appropriate, Column 3 also gives the title of the textbook for the Learning Area, for the specific year level.

Column 1 of the Sub-strand page is an exact copy of the appropriate piece of the Scope and Sequence chart. The 'Core learners should' row presents the sequence of learning outcomes which all learners should expect to achieve. This is the **core** syllabus. The 'Extended learners should' row presents a sequence of more challenging learning outcomes. This is the **extended** syllabus for higher achieving learners. The extended syllabus is given for those Learning Areas where this is necessary.
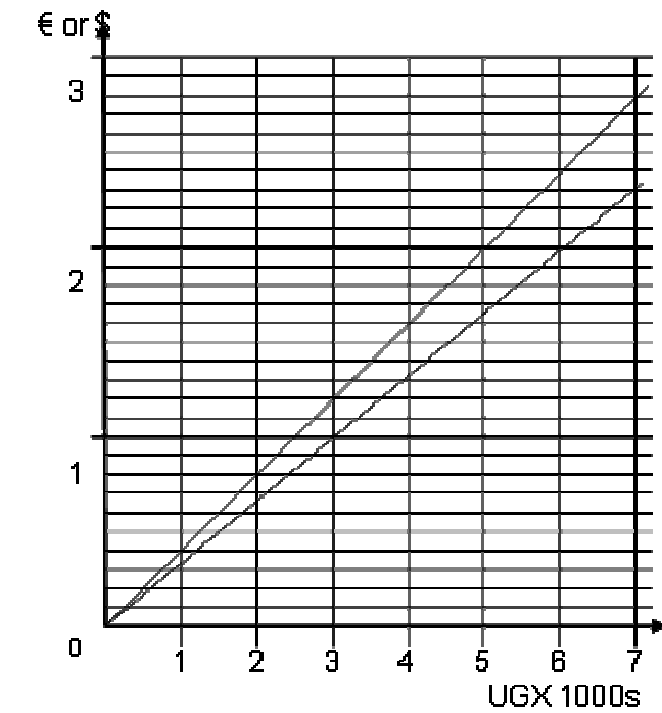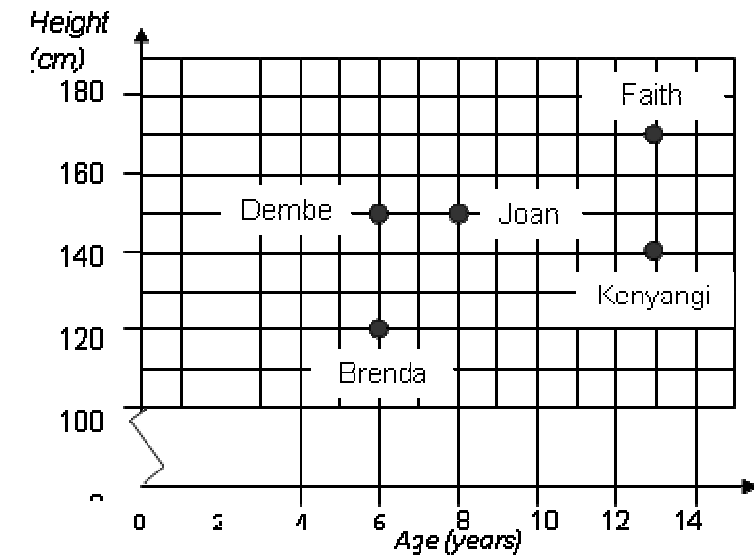
Sample section 3 of a Learning Area syllabus document: scope and sequence

Learning Area: SOCIAL STUDIES							
Strand	S 1	Strand	S 2	Strand	S 3	Strand	S 4

TC
 	
TC
	1.1 Where we live
	Sub-strand outcomes
	The learner should be able to
	  a. draw a sketch map of the school or local area (s) (gs)
	  b. identify or locate features on a map (s) (gs)
	  c. draw a map using a simple scale (s) (gs)
	  d. use scale on a map (s) (gs)
	  e. use letter and number co-ordinates to locate features on a map (s) (gs)
	  f. use and interpret symbols on a map (s) (gs)
	  g. understand the difference between a map and a photograph (u, s)
	  h. use basic skills in using an atlas (s) (gs)
	  10 P
	
	1.2 Finding out about our past
	Sub-strand outcomes
	Learners should
	  a. understand how people find out about the past
	  b. be able to locate important historical sites in Uganda and to visit any of these (s) (gs)
	  c. appreciate the importance of learning about our past (a/v) (gs)
		PE	**2.1 How the landscape of East Africa was formed**
			  Sub-strand outcomes
			  The learner should
			a. understand the characteristics of important kinds of physical features in East Africa, including mountain ranges, volcanoes, plateaus, basins and rift valleys (u)
			b. be able to study through field work any of the above physical features in the local area (s) (gs)
			c. understand how their own lives and the lives of their communities are affected by physical features of the local area, including natural disasters (u)
			d. understand the main concepts of plate tectonics and how this has led to the formation of the main physical features of East Africa
			e. understand through case studies how the physical features affect the lives of people in selected areas of East Africa(u)
			f. be able to draw diagrams to show the formation of important physical features (s) (gs)
			g. be able to recognise physical features from photographs (s)
			h. be able to use contours to show physical features on maps (s) (gs)
			i. be able to draw cross-sections from simple contour maps (s) (gs)
				PE
				
				TC
					3.1 How the landscape of East Africa is affected by erosion, transportation and deposition
					  Sub-strand outcomes
					a. understand the meaning of erosion, transport and deposition
					b. understand how these affect the local landscape
					c. be able to use field work to illustrate this
					d. understand how the features of erosion and deposition affect their own lives and the lives of their communities (u)
					e. understand examples of other features of erosion, transport and deposition in Uganda and other parts of East Africa and how these affect the lives of people
					f. be able to recognise physical and other features on conventional survey maps (s) (gs)
					g. be able to recognise these features on photographs (s)
					h. appreciate that physical features affect the lives of everyone (a/v) (gs)
					i. understand the effects of human activity on the landscape (u)
					  10P
					
					3.2 The Struggle for Self-rule in Uganda and the Rest of East Africa
					Sub-strand outcomes
						TC
						
						RS
							4.1 Post- Independence Uganda and the Rest of East Africa
							  Sub-strand outcomes
							The learner should
							  a. understand the political, social and economic developments and challenges since independence (u)
							  b. be able to draw a time line or diagram to summarise the political events in Uganda and the Rest of East Africa since independence (s) (gs)
							  c. appreciate the need for political stability to promote social and economic development. (a/v) (gs)
							  d. appreciate the efforts being taken by Uganda and the Rest of the East African countries to address their political, social and economic challenges (a/v)
							    12P
							4.2 Population in Uganda and the Rest of East Africa
							  Sub-strand outcomes
							The learner should
							  a. understand the concepts related to population (u)
							  b. understand the relationship between population and resources (u)
							  c. understand the methods which can be used to control population
							  d. be able to use maps, statistics and diagrams to analyse population (s) (gs)

Sample page of main section of a Learning Area syllabus document

Learning Area: Mathematics	Year: Senior 1
Strand: 3 Shape and Space	Number of periods: 5

Sub-strand: 1.1 Plotting and interpreting points and graphs	

Sub-strand statement: Learners should plot points in a range of contexts.		
Learning Outcomes	Evidence of Achievement statements	Textbook ref/ Exemplar assessment items
Core learners should: 1. Interpret simple scatter graphs (s; gs) 2. Know the conventions for axes and coordinates (k) Plot points in the first quadrant (s) 3. Understand and order negative numbers (u) 4. Plot points in all four quadrants (s) 5. *Identify the coordinates of the vertices of polygons (s)* **Extended learners should:** 6. Plot and interpret conversion graphs (s; gs)	**Core learners should be able to:** 1. Obtain information from a simple scatter graph 2. Draw axes and plot points with positive coordinates Join up plotted points to draw simple shapes 3. Order positive and negative numbers in a range of contexts 4. Plot points with positive and negative coordinates 5. *Locate missing vertices of regular polygons and find their coordinates.* **Extended learners should:** 6. Plot and interpret conversion graphs drawn from real life data	**Textbook reference** • MEP 7A03 *Assessment item – Core* The heights and ages of five girls have been plotted on the graph. a) Who is the tallest and how tall is she? b) Who is the same age in years as Dembe? c) How much taller is Faith than Joan? *Assessment item – Extended* We measure length in metres and centimetres (m). Americans sometimes still measure length in feet and inches. There are about 2.54 centimetres in an inch. There are 30.48 centimetres in a foot. a) Draw a conversion graph to convert feet to centimetres. b) There are 3 feet in a yard. Use your graph to convert 1 yard into centimetres. c) Use your graph to convert 1 metres into feet and inches. d) What is the difference in centimetres between 10 yards and 10 metres? The graph shows the rate of exchange between Ugandan shillings (UGX) and Euros (€), and between Ugandan shillings (UGX) and US dollars ($), on one day. The value of the Euro was greater than the value of the US dollar. Use the graph to find the value in Euros of $100.

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Life Education Programme Planner – Physical Education strand

Senior 1

Term	Term 1										Term 2										Term 3									
Week	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
Sub-strand	Physical Fitness: Warm up, body conditioning and cool	Physical fitness: health-realted physical fitness					Gymnastics and aerobics: Gymnastic tollings and body shapes				Athletics: Basics of running				Athletics: basics of jumping			Athletics: Basics of throwing			Ball games: ball games skills									
Periods	4 periods	10 periods					6 periods				8 periods				6 periods			6 periods			20 periods									

Senior 2

Term	Term 1										Term 2										Term 3									
Week	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
Sub-strand	Physical fitness: skill-related physical fitness					Physical fitness: sports	Gymnastics and aerobics: Gymnastic balancing and movement variations				Athletics: Basic running techniques			Athletics: basic jumping techniques			Athletics: basic throwing techniques				Ball games: football					Ball games: netball				
Periods	6 periods					2	8 periods				6 periods			6 periods			8 periods				10 periods					10 periods				

Senior 3

Term	Term 1										Term 2										Term 3									
Week	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
Sub-strand	Physical fitness: fitness testing				Physical fitness: Body composition		Gymnastics and aerobics: Dance aerobics				Athletics: Advanced running techniques			Athletics: advanced jumping techniques			Athletics: Advanced throwing techniques				Ball games: Volleyball					Ball games: Handball				
Periods	6 periods				4 periods		10 periods				6 periods			8 periods			6 periods				10 periods					10 periods				

Senior 4

Term	Term 1										Term 2										Term 3									
Week	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
Sub-strand	Physical fitness: Fitness Training					Gymnastics and aerobics: step aerobics					Athletics: Athletics training in runs				Athletics: Athletics training in jumps			Athletics: Athletics training in throws			Ball games: Advanced skills in football	Ball games: Advanced skills in netball	Ball games: Advanced skills in volleyball	Ball games: Advanced skills in handball						
Periods	10 periods					10 periods					8 periods				6 periods			6 periods			5 periods	5 periods	5 periods	5 periods						

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Appendix H.   References

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