



THE REPUBLIC OF UGANDA  
Ministry of Education and Sports

# ADVANCED SECONDARY CURRICULUM



## SUBSIDIARY ICT SYLLABUS



**NCDC**  
NATIONAL CURRICULUM  
DEVELOPMENT CENTRE

2025



**ADVANCED SECONDARY  
CURRICULUM**

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**SUBSIDIARY ICT  
SYLLABUS**

**2025**



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## FOREWORD

The Ministry of Education and Sports, through the National Curriculum Development Centre (NCDC), aligned the Advanced Level Curriculum with the competency-based Lower Secondary Curriculum (LSC) to ensure a smooth learner transition from lower secondary to advanced level.

The two-year aligned Advanced Secondary Curriculum adopted learner-centered approaches, inquiry-based, and discovery methods. The learning outcomes give the learner hands-on experiences in real-life situations while being cognizant of different learner abilities and learning styles. The syllabus focuses on assessment for learning with emphasis on criterion-referenced assessment. It further provides learners with the opportunity to enhance the 21st-century skills and values that were acquired at the lower secondary level.

This Subsidiary Information and Communications Technology (ICT) syllabus focuses on the practical application of technological knowledge and skills, empowering learners to tackle real-world challenges in their communities. It emphasises effective communication, data management, ethical technology use, and emerging technologies, nurturing innovation and adaptability in a rapidly evolving digital landscape.

Furthermore, the syllabus promotes the development of higher order thinking skills, including enquiry, creativity, innovation, decision-making, critical thinking, and problem-solving. It advocates for learner-centred pedagogies that provide hands-on experience while accommodating diverse abilities and learning styles.

As the Minister responsible for Education, I endorse this syllabus as the official document for teaching and learning Subsidiary ICT at the Advanced Level of secondary education in Uganda.



Hon. Janet Kataaha Museveni

**First Lady and Minister of Education & Sports**

## ACKNOWLEDGEMENTS

The National Curriculum Development Centre (NCDC) is indebted to the Government of Uganda for financing the alignment of the Advanced Level Curriculum to Lower Secondary Education in Uganda.

Our gratitude goes to the Ministry of Education and Sports for overseeing the adaptation of the curriculum, the Curriculum Task Force of the Ministry of Education and Sports for the oversight role and making timely decisions whenever necessary, and members of the public who made helpful contributions towards shaping this curriculum.

NCDC is also grateful to Members of Parliament, schools, universities, and other tertiary institutions, the writing panels, and professional bodies, for their input in the design and development of the Adapted A level curriculum. To all those who worked behind the scenes to finalise the adaptation process of this teaching syllabus, your efforts are invaluable.

NCDC takes responsibility for any shortcomings that might be identified in this publication and welcomes suggestions for effectively addressing the inadequacies. Such comments and suggestions may be communicated to NCDC through P. O Box 7002, Kampala, or Email: [admin@ncdc.go.ug](mailto:admin@ncdc.go.ug) or on the Website: [www.ncdc.go.ug](http://www.ncdc.go.ug)



Dr Grace K. Baguma

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## 1.0 INTRODUCTION

The Advanced Secondary Curriculum has been aligned with the Lower Secondary competency-based model for ease of progression of learners from the Lower to Advanced Secondary Level. The alignment is a result of the analysis of the Advanced Level Curriculum published in 2013, to determine whether the content is:

- i) appropriate.
- ii) high-pitched or overloaded.
- iii) covered at lower secondary.
- iv) obsolete.
- v) repeated in different topics and redundant.

The results from the curriculum analysis revealed that there were overlaps of concepts with what was covered at the Lower Secondary, as well as concepts within different topics of the same subject. In addition, a number of syllabuses had content that is no longer necessary for today's contemporary society and the 21st century.

### 1.1 Changes in the Curriculum

The alignment of the A-Level Curriculum to that of the Lower Secondary led to changes in the pedagogies of learning from a knowledge- and objective-based, to an integrated and learner-centred competency-based approach. The adapted syllabus, therefore, is a result of rationalising, integrating, and merging content with overlaps and similar skills, dropping topics that had been studied at Lower Secondary, or are no longer critical and relevant for the current learning needs, while upgrading those that were of low competencies to match with the advanced level. The programme planner details the learning progression derived from the learning outcomes. The detailed syllabus section unfolds the learning experiences with corresponding assessment strategies.

This Subsidiary ICT syllabus is part of the Advanced Secondary Curriculum. The teacher is encouraged to read the whole syllabus before planning your teaching programme, since many topics have been merged, upgraded, or removed. While aligning this syllabus, efforts were made to ensure a smooth progression of concepts from the Lower Secondary Level, adapting topics and content with familiar features that are of value to the learner and society. In addition, the process of developing this syllabus document removed what was considered obsolete, high pitched as well as content overlaps and overloads.

### 1.2 Classroom-Based Assessment

This syllabus emphasises experiential classroom learning through suggested activities designed to meet the learning outcome requirements. This learner-centred, activity-based approach focuses on effectively building the required competencies.

Formative assessment in Subsidiary ICT prioritises knowledge and skills acquisition through active participation in learning activities. These activities are directly linked to the learning outcomes and demonstrate that learning has occurred through application and mastery of the desired skills.

Sample assessment strategies are included to assist the teacher, offering a foundation for classroom-based assessment. Teachers are encouraged to develop additional assessment strategies that align with the same principles of observations, dialogue, and product evaluation to measure knowledge, understanding, skills, values, and attitudes. **(Refer to the detailed syllabus for further guidance.)**

### **1.3 Learners with Special Educational Needs**

The Advanced Secondary Curriculum is designed to empower all learners, including those with Special Educational Needs (SEN), to achieve their full potential and make meaningful contributions to society. By incorporating inclusive strategies, the curriculum ensures equitable access to high-quality learning opportunities while maintaining rigorous academic standards.

A key emphasis is placed on creating an inclusive learning environment that meets the diverse needs of Special Education Needs (SEN) learners. This involves implementing tailored teaching strategies and providing supportive resources that enable these learners to thrive alongside their peers. Through this inclusive framework, the curriculum fosters academic success and the holistic development of all learners, ensuring that no one is left behind.

## 1.4 Generic Skills

Generic skills are embedded within all subjects and are essential for learning and workforce readiness. These skills enable learners to engage with the entire curriculum effectively and prepare them for lifelong learning. These skills equip learners with the ability to adapt to change and navigate life's challenges in the 21st century.

### The key generic skills include:

# 1

#### Critical thinking and problem-solving

- i) Planning and carrying out investigations
- ii) Sorting and analysing information
- iii) Identifying problems and proposing solutions
- iv) Predicting outcomes and making reasoned decisions
- v) Evaluating different solutions

#### Co-operation and Self-Directed Learning

- i) Working effectively in diverse teams
- ii) Interacting effectively with others
- iii) Taking responsibility for own learning
- iv) Working independently with persistence
- v) Managing goals and time

# 2

# 3

#### Creativity and Innovation

- i) Using imaginations to explore possibilities
- ii) Working with others to generate ideas
- iii) Suggesting and developing new solutions
- iv) Experimenting with innovative alternatives
- v) Looking for patterns and making generalisation

#### Communication

- i) Listening attentively and with comprehension
- ii) Talking confidently and explaining ideas/opinions clearly
- iii) Reading accurately and fluently
- iv) Writing and presenting information coherently
- v) Using a range of media to communicate ideas

# 4

# 5

#### Mathematical Computation

- i) Using numbers and measurements accurately
- ii) Interpreting and interrogating mathematical data
- iii) Using mathematics to justify and support decisions

#### Information and Communication Technology (ICT) Proficiency

- i) Using technology to create, manipulate and process information
- ii) Using technology to collaborate, communicate and refine work

# 6

# 7

#### Diversity and Multicultural Skills

- i) Appreciate cultural diversity
- ii) Respectfully responding to people of all cultures
- iii) Respecting positive cultural practices
- iv) Appreciating ethnicity as a cradle for creativity and innovation

## 1.5 Cross-Cutting Issues

Cross-cutting issues are topics of universal importance that are integrated across all subjects rather than taught in isolation. They help learners to make connections between subjects and understand the complexities of life. These issues include:

- i) Environmental awareness
- ii) Health awareness
- iii) Life skills
- iv) Mixed abilities and involvement
- v) Socio-economic challenges
- vi) Citizenship and patriotism

These topics are relevant to all areas of study and are embedded in various learning outcomes to ensure holistic education and global awareness.

## 1.6 Values

The curriculum is underpinned by a clear set of values that guide its implementation and the work of schools. These values, based on the Uganda National Ethics and Values Policy of 2013, are:

- i) Respect for humanity and the environment
- ii) Honesty, always uphold and defend the truth
- iii) Justice and fairness in dealing with others
- iv) Hard work for self-reliance
- v) Integrity, moral uprightness, and sound character
- vi) Creativity and innovation
- vii) Social responsibility
- viii) Social harmony
- ix) National unity; and
- x) National consciousness and patriotism

These values are not directly taught or assessed through examinations but are integrated into learning outcomes and are developed throughout the learner's education journey.

## 1.7 ICT Integration

The integration of ICTs into teaching and learning is strongly encouraged in this A-level adapted curriculum. ICT enhances the implementation of competency-based learning by fostering learner engagement, creativity, and lifelong learning. Teachers are encouraged to use technology to create interactive content, such as digital simulations and videos, to illustrate abstract or complex concepts effectively. Integrating ICT not only enhances the learning experience but also equips learners with essential digital skills for the 21st century.

ICT teachers should endeavour to assist other subject teachers in making the ICT integration process a reality. The table below shows a sample of suggested ICT tools that may be applied to given tasks.

Sample Task in the Syllabus	Suggested ICT Tool
Fieldwork	Use of cameras to take photos and record videos
Locate places on a map	Use digital maps such as Google Maps or an equivalent application.
Presentation in class	Use presentation applications or online presentation tools like Canva
Search for keywords and meanings	Use an online dictionary or search online
Make drawing/graphics	Use drawing tools like Draw.io or publishing software/Word processor
Roleplay, narrations	Use audio and video recordings
Demonstrations	Use audio/video recordings, models, simulations, or virtual labs
Analyse and present data	Use spreadsheet software or any other analytics tools
Group discussions	Mind mapping software
Search for extra reading materials	Download files from the Internet from academic Databases
Writing equations and formulae	Use equation editors like MathType
Carry out academic search/research	Use the Internet, AI models, and other academic applications like "Encarta", "Britannica", etc.
Collaborate with others across the world	Form learning networks with blogs, social media, emails, and videoconferencing tools like Zoom, MS Teams, Webex, Google Meet or any other networking application.

## 1.8 Projects

Projects and project-based learning are integral to 21st-century education. In this syllabus, learners will undertake practical projects that align with the subject's focus on technology application and problem-solving. These projects promote hands-on learning, critical thinking, and the development of ICT skills. Teachers are encouraged to guide learners in selecting projects that connect to their local environment and real-world challenges.

## 1.9 The Aims of Secondary Education

The aims of secondary education in Uganda are to:

- i) 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,
- ii) promote an appreciation and understanding of the cultural heritage of Uganda, including its languages,
- iii) impart and promote a sense of self-discipline, ethical and spiritual values, personal and collective responsibility, and initiative,
- iv) enable individuals to acquire and develop knowledge and an understanding of emerging needs of society and the economy,
- v) provide up-to-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 the socio-economic development of Uganda,
- vi) enable individuals to develop basic scientific, technological, technical, agricultural, and commercial skills required for self-employment,
- vii) enable individuals to develop personal skills of problem solving, information gathering and interpretation, independent reading and writing, and self-improvement through learning and development of social, physical, and leadership skills such as those obtained through games, sports, societies, and clubs,
- viii) lay the foundation for further education,
- ix) 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,
- x) instil positive attitudes towards productive work and strong respect for the dignity of labour and those who engage in productive labour activities,
- xi) develop a positive attitude towards learning as a lifelong process.

## 1.10 Aims of the Advanced Level Curriculum

- i) To adopt a competency-based learning approach.
- ii) To develop holistic education for personal and national development based on clear shared values.
- iii) To develop key skills that are essential to work and life and promote lifelong learning.
- iv) To adopt an integrated approach to learning that develops the ability of learners to apply learning.
- v) To improve on assessments by incorporating school-based assessment into End of Cycle Assessment.
- vi) To emphasise learner's participation through engagement with the community.
- vii) To prepare for further education.

## 1.11 Rationale for Teaching Subsidiary ICT at Advanced Level

The Subsidiary ICT syllabus aims to enhance ICT literacy and practical skills for effective application in various contexts, foster innovation and collaboration through digital creativity and teamwork, and promote ethical technology use by emphasising cybersecurity, privacy, and adherence to ICT standards.

## 1.12 Subject Overview

The Subsidiary ICT syllabus aims to equip learners with essential digital skills, preparing them to effectively navigate the dynamic digital world while fostering their passion for addressing local and global challenges. The syllabus focuses on the following key areas:

### 1. Digital Literacy and Productivity Tools

The learner should:

- i) develop skills in using various ICT tools to enhance productivity,
- ii) demonstrate the ability to effectively perform tasks using digital communication, organisation, and collaboration tools,
- iii) diagnose and resolve basic hardware and software issues to meet specific user needs efficiently,
- iv) ensure system security and performance through the application of maintenance practices.

### 2. Multimedia and Digital Content Creation

The learner should:

- i) cultivate creativity and technical skills in multimedia production,
- ii) design and produce engaging digital content, considering audience needs and design principles,
- iii) create, design, and manage multimedia content using tools for various platforms,

iv) address real-world challenges through dynamic digital storytelling and content creation.

### 3. **Cybersecurity and Ethical Computing**

The learner should:

- i) understand cybersecurity principles, including data protection, threat management, and safe digital practices,
- ii) demonstrate ethical behaviour in ICT usage, respecting privacy, intellectual property, and responsible computing,
- iii) develop strategies to identify and mitigate cyber threats, promoting online safety for local and global contexts.

### 4. **Data Management and Computational Thinking**

The learner should:

- i) build knowledge and skills in organising, analysing, and managing data,
- ii) demonstrate computational thinking by solving problems logically and innovatively,
- iii) explore the role of data and computing in decision-making and innovation and address societal needs.

## 1.13 Time Allocation

The learner shall be engaged for six (6) periods per week from Senior Five to Senior Six.

## 1.14 Suggested Approaches to Teaching Subsidiary ICT

The following learner-centred and competency-based approaches are designed to actively engage the learner in ICT education, fostering practical skills and critical thinking. In these methods, teachers act as facilitators, guiding and supervising learners through various tasks and projects.

- i) **Inquiry-Based Learning:** The learner explores ICT concepts and tools through self-directed research driven by interest. He or she solves problems by posing questions, conducting experiments, and analysing scenarios, which enhances critical thinking, communication, and problem-solving abilities.
- ii) **Experiential Learning:** The learner engages in hands-on ICT projects, such as building databases or creating presentations. Reflecting on these experiences, the learner deepens his or her understanding, fostering the development of technical skills and reflective thinking.
- iii) **Problem and Project-Based Learning:** The learner addresses real-world ICT challenges by working on projects that require applying knowledge in practical contexts. This approach enhances critical thinking, teamwork, and research skills as one designs solutions and presents findings.
- iv) **Case-Based Learning:** The learner analyses real-world ICT scenarios, such as cybersecurity threats or emerging technologies, to develop critical thinking and analytical skills. Applying

theoretical knowledge to practical situations, the learner deepens his or her understanding of ICT applications.

- v) **Discovery Learning:** The learner constructs his or her understanding of ICT concepts through active exploration and inquiry. By experimenting with software, hardware, and emerging technologies, one develops problem-solving skills and can hypothesise and test solutions independently.

These approaches align with UNESCO's ICT Competency Framework for Teachers, emphasising integrating technology in education to enhance learning outcomes. Implementing these methods can create a dynamic and engaging learning environment that equips learners with the necessary skills to navigate the evolving field of ICT.

### 1.15 Programme Planner

Class/Term	Topic		Sub-topics		Periods
Senior Five Term 1	1	Introduction to ICT	1.1	World of ICTs	10
			1.2	ICT Literacy	10
			1.3	Computer File Management	8
	2	Electronic Presentation	2.1	Working With Presentation Software	6
			2.2	Presentation Formatting	8
			2.3	Collaboration, Automation and Presentation Delivery	6
Senior Five Term 2	3	Computer Hardware	3.1	Hardware Classification	10
			3.2	Hands-on Assembly	12
			3.3	Hardware Troubleshooting and Maintenance	10
	4	Computer Software	4.1	Software Identification	10
			4.2	Software Installation and Configuration	18
			4.3	Software Troubleshooting	10
Senior Five Term 3	5	Computer Word Processing	5.1	Working With Word Processing Software	6
			5.2	Inserting Objects	6

	6	Electronic Spreadsheet	5.3	Advanced Features	12
			5.4	Online Collaboration	6
			6.1	Working With Spreadsheet Software	6
			6.2	Formulae and Functions	16
Senior Six Term 1	7	The Internet and Digital Communications	6.3	Working With Charts	8
			7.1	Electronic Data Sharing	8
			7.2	The Internet and the WWW	4
			7.3	Email and Social Media Communications	8
			7.4	Online Transactions	8
			7.5	Managing Virtual Meetings	8
Senior Six Term 2	8	Electronic Publication	7.6	ICT Ethics and Cybersecurity	8
			8.1	Introduction to Electronic Publishing Software	8
			8.2	Using Publication Features	28
Senior Six Term 2	9	Electronic Databases	9.1	Database Concepts	15
			9.2	Managing Simple Database	30
			9.3	Database Relationships	15
Senior Six Term 3	10	AI and Related Emerging Technologies	10.1	AI and Related Concepts	14
			10.2	AI Areas of Application	16
			10.3	Generative AI and Prompt Creation	16
			10.4	Other Emerging Technologies	14

### 1.16 Note to Users

The syllabus details for all subjects are set out in three columns:

Learning outcomes	Suggested learning activities	Sample assessment strategy
The knowledge, understanding, skills, generic skills, values, and attitudes are expected to be learned by the end of the topic. Hence, each learning outcome is coded	The sorts of hands on and minds on engagements, which include the generic skills that will help learners achieve the Learning Outcomes. They	Opportunities for assessment within the learning process that is, during the lesson.

<p>with some of these as: <b>k, u, s, gs, and v/a</b> for emphasis to the teacher on what to consider during the lesson.</p>	<p>enable learners to Discover, Explain, Apply and Analyse (<b>DEAA</b>) as they participate in knowledge construction.</p>	<p>Teachers can also devise other means of assessments that are in line with the activities.</p>
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Teachers should prepare their lesson plans in line with the Learning Outcomes using the Suggested Learning Activities as a guide. These are not the only possible learning activities; therefore, teachers are encouraged to extend these and devise their own activities that are appropriate to their classroom situation.

In addition, teachers should adapt these activities to suit the different special educational needs of their learners.



## 2.0 DETAILED SYLLABUS

### Senior Five Term 1

#### Topic 1: Introduction to ICTs

**Duration: 28 Periods**

**Competency:** The learner operates a variety of ICTs to perform tasks in day-to-day life.

Learning Outcomes The learner should be able to:	Suggested Teaching and Learning Activities	Sample Assessment Strategies
a) explore the utilisation of various ICT tools in day-to-day life. (k, u, a, gs)	a) In pairs, learners identify and discuss how ICT tools are used in different fields. b) Learners make plenary presentations by role-playing how ICTs are used in those fields. c) Learners take a tour around the school to explore how ICT tools are used within the school system. <i>(For learners with visual and hearing impairment, an audio-visual tour with captions should be recorded to supplement this activity)</i>	a) Observe pair interactions to assess collaboration and engagement in the discussion focusing on the use of ICT in different fields. b) Observe as learners tour the school, identifying ICT tools. Note interactions with ICT tools and peers—accuracy in identifying tools, participation, and teamwork. c) Converse with learners about the suitability, limitations, and alternatives of ICT tools, asking probing questions to clarify misconceptions. d) Assess learners' presentations and written work for clarity, coherence and critical evaluation of ICT tools and their application. <i>(Recognise the efforts of learners with disabilities for inclusion purposes)</i>
b) use digital tools to solve day-to-day life challenges. (k, s, v, gs)	a) In groups, learners collaborate to explore how different ICT components can be connected to form a working system. b) In small groups, learners research and create a detailed flowchart that explains the booting process in various operating systems (e.g., Windows, MacOS, Linux). c) In groups, learners present their flowchart, explaining the process to the class using a multimedia	a) Observe learners as they identify, explain, and connect ICT components, focusing on accuracy and teamwork. b) Engage learners in a dialogue about the steps of the booting process, using probing questions to assess their depth of understanding. c) Assess learners' flowcharts and group presentations for clarity, accuracy, and logical reasoning in

	<p>presentation (e.g., animations or step-by-step videos).</p> <p>d) In small groups, learners practise starting and shutting down various ICT devices, such as computers, smartphones, printers, and routers, under different scenarios (e.g., proper shutdown, forced shutdown, unexpected power loss).</p> <p>e) Learners demonstrate scenarios where they must solve typical start-up and shutdown issues.</p> <p>f) In groups, learners present how they managed the challenges and document best practices for everyday troubleshooting tasks.</p> <p>g) Learners make a write-up about the significance of observing proper start-up and shutdown of ICT devices.</p>	<p>explaining how components and processes work together. <i>(Recognise the efforts of learners with disabilities for inclusion purposes)</i></p>
<p>c) create directories and use them to manage electronic files. (k, u, s)</p>	<p>a) Learners work together to create and organise files into folders and subfolders based on a given task (e.g., creating a project directory for schoolwork or a business).</p> <p>b) Learners collaborate to save files on various storage media, such as USB drives, external hard drives, and others.</p> <p>c) Learners collaborate to simulate a real-world scenario (e.g., storing a client’s information for a project) by creating a file structure and saving files in the appropriate locations.</p> <p>d) Individually, learners save documents in specified formats (e.g. .docx, .pdf, .txt) and designated folders. <i>(learners with disabilities shouldn't be in their groups)</i></p>	<p>a) Observe learners as they create, organise, retrieve, and save files and folders, focusing on proper structure and collaboration.</p> <p>b) Engage learners in discussions about the rationale for their file organisation and saving practices, using probing questions to assess clarity and decision-making.</p> <p>c) Assess how well learners organise their folders, files, and presentations to ensure they are clear, logical, and fit the given task. <i>(Recognise the efforts of learners with disabilities for inclusion purposes)</i></p>

## Topic 2: Electronic Presentation

**Duration: 32 Periods**

**Competency:** The learner creates and delivers visually appealing and interactive electronic presentations to communicate ideas effectively.

<b>Learning Outcomes</b> The learner should be able to:	<b>Suggested Teaching and Learning Activities</b>	<b>Sample Assessment Strategies</b>
a) create electronic presentations and use them to communicate ideas. (k, u, s, a)	a) Learners conduct research in groups to compare different presentation software (e.g., PowerPoint, Google Slides, Canva, Prezi). b) In groups, learners explore various template designs and layouts provided by the identified presentation software. They select which layouts are most effective for presenting specific types of content (e.g., graphs for data and images for storytelling). c) In groups, learners create a presentation on a predetermined topic, applying the template designs and layouts they selected earlier. d) In groups, learners demonstrate a presentation with a strict time limit (e.g., 30–40 minutes), focusing on applying suitable templates and layouts efficiently. e) In pairs, learners work together to customise the theme of their presentation, adjusting elements like background colours, fonts, and slide layouts to ensure visual consistency and alignment with the chosen topic. f) Learners present their work using the appropriate features of the presentation software, like speaker notes, slideshow mode, and other interactive tools (e.g., animations, transitions). They practise public speaking skills and use these tools to support and enhance their delivery.	a) Converse with learners as they research, focusing on the uniqueness of different software tools. b) Observe learners explore various template designs and layouts focussing on their ability to work in groups. c) Observe learners as they make presentations about the choice of the layouts focusing on their ability to speak confidently and explain ideas. d) Converse with the learners as they create a presentation on a predetermined topic, focusing on the number of slides, slide titles, etc. e) Assess the learner's presentation, focusing on both the content and the visual appeal. Ensure that the slides are clear and engaging and effectively communicate the key ideas.
b) format presentations to make them visually	a) Learners create individual slides within a group project, applying text formatting, bullet points, word art, and smart art to enhance visual appeal.	a) Observe learners as they design and enhance slides, focusing on the application of formatting, multimedia, and design

<p>appealing and engaging to the audience. (u, s, v)</p>	<p>b) Learners collaborate to incorporate multimedia elements (e.g., images, videos, animations, audio) into their presentations to make them more engaging.</p> <p>c) In pairs, learners demonstrate slide transitions and animations, applying them to their presentation while discussing when and how to use them effectively</p> <p>d) Learners work together to format a presentation that tells a compelling story, focusing on how design elements can guide the audience through the narrative.</p> <p>e) Learners collaborate to design a professional presentation for a simulated event (e.g., product launch or educational seminar), ensuring it is visually appealing and tailored to the audience.</p>	<p>principles to improve visual appeal and readability.</p> <p>b) Converse with learners as they discuss their choice of transitions, animations, and design elements, assessing their understanding of effective presentation techniques.</p> <p>c) Assess learners' presentations for visual hierarchy, alignment, use of multimedia, and storytelling effectiveness in meeting the given task or scenario.</p>
<p>c) collaborate with others to develop and deliver a presentation using online and offline tools. (k, u, s, v, gs)</p>	<p>a) In small groups, learners collaboratively design and develop a presentation using cloud-based tools (e.g., Google Slides, Microsoft PowerPoint Online, or Canva).</p> <p>b) Individually, learners prepare and deliver a 5-minute presentation on a topic of their choice, incorporating at least one relevant visual aid to support their presentations.</p> <p>c) Using video conferencing tools (e.g., Zoom, Microsoft Teams, Google Meet), learners schedule and participate in virtual rehearsal sessions, presenting their slides to peers for feedback. In these virtual sessions, they take on the roles of both presenters and active audience members, providing constructive feedback on each other's slides, delivery, and overall presentation design.</p>	<p>a) Observe learners as they collaborate online in real-time, focusing on their ability to effectively use cloud-based tools and coordinate their contributions and their ability to interact effectively with others.</p> <p>b) Observe learners as they deliver their presentation, focusing on their engagement with the audience through eye contact, audience interaction, and ability to maintain attentiveness.</p> <p>c) Assess the final presentation for quality, including the use of nonverbal communication, appropriate tone and pitch, and overall professionalism.</p> <p>d) Assess the final shared presentation for cohesiveness, quality of individual contributions, and the effective integration of collaborative efforts.</p>

**N.B:** (This topic may not be suitable for learners with visual impairment as it involves a lot of graphics)

## Senor Five Term 2

### Topic 3: Computer Hardware

**Duration: 28 Periods**

**Competency:** The learner performs routine service on computer hardware to ensure its optimal functionality and performance.

Learning Outcomes	Suggested Teaching and Learning Activities	Sample Assessment Strategies
<p>The learner should be able to:</p> <p>a) classify hardware components, explaining their functions. (k, u, a)</p>	<p>a) In small groups, learners identify and label various hardware components. <i>(For learners with visual and hearing impairment, an audio-visual video clip with captions should be availed for full participation)</i></p> <p>b) In a think-pair-share session, learners reflect on the importance of each hardware tool and their contribution to the overall functionality of a computer.</p> <p>c) Learners work in groups to classify hardware devices, including input devices, output devices, storage devices, communication devices, and processing tools.</p> <p>d) Learners engage in a fun and interactive game, either using physical flashcards or an online tool, to match hardware device names with their categories (input, output, storage, etc.) and functions.</p> <p>e) In groups, learners explore modern devices (e.g., touchscreens) that can function as both input and output devices and report their findings to the class.</p>	<p>a) Observe learners as they identify and label hardware components in small group activities, noting collaboration.</p> <p>b) Converse with the learners as they identify the different hardware components focusing on the accuracy of the names of the components, their importances and classifications.</p> <p>c) Assess group reports and presentations on dual-function devices focusing on circumstances under which it can be used as an input device and output device.  <i>(Recognise the efforts of learners with disabilities for inclusion purposes)</i></p>

<p>b) assemble a computer system ensuring correct connections and configurations. (u, s, v, gs)</p>	<p>a) Learners safely work with standard external hardware components (mouse, keyboard, projector, monitor, cables, etc.) connecting them to the system unit.</p> <p>b) Learners collaborate using computer assembly simulation software or an interactive online tool to assemble and connect a computer system virtually.</p> <p>c) Learners safely connect internal components (motherboard, processor, RAM chips, hard drive, power supply unit, expansion cards, etc.), and correctly installing them within the system unit.</p> <p>d) In pairs, learners collaborate to use system diagnostic tools (e.g., Task Manager, System Information, or third-party software) to analyse system specifications and match each component to its identified purpose.</p>	<p>a) Observe learners as they assemble or simulate computer systems, focusing on accuracy and adherence to instructions.</p> <p>b) Converse with learners as they discuss about the purpose and functionality of each hardware component.</p> <p>c) Assess learners' assembled hardware components and make diagnostic analyses for accuracy, completeness, and proper identification of system components and their purposes.</p>
<p>c) demonstrate safe handling of computer hardware and perform routine maintenance for optimal performance. (s, v, a, gs)</p>	<p>a) In small groups, learners research and demonstrate proper handling techniques of different hardware components.</p> <p>b) In pairs, learners discuss safety measures, such as turning off power before assembling components.</p> <p>c) Learners troubleshoot and resolve hardware issues of a nonfunctional computer collaboratively.</p> <p>d) In groups, learners clean internal and external components, such as removing dust from fans, heat sinks, and power supplies.</p>	<p>a) Observe learners as they handle hardware components and safety tools, focusing on proper handling techniques, adherence to safety protocols, and teamwork during troubleshooting tasks.</p> <p>b) Converse with learners as they discuss about safety measures and troubleshooting strategies, assessing their understanding of when and why these steps are necessary.</p> <p>c) Assess learners' ability to effectively, accurately, and safely demonstrate troubleshooting process and essential hardware cleaning activities.</p>

## Topic 4: Computer Software

**Duration: 30 Periods**

**Competency:** The learner installs and maintains computer software to ensure optimal functionality and performance.

<b>Learning Outcomes</b> The learner should be able to:	<b>Suggested Teaching and Learning Activities</b>	<b>Sample Assessment Strategies</b>
a) evaluate software options based on user requirements and system capabilities. (k, s, a, gs)	a) In pairs or small groups, learners explore the different software on their devices. They also describe the primary purpose of each software type in managing or enhancing computer functionality. b) In small groups, learners analyse user requirements (e.g., for a business, school, or personal use), and compare different software options, considering system capabilities. Each group presents their recommendations and explains their reasoning behind the choices. c) In a lab environment, learners collaborate to explore and utilise multiple software applications (e.g., antivirus programs, office suites, or system optimisers). They assess the performance, user interface, and compatibility with the provided hardware and system. d) Learners role play as either clients or IT consultants. The client team presents requirements for software solutions (e.g., document management systems, customer relationship management tools, or system maintenance). The consultant conducts an analysis, and recommends appropriate software or system solutions. The consultant team must clearly explain how their recommendations align with the client’s specific needs and the technical capabilities of the proposed solutions. e) Learners discuss which type of software (system, application, or utility) is most critical for various scenarios, such as managing a business, maintaining a personal computer, or running a school system.  <i>(Assistive software for disability awareness could be discussed to support inclusion)</i>	a) Observe learners as they classify software types and engage in role-playing activities, focusing on accuracy, clarity of explanations. b) Observe the learners as they present, focusing on their ability to use a range of media to communicate ideas. c) Converse with learners during discussions and debates about the software options and their suitability for specific user needs, assessing their ability to justify choices based on system capabilities. d) Assess learners' case study analyses, recommendations, and group presentations for logical reasoning, clear communication, and a deep understanding of software functionality and its alignment with user requirements.

<p>b) install operating systems and software applications for optimal performance. (u, s, a, gs)</p>	<p>a) In groups, learners analyse hardware specifications and identify suitable operating systems and applications, presenting their findings and justifications to the class.</p> <p>b) Learners work together, following provided manuals and step-by-step guides to install an operating system and a software application on a computer. <i>(For learners with visual and hearing impairment, an audio visual video clip with captions should be availed for full participation)</i></p> <p>c) Working individually or in pairs, learners configure advanced software settings, such as user preferences, network options, and security protocols, based on specific real-world scenarios.</p>	<p>a. Observe learners as they analyse hardware specifications and configure software settings, focusing on accuracy, attention to detail, and the ability to troubleshoot compatibility issues.</p> <p>b. Engage learners in discussions about their choices of operating systems, applications, and configurations, probing their reasoning behind decisions to ensure they understand compatibility and real-world application.</p> <p>c. Assess learners' presentations, installation processes, and configuration tasks for clarity, correctness, and how well they apply the instructions and handle software settings based on given scenarios.</p>
<p>c) troubleshoot common software problems and implement effective solutions. (u, s, v, gs)</p>	<p>a) In pairs, learners work with computers or virtual environments pre-configured with common software issues (e.g., crashes, errors, or compatibility problems). They use diagnostic tools (e.g., Event Viewer, Task Manager) to identify and resolve them systematically, documenting the steps taken and the tools used to restore functionality.</p> <p>b) In small groups, learners explore and practise using various diagnostic tools like system logs, compatibility checkers, and antivirus programs. Each group member takes turns applying the tools to troubleshoot specific software malfunctions, documenting their findings</p>	<p>a) Observe learners as they use diagnostic tools to identify and resolve software issues, focusing on their systematic approach, problem-solving skills, and teamwork.</p> <p>b) Engage learners in discussions about their diagnostic strategies, asking probing questions to evaluate their understanding of the root causes of software malfunctions</p>

	<p>and the effectiveness of each tool in solving the issue.</p> <p>c) Learners analyse real-world case studies of software malfunctions (e.g., an office application experiencing crashes). They identify the root causes, propose effective solutions, and discuss how their strategies minimise downtime, enhance system reliability, and prevent recurring issues.</p> <p>d) In groups, learners take turns playing the roles of IT technicians and clients. The "client" describes a software issue, while the "technician" systematically identifies the problem using diagnostic strategies. The technician then proposes a solution, explaining the reasoning behind their choices.</p> <p>e) Learners individually present to the class their process of installing and configuring software. They highlight the key steps, potential challenges, and troubleshooting strategies used during the process. Feedback from peers is encouraged to help refine their skills and enhance understanding.</p>	<p>and how to address them effectively.</p> <p>c) Assess learners' documentation of troubleshooting processes, case study analyses, role-playing scenarios, and individual presentations for clarity, accuracy, and depth of their problem-solving approaches. <i>(Recognise the efforts of learners with disabilities for inclusion purposes)</i></p>
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## Senior Five Term 3

### TOPIC 5: Electronic Word Processing

**Duration: 30 Periods**

**Competency:** The learner creates professional Word documents for effective communication.

<b>Learning Outcomes</b> The learner should be able to:	<b>Suggested Teaching and Learning Activities</b>	<b>Sample Assessment Strategies</b>
a) format and edit a Word document. (k, u, s, gs)	a) Learners explore different word processing software (e.g., Microsoft Word, Google Docs, LibreOffice Writer), and practise opening and creating a new document. b) In groups, learners analyse key features such as menus, toolbars, and document templates. c) In small groups, learners create a document by arranging elements such as margins, page orientation, and spacing. d) Learners collaborate to edit and review a document, utilising a range of tools and features available in word processing software. e) Learners collaborate online to apply various formatting tools in a Word document, including font styles, paragraph alignment, page setup, and heading styles, to enhance the document's presentation. f) In small groups, learners practise importing external data such as tables from Excel, or images from the web into a document. g) Learners work in small groups to adjust the size and format of imported elements, ensuring they integrate smoothly with the document layout. h) Learners collaborate in small groups to practise saving documents in different formats (e.g., .docx, .pdf) and exporting them for printing or sharing. i) Learners collaborate in groups, exchanging documents with peers for review and providing constructive feedback on formatting, layout, and content organisation.	a) Observe learners as they explore and create documents, focusing on their ability to navigate software tools, apply layout features, and use formatting options effectively. b) Engage learners in discussions about the document creation and editing process, assessing their understanding of the features they use and how they enhance document presentation. c) Assess Word documents for proper use of formatting tools, content organisation, integration of external elements, and overall presentation quality. Additionally, evaluate their ability to provide constructive feedback on peer documents. d) Observe learners as they format imported focusing on their ability to try out innovative alternatives.

<p>b) apply document objects to enhance a Word document. (u, s, v, gs)</p>	<p>a) Learners collaborate in groups to discuss how various objects can enhance document presentation, sharing ideas on their most effective uses.</p> <p>b) Learners collaborate in groups, exchanging documents with peers for review and offering constructive feedback on formatting, layout, and content organisation.</p> <p>c) Learners collaborate in pairs to create a table for organising data within a document.</p> <p>d) In pairs, learners apply different formatting styles, such as borders, shading, and font adjustments, to enhance the table appearance and readability.</p> <p>e) Learners collaborate in groups to apply SmartArt based on provided data.</p> <p>f) In pairs, learners collaborate to insert and manipulate various shapes (e.g., rectangles, arrows, circles) in a document, creating simple diagrams.</p> <p>g) Learners collaborate online in pairs to apply WordArt for creating stylised headings and emphasised text. They will experiment with various styles, colours, and effects to enhance the visibility and impact of the text.</p> <p>h) Learners collaborate in groups to search for and insert appropriate clip art or images into a document. They practice resizing, positioning, and formatting the visuals to enhance and support the document's content.</p> <p>i) Learners collaborate in pairs, exchanging documents and providing feedback on the use of visual elements.</p> <p>j) Learners collaborate in groups to explore mail merging.</p>	<p>a) Engage learners in discussions about the purpose and best uses of each visual element, probing their understanding of how these tools contribute to document clarity, readability, and design.</p> <p>b) Observe learners as they explore and apply different Word processor objects (e.g., tables, charts, shapes, WordArt, etc.), focusing on their ability to use these elements creatively and effectively to enhance document presentation.</p> <p>c) Assess the final documents for proper integration and formatting of objects like tables, shapes, and images, evaluating how well they support the document's content and overall presentation. Also, evaluate the quality of peer feedback regarding the use of visual elements.</p> <p>d) Assess learners' documents focusing on how well the tables, charts, and other objects enhance the document's overall structure and readability.</p>
<p>c) use document referencing features. (u, s, v, gs)</p>	<p>a) Learners collaborate in groups to explore the advanced features of Word processing software, such as referencing tools (e.g., citations, footnotes, endnotes).</p>	<p>a) Observe learners as they use advanced Word processing features (e.g., referencing tools, mail merge, cloud</p>

	<p>b) Learners collaborate in groups to create a research document that includes citations and a bibliography using referencing tools. They apply various citation styles (e.g., APA, MLA) and generate a reference list automatically.</p> <p>c) Learners collaborate in pairs or small groups using cloud-based Word processing software (e.g., Google Docs or Microsoft Word Online) to create a shared document. They work in real-time, leveraging key features such as comments, track changes, and suggestions. Each learner contributes to different sections of the document, and they actively provide feedback to refine and improve the document.</p> <p>d) Individually, learners share their documents with peers via cloud storage or email and request feedback. They review the feedback, make necessary changes, and apply advanced features like automated formatting or indexing to finalise the document.</p> <p>e) Individually or in groups, learners create a comprehensive document (e.g., research paper, newsletter, or blog articles that incorporates referencing tools, mail merging, and collaborative features. They apply automation for efficient content management and finalise the document for sharing.</p>	<p>collaboration), focusing on their ability to apply these tools effectively and accurately in real-world tasks.</p> <p>b) Converse with learners as they use advanced word processing features like citations, mail merging, and real-time collaboration, probing their understanding of how these tools enhance document creation and management.</p> <p>c) Assess the final documents for the correct and consistent use of advanced features, such as referencing styles, citation lists, personalised mail merge, and collaborative edits, ensuring they are well organised, formatted, and meet the intended purpose.</p>
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## Topic 6: Electronic Spreadsheet

**Duration: 30 Periods**

**Competency:** The learner organises, manipulates, and visualises data to draw insights for data-driven decision-making.

<b>Learning Outcomes</b> The learner should be able to:	<b>Suggested Teaching and Learning Activities</b>	<b>Sample Assessment Strategies</b>
collect and organise data. (k, u, s)	<ol style="list-style-type: none"> <li>a) In groups, learners explore spreadsheet programs (e.g., Microsoft Excel or Google Sheets) and analyse their essential functions.</li> <li>b) In groups, learners create a new worksheet, navigate through cells, rows, and columns, and enter data.</li> <li>c) In pairs, learners create a simple budget worksheet. They enter data (e.g., expenses and income) and apply formatting for better readability.</li> <li>d) In small groups, learners practise sorting based on different criteria (e.g., alphabetical, numerical, date) on a dataset.</li> <li>e) In groups, learners use filters to display only relevant data based on specified conditions (e.g., filtering by date range or category).</li> <li>f) In pairs, learners choose a given subject area in their combination and collect relevant data (e.g., survey results, measurements, or statistics) and organise it in spreadsheet software.</li> <li>g) In pairs, learners choose a subject area from their course combination, collect relevant data using online tools (e.g. Google Forms, etc), and organise it in spreadsheet software.</li> </ol>	<ol style="list-style-type: none"> <li>a) Observe learners as they organise data in a worksheet by entering information, formatting cells (e.g., text size, colours, borders), sorting data, and adjusting column widths.</li> <li>b) Engage learners in a discussion to assess their understanding of the process and the reasoning behind their choices. Ask them to explain why they chose specific formatting options (e.g., font size, colour schemes, cell styles).</li> <li>c) Assess the worksheet to ensure data is accurate, well-organized, professionally formatted with consistent fonts, readable text, and optimized for printing with proper margins, headers, and footers.</li> </ol>

<p>b) manipulate and analyse data to gain insights. (s, v, gs)</p>	<p>a) Learners apply formulas to manipulate and analyse data.</p> <p>b) Learners apply statistical, mathematical, and date/time functions in spreadsheet software, such as the SUM, SUMIF, RANK, AVERAGE, AVERAGEIF, MIN, MAX, COUNT, COUNTIF, etc., to perform simple calculations and manipulation on a sample dataset.</p> <p>c) In groups, learners apply logical functions such as IF, VLOOKUP, or HLOOKUP functions to retrieve insights from a large dataset.</p> <p>d) Learners work together to consolidate data from multiple worksheets into a single worksheet using functions and pivot tables.</p> <p>e) Learners review (peer review) each other's spreadsheets, checking data organisation, formats, and formulas, and suggest improvements for clarity and efficiency.</p>	<p>a) Observe learners as they apply formulas and functions within the spreadsheet, such as SUM, AVERAGE, COUNT, and MAX/MIN.</p> <p>b) Assess learners' worksheets for correct formulas, proper function syntax, and logical application in the task context.</p> <p>c) Engage a learner in a dialogue, evaluating their thought process behind applying formulas and functions.</p> <p><i>(Recognise the efforts of learners with disabilities for inclusion purposes)</i></p>
<p>c) create visual objects (charts, graphs) to present data. (s, v, gs)</p>	<p>a) Learners explore the different visualisation objects available in spreadsheet software (e.g., bar charts, line graphs, maps, pie charts).</p> <p>b) Learners present different forms of data using appropriate visualisation objects.</p> <p>c) Learners collaboratively customise the chart by modifying elements such as the title, axis labels, legends, data labels, and colours to improve clarity and presentation.</p> <p>d) Learners create a combo chart (e.g., a bar and line chart together) to compare two different data types in one visualisation.</p> <p>e) Learners collaborate online to analyse and visualise a dataset (e.g., customer feedback, survey results) using appropriate spreadsheet tools.</p>	<p>a) Observe how learners use chart formatting tools to enhance data communication, focusing on their ability to choose the correct chart type for the data, customise the chart for readability and clarity, and ensure the chart aligns with the intended analysis.</p> <p>b) Conduct a discussion with learners to understand their reasoning behind the chart creation and customisation choices.</p> <p>c) Evaluate the chart's visual clarity, accuracy, and effectiveness in communicating the intended message, ensuring that the chart helps to analyse the data and provides clear insights for the intended audience.</p>

## Senior Six Term 1

### Topic 7: The Internet and Digital Communications Duration: 30 Periods

**Competency:** The learner utilises the internet and digital communication tools to ethically access and exchange information.

<b>Learning Outcomes</b> The learner should be able to:	<b>Suggested Teaching and Learning Activities</b>	<b>Sample Assessment Strategies</b>
a) share electronic data across devices using various methods. (u, s, v, a, gs)	a) Learners connect two devices via Bluetooth, USB, etc., and transfer files. They discuss the steps taken, potential challenges, and how to ensure data security during the transfer. b) Learners remotely collaborate and share data using different methods, including screen mirroring, remote desktop access, and collaborative tools like AnyDesk and TeamViewer. c) In groups, learners identify and implement the best data sharing methods. d) Learners role-play as IT specialists who must guide "clients" on sharing data between devices.	a) Observe learners as they connect devices and transfer files, noting their ability to identify and troubleshoot common challenges. b) Observe learners' ability to take responsibility for their own learning. c) Engage in discussions with learners about the methods used for data sharing, prompting them to explain each method's advantages, limitations, and potential risks, such as Bluetooth, USB, and remote access tools. d) Assess the effectiveness of learners' data-sharing solutions, focusing on how well they apply appropriate methods for the given scenario (e.g., sharing large files, limited internet access) and the clarity of their step-by-step instructions for clients.
b) use the Internet services for secure access and ethical communication. (u, s, v, a, gs)	a) In small groups, learners research, discuss, and present the differences between the Internet and the World Wide Web (WWW). b) Learners use a web browser to search for specific information online. They identify and discuss different types of web resources (e.g., websites, blogs, online databases) and explain how they can be utilised for academic or professional purposes.	a) Observe learners during their research and discussion, noting their ability to differentiate between the Internet and the WWW, and assess the accuracy and clarity of their comparison charts when presenting the key functions and technologies. b) Converse with learners as they complete vital sections such as the profile picture, bio, and professional summary,

	<ul style="list-style-type: none"> <li>c) Learners use advanced search techniques such as Boolean operators, filters, and quotation marks to refine their searches and find more relevant information.</li> <li>d) Learners create an email account with a personal signature and demonstrate how to compose, send, filter and respond to emails professionally.</li> <li>e) In pairs, learners exchange emails on a topic (e.g., applying for a job or requesting information) while practising proper email etiquette.</li> <li>f) Learners set up or review a professional social media profile on platforms like LinkedIn.</li> <li>g) Learners role-play scenarios such as resolving a customer service issue via email or responding to negative comments on a social media post.</li> <li>h) In groups, learners design a simple social media campaign for a fictional cause or product. They create posts, schedule them using social media management tools, and discuss how to engage audiences effectively.</li> <li>i) Learners compose an email with attachments (e.g., documents, images) and practise formatting text (e.g., bold, italics, bullet points).</li> <li>j) In groups, learners analyse and present a case study on the positive or negative effects of email or social media communication.</li> <li>k) Learners evaluate popular e-commerce platforms (e.g., Amazon, eBay, Jumia, Alibaba) and identify the steps in purchasing products or services online.</li> <li>l) Individually, learners navigate an e-commerce platform to simulate making an online purchase. They add items to the cart, enter trial payment details, and complete</li> </ul>	<p>emphasising appropriate and respectful communication.</p> <ul style="list-style-type: none"> <li>c) Engage in discussions with learners about the web resources they identify, prompting them to explain how each resource (e.g., websites, blogs, online databases) can be used effectively in academic or professional contexts.</li> <li>d) Evaluate learners' ability to perform advanced searches using Boolean operators, filters, and quotation marks, assessing the relevance and quality of the information they retrieve and their understanding of how these techniques improve search efficiency.</li> <li>e) Observe learners as they organise their email inboxes using folders, filters, and labels, assessing the clarity and organisation of their email systems and checking if they can effectively compose, send, and respond to emails professionally.</li> <li>f) Observe learners as they exchange emails in pairs, paying attention to their use of correct email etiquette (subject lines, greetings, concise messaging) and their ability to respond professionally.</li> <li>g) Converse with learners as they participate in role-playing activities. Then, discuss their approach to maintaining a professional tone and resolving conflicts, provide feedback on their communication skills, and offer suggestions for improvement.</li> <li>h) Observe learners as they navigate e-commerce platforms and use digital wallets, focusing on their ability to follow the steps for making purchases, transferring funds, and applying security features</li> <li>i) Assess learners' ability to use e-commerce platforms and digital</li> </ul>
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	<p>the transaction, ensuring all required fields are filled out correctly.</p> <p>m) In pairs, learners set up a demo account for a digital wallet (e.g., PayPal). They practise transferring funds, making payments, and checking transaction histories.</p> <p>n) In groups, learners explore topics such as encryption, two-factor authentication, and secure payment gateways and create a poster or infographic explaining how these technologies work.</p>	<p>wallets by reviewing their transactions and account setups while ensuring that they have correctly applied steps for making purchases, transferring funds, and using security technologies like two-factor authentication.</p>
<p>c) manage virtual meetings. (s, v, a, gs)</p>	<p>a) In pairs, learners evaluate popular virtual meeting platforms (e.g., Zoom, Microsoft Teams, Google Meet) and create a comparison chart highlighting features.</p> <p>b) Individually, learners schedule a virtual meeting, send invites using a calendar tool, and customise settings.</p> <p>c) Individually, learners schedule a webinar, send invites using a calendar tool, and customise settings.</p> <p>d) Learners conduct a virtual meeting with assigned roles (e.g., host, participant). They practise sharing their screen, managing time, and addressing technical issues.</p> <p>e) In groups, learners participate in a troubleshooting activity where they identify and resolve common virtual meeting issues (e.g., poor audio, frozen video, connectivity problems).</p>	<p>a) Observe learners as they explore virtual meeting platforms and participate in a simulated meeting, focusing on their ability to navigate platform features and manage meeting settings and paying attention to their proficiency in handling technical issues and managing virtual meeting logistics.</p> <p>b) Engage learners in discussions about their experiences with virtual meeting platforms such as screen sharing, breakout rooms, and chat functions.</p> <p>c) Assess the learners' ability to use virtual meeting platforms effectively by reviewing their meeting setups, comparison charts, and participation in simulated meetings. Evaluate their technical skills in organising and managing virtual meetings and their problem-solving abilities in addressing common issues (e.g., connectivity, screen sharing).</p>
<p>d) evaluate cyber threats and implement mitigation measures. (s, v, gs)</p>	<p>a) In groups, learners analyse real-life ICT ethics scenarios, such as data breaches or intellectual property violations. Each group discusses the ethical dilemmas and proposes solutions, presenting their findings to the class.</p>	<p>a) Observe learners during discussions and simulations on ICT ethics, focusing on their ability to identify ethical dilemmas, make informed decisions, and collaborate effectively on solutions.</p>

	<p>b) Learners take on roles of IT manager, employee, or consumer in a trial (imaginary) situation where ethical decisions must be made (e.g., handling user data). They debate the options and explain the ethical implications of their choices.</p> <p>c) Learners collaboratively simulate responding to a cybersecurity breach (e.g., compromised email account). They draft a response plan and present how they would mitigate risks and prevent future incidents.</p> <p>d) Learners review common cyber threats (e.g., phishing, malware, ransomware). They create a short presentation or infographic explaining the threat, its impact, and how to prevent it.</p> <p>e) Learners participate in a hands-on activity where they adjust the privacy settings of their social media accounts to enhance security.</p> <p>f) Learners analyse real-life examples of online transaction scams (e.g., phishing, fake websites). In small groups, they create a list of warning signs and develop strategies to avoid becoming a victim of online fraud.</p>	<p>b) Engage learners in explaining their decisions in ethical ICT scenarios, probing their understanding of ethical principles, and how they apply them to real-world situations such as data breaches or online scams.</p> <p>c) Evaluate learners' presentations, response plans, and privacy settings adjustments to ensure they demonstrate a solid understanding of cybersecurity risks, ethical decision-making, and strategies for preventing fraud and protecting data.</p>
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**Topic 8: Electronic Publication**
**Duration:** 30 Periods

**Competency:** The learner develops professional electronic publications to convey information and ideas effectively.

<b>Learning Outcomes</b> The learner should be able to:	<b>Suggested Teaching and Learning Activities</b>	<b>Sample Assessment Strategies</b>
a) edit and format digital documents using electronic publishing software. (k, u, s)	a) Learners explore the interface of various electronic publishing software (e.g., Microsoft Publisher, Adobe InDesign, and Canva). b) Learners create new documents and identify basic layout options, page size settings, and margin configuration tools. c) Learners apply appropriate predefined templates to create a flyer or brochure for an event. d) Learners adjust the page size (e.g., A4, letter size, custom size) and the page orientation (portrait/landscape) to match the document's requirements (e.g., a report, flyer, or poster). e) Learners explore the key features of electronic publishing software (e.g., text formatting, image insertion, shapes, and layout tools) by opening a new document and experimenting with these features to create a simple digital publication (e.g., a flyer or newsletter). f) Learners exchange their documents with peers and provide feedback on the layout and formatting.	a) Observe learners as they use electronic publishing software to explore the interface, apply layout settings, and experiment with design features for creating digital publications. b) Discuss with learners their design choices, focusing on how they apply page settings and formatting tools to meet the document's requirements. c) Assess the final digital publications for appropriate layout, formatting, and design, ensuring correct use of page settings, templates, and overall document structure.
b) apply appropriate tools and design principles to enhance electronic publication documents. (s, v, gs)	a) In groups, learners design a promotional flyer for a fictional event or business. b) Learners collaborate to create a digital poster for a school event or community initiative. c) Learners pair up to create a multi-page document (e.g., a brochure or catalogue).	a) Observe learners as they use the software to create promotional flyers, posters, and multi-page documents, paying attention to their ability to try out innovative alternatives, effectively apply design elements and software features such as integrating images, shapes,

	<p>d) Learners exchange their digital publications with a peer for review. They provide feedback on the design elements such as layout, colours, text formatting, and images.</p> <p>e) Learners present their final digital publication to the class, explaining their design choices, the message they aimed to communicate, and how they used the software's features to enhance their publication.</p>	<p>and other visual elements like icons or borders in order to effectively communicate the intended message.</p> <p>b) Engage learners in discussions about their design decisions, asking them to explain how they used templates, visual elements, and formatting tools to enhance their publication and convey the intended message.</p> <p>c) Evaluate the final digital publications for visual appeal, consistency, and clarity of message, ensuring appropriate use of design features, text formatting, and images to effectively communicate the intended content as well, assess the design rationale.</p>
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## Senior Six Term 2

### Topic 9: Electronic Databases

**Duration: 48 Periods**

**Competency:** The learner creates and manages electronic databases to ensure efficient data organisation, storage, and retrieval.

<b>Learning Outcomes</b> The learner should be able to:	<b>Suggested Teaching and Learning Activities</b>	<b>Sample Assessment Strategies</b>
a. explore database management systems. (k, u, s)	a) In groups, learners find information and compare popular database management software (e.g., PostgreSQL, Microsoft Access, MySQL, SQLite).. b) Learners analyse scenarios (e.g., managing school records, tracking inventory) and select the most suitable database management software. c) Learners create a new database using a database management program (e.g., SQL, Microsoft Access, LibreOffice Base). d) In groups, learners identify and discuss database objects.	a) Observe learners as they explore different database management software, focusing on their ability to identify key features and compare their functionality in real-world scenarios. b) Engage learners in discussions about the scenarios they analysed, prompting them to explain why they selected a particular database management software and how its features fit the requirements. c) Assess the created databases focusing on the necessary database objects with their names.
b. design a database and manage its data. (k, u, s, gs)	a) Learners accurately design a database table for given data (e.g., learners' records, product inventory) with appropriate data types. b) In small groups learners review and validate data. c) Learners populate a database table with the given data. d) Learners import data from external sources. e) Learners update specific records in the database (e.g., correcting errors, updating prices, or changing contact details). f) Learners create and run simple queries to retrieve specific data.	a) Observe learners as they create and manage databases, ensuring they can design tables with appropriate data types, populate data, and create queries. Pay attention to their understanding of database integrity and accuracy. b) Engage learners in discussions about the design choices they made for their databases, including data types and interface design, and how they ensure data accuracy and integrity. Encourage reflection on how the queries and reports support the database's functionality.

	<ul style="list-style-type: none"> <li>g) Learners generate simple reports.</li> <li>h) Learners exchange their databases with a peer and review each other's work.</li> <li>i) Learners present their completed database to the class, demonstrating how they created, updated, retrieved, and organised records.</li> </ul>	<ul style="list-style-type: none"> <li>c) Assess the completed databases for functionality, organisation, and accuracy. Review the data entry interfaces, query results, and reports to ensure learners follow best database design and data management practices.</li> </ul>
<p>c. create relational databases. (s, gs)</p>	<ul style="list-style-type: none"> <li>a) Learners explore a pre-designed database with multiple related tables. They identify how tables are connected through primary and foreign keys and discuss the purpose of these relationships.</li> <li>b) Learners create two or more related tables in a database (e.g., "learners" and "courses").</li> <li>c) Learners analyse different types of relationships (e.g., one-to-one, one-to-many, and many-to-many) by relating two or more tables.</li> <li>d) Learners create queries that retrieve data from multiple related tables (e.g., retrieving learner names and their enrolled courses).</li> <li>e) Learners exchange their relational databases with a peer for review.</li> <li>f) Learners present their relational database designs to the class, explaining the purpose of each table, the primary and foreign keys used, and how the relationships facilitate efficient data management.</li> </ul>	<ul style="list-style-type: none"> <li>a) Observe learners as they explore and create relational databases, ensuring they understand the use of primary and foreign keys to connect tables; as well, pay attention to how they establish relationships and create queries involving multiple related tables.</li> <li>b) Engage learners in discussions about the relationships between tables, types of relationships (one-to-one, one-to-many, many-to-many), and how these relationships improve database efficiency. Encourage reflection on how each table's purpose contributes to the overall database design.</li> <li>c) Assess the relational databases for correct table creation, accurate use of primary and foreign keys, and the effectiveness of queries in retrieving related data. Review the database designs for clarity, organisation, and proper relationships to ensure efficient data management.</li> </ul>

## Senior Six Term 3

### Topic 10: Artificial Intelligence and Related Emerging Technologies

**Duration: 30 Periods**

**Competency:** The learner uses Artificial Intelligence to create content and provide solutions to societal challenges.

<b>Learning Outcomes</b> The learner should be able to:	<b>Suggested Teaching and Learning Activities</b>	<b>Sample Assessment Strategies</b>
a) evaluate the application of AI in the real world. (u, s, v, gs)	a) Learners investigate and present real-life AI applications, focusing on areas such as machine learning, natural language processing (NLP), and computer vision. b) Learners interact with AI-driven tools, such as chatbots and facial recognition applications and identify the underlying AI technologies. c) Organise a debate on the ethical implications of AI in specific contexts, such as surveillance or hiring algorithms. d) Learners identify the AI concepts applied, benefits achieved, and challenges encountered in case studies of organisations implementing AI technologies. e) Learners roleplay as AI developers, users, or critics. They discuss a scenario (e.g., deploying AI in healthcare) and evaluate its applications, benefits, limitations, and ethical considerations. f) Learners propose hypothetical AI applications addressing specific problems, like language barriers or object detection. They should explain the AI concepts involved, anticipated benefits, and potential ethical challenges. g) Learners engage with AI simulation tools such as TensorFlow Playground or AI-based games to visualise machine learning concepts and demonstrate	a) Assess learners' understanding of AI concepts, ethical implications, and real-world applications through discussions and activities, noting their ability to analyse AI technologies such as machine learning, NLP, and computer vision. b) Engage learners in group discussions, focusing on their ability to evaluate AI's ethical considerations, potential risks, and improvements, ensuring they can critically assess AI's impact in various sectors. c) Evaluate learners' group projects, such as AI application proposals and ethical guidelines, for clarity, feasibility, and ethical awareness, ensuring their solutions reflect a strong grasp of AI's benefits and challenges.

	<p>how parameter adjustments impact outcomes.</p> <p>h) Learners test the limitations of AI applications, like image recognition software or language translation tools. They document instances where the AI fails or produces errors and propose potential improvements to cultivate a critical approach to AI technologies.</p> <p>i) Learners draft ethical guidelines for AI use in a chosen field, such as education, healthcare, or business. They discuss potential risks and propose responsible solutions.</p>	
<p>b) use generative AI for content creation. (k, u, s)</p>	<p>a) Individually, learners interact with generative AI platforms (e.g., ChatGPT, DALL-E, Midjourney) to explore their capabilities. They experiment with generating text, images, or other content and document their observations about the quality and limitations of the outputs.</p> <p>b) Learners create and test different prompts for generating specific outputs (e.g., a story, a technical explanation, or a unique image). They compare results to identify what makes prompts effective or ineffective.</p> <p>c) Learners research and present real-world cases of generative AI, such as in marketing, education, or healthcare. They evaluate the benefits, limitations, and ethical implications of these applications.</p> <p>d) Learners identify a real world problem (e.g., automating report writing or generating personalised learning materials) and develop a solution using generative AI. They test and refine prompts to optimise outputs.</p> <p>e) Learners intentionally challenge a generative AI system by providing ambiguous, misleading, or complex prompts. They analyse the system's</p>	<p>a) Observe learners' ability to experiment with generative AI tools, assess output quality, and identify effective prompt strategies.</p> <p>b) Engage learners in discussions about real world AI applications, ethical considerations, and prompt strategies, focusing on their understanding of AI's limitations and responsible use.</p> <p>c) Evaluate the final generative AI output to ensure that learners document their prompt strategies, improve their work through revisions, and deliver high-quality results. Evaluate the effectiveness of their approach in creating varied content. <i>(Recognise the efforts of learners with disabilities for inclusion purposes)</i></p>

	<p>failures or limitations and discuss how these might impact its practical use.</p> <p>f) Learners debate ethical concerns around generative AI, such as copyright issues, misinformation, and biases. They propose guidelines for the responsible use of generative AI in professional and personal contexts.</p> <p>g) Learners analyse a case study of an organisation or project that innovatively used generative AI. They identify the strategies used for prompt creation, evaluate the outcomes, and discuss what could be improved.</p> <p>h) In groups, learners create a project (e.g., an AI-generated magazine or a marketing campaign) using generative AI. They document their workflow, including prompt strategies and iterations, and present their final output.</p> <p>i) Learners participate in a challenge where they are given a specific output goal (e.g., generating a high-quality image or a cohesive story). They compete to create the most effective prompt and explain their strategies.</p> <p>j) Learners discuss the strengths and weaknesses of generative AI output they've created. They reflect on what worked well, what didn't, and how their prompt strategies evolved during the process.</p>	
<p>c) analyse the impact of other emerging technologies. (k, u, s, gs)</p>	<p>a) Learners research on one of the emerging technologies, such as blockchain, IoT, and quantum computing, AR/VR, and prepare a detailed report on how it currently impacts or could impact on a specific industry (e.g., healthcare, finance, education).</p> <p>b) Learners select an industry (e.g., agriculture, entertainment, retail) and analyse how emerging technologies like IoT or AR/VR technologies could transform it.</p>	<p>a) Observe learners' ability to research and analyse emerging technologies, their impact on industries, and how they propose solutions using these technologies.</p> <p>b) Engage learners in discussions on the ethical implications of emerging technologies,</p>

	<ul style="list-style-type: none"> <li>c) Learners participate in a debate on the ethical implications of emerging technologies.</li> <li>d) Individually or in pairs, learners conduct a SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) for one of the emerging technologies and present a report.</li> <li>e) Learners analyse case studies of companies or organisations implementing emerging technologies (e.g., Amazon using IoT for logistics or healthcare using AR/VR for patient care). They evaluate the success or failure of these implementations and present their analysis to the class.</li> <li>f) Learners identify a real world problem, propose the most appropriate emerging technology and propose a solution. They present their solutions and justify their technological choices.</li> <li>g) Learners simulate implementing an emerging technology in a chosen industry (e.g., implementing blockchain in finance for secure transactions). They role-play different stakeholders (e.g., business owners, consumers, regulators) and discuss the benefits and challenges of adoption.</li> </ul>	<p>industry transformations, and challenges involved.</p> <ul style="list-style-type: none"> <li>c) Assess the quality and depth of learners' reports, SWOT analysis, and case study presentations, ensuring that they provide clear justifications, key benefits and challenges, and propose solutions or evaluate technologies.</li> </ul>
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## 3.0 ASSESSMENT

### 3.1 Assessing Subsidiary ICT

The adapted curriculum sets new expectations for learning, shifting from Objectives to Learning Outcomes that focus mainly on the application of knowledge and deeper learning that leads to the acquisition of skills. These Learning Outcomes require a different approach to assessment. The Learning Outcomes in the syllabi are set out in terms of Knowledge, Understanding, Skills, Values, and Attitudes. We refer to this by the letters k, u, s, v & a.

It is not possible to assess attitudes in the same way as knowledge, understanding, and skills. This is because they are more personal and are variable and are long-term aspirations. This does not mean that values and attitudes are not important or cannot be assessed. They, too, can be assessed, but not easily through tests and examinations. Values and attitudes can be assessed over a period through observing and having interactions with the learner.

This section focuses on knowledge, understanding, and skills, each with its own implications for learning and assessment.

To assess knowledge and its application, understanding and skills, we need to look for different things. Knowledge can be assessed to some extent through written tests, but the assessment of skills, application of what is learnt, and deeper understanding requires different approaches. Because of this, the role of the teacher in assessment becomes much more important.

### 3.2 Formative Assessment

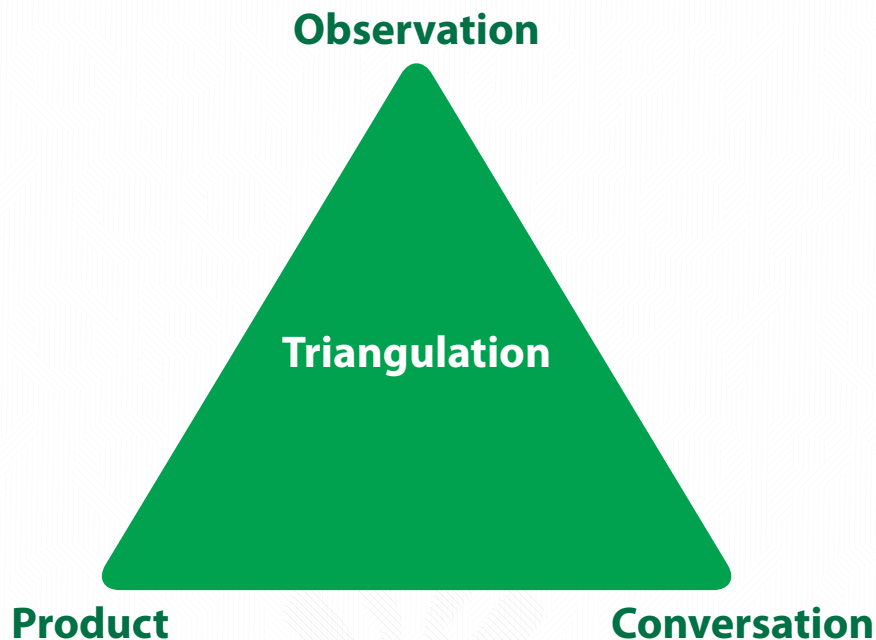
In this aligned curriculum, the teacher's assessment role is not only to write tests for learners but also to make professional judgement about learners' learning during the normal teaching and learning process. The professional judgement is about how far the learner achieves the Learning Outcomes set out in this syllabus. To make these judgements, the teacher needs to look at how well the learners perform in each Learning Outcome.

The formative assessment opportunities occur in three forms. They can be done through:

- i) **Observation** – watching learners working (good for assessing skills, values and attitudes)
- ii) **Conversation** – asking questions and talking to learners (good for assessing knowledge and understanding)
- iii) **Product** – appraising the learner's work (document, publication, database, presentation, workbook with manipulated data and visualisations, writing, report, translation, calculation, presentation, map, diagram, model, drawing, painting etc). In this context, a product is seen as something physical, electronic and permanent that the teacher can keep and look at rather than something that the learner says.

When all three are used, the information from anyone can be checked against the other two forms of assessment opportunity (e.g. evidence from “observation” can be checked against evidence from “conversation” and “product”).

This is often referred to as “**triangulation**”



### 3.3 Assessing Generic Skills

Generic Skills have been built into the syllabuses and are part of the Learning Outcomes. Therefore, it is not necessary to assess them separately. The increasingly complex context of the subject content provides progression in the Generic Skills, and so they are assessed as part of the subject Learning Outcomes. Assessing generic skills is done with the help of **an observation checklist and scoring rubric**.

### 3.4 Assessing Values/Attitudes

It is not possible to assess values and attitudes in the same way as knowledge, understanding and skills because they are more personal and variable and are long-term aspirations. This does not mean that attitudes are not important. It means we must value things we cannot easily assess through tests and examinations. However, observation and interaction can evaluate values and attitudes over a long period.

### 3.5 Assessment of Project-based learning

Project-based learning is a teaching method in which learners or participants gain knowledge and skills by spending an extended period investigating and responding to an authentic challenge. The task must have a driving question and involve sustained inquiry.

Project-based learning is assessed using a rubric and an observation checklist.

### 3.6 Examinations

There will be only one school-based summative assessment at the end of the year.

Examinations or tests will no longer be set at the beginning and end of every term. Instead, there will be a summation of ongoing teacher assessments made in the context of learning through end-of-topic scenario-based tasks (Activities of Integration). The learners will also be subjected to the end-of-cycle assessment for certification.

### 3.7 Record keeping

Accurate and comprehensive record-keeping is crucial to track learners' progress and achievements in competency-based learning. Therefore, the teacher and school **must record learners' achievements accurately.**

Various assessment tools and strategies are employed to capture learners' demonstration of abilities and achievements, including observation checklists, rubrics, and scoring grids. These tools provide a holistic picture of learners' strengths, weaknesses, and areas for improvement. The data and evidence collected from these assessments are correctly recorded and maintained in learners' files, portfolios, and anecdotal notes.

### 3.8 Learners with Special Needs

Instruction of learners with visual impairment may require keyboard shortcuts and the use of screen reader software. Group activities should be inclusive so that all learners benefit, including learners with disabilities. Topics that have lots of graphics may not support learning for learners with Visual impairments. For learners with hearing impairment, sign language application is a must to ensure a better grasp of content and participation.

All learners with disabilities require an additional 45 minutes of standard time during assessments. Accommodations and adaptations should be provided where necessary to ensure equity and inclusion for all.

## Glossary of Key Terms

Term	Definition
<b>Competency curriculum</b>	A curriculum where learners develop the ability to apply their learning in various situations confidently.
<b>Differentiation</b>	Designing or adapting learning experiences to meet individual learner's needs, strengths, preferences, and abilities.
<b>Formative assessment</b>	It is an ongoing process of judging a learner's performance by interpreting their responses to tasks to gauge progress and inform future learning steps.
<b>Generic skills</b>	Skills that are applicable across all subjects and enhance learning in those subjects. These skills also prepare young people for work and life.
<b>Inclusion</b>	An approach to planning learning experiences that ensures every student feels confident, respected, safe, and equipped to learn to their full potential.
<b>Learning outcome</b>	A statement specifying what a learner should know, understand, or be able to do within a specific aspect of a subject.
<b>Process skill</b>	A capability acquired through a programme of study in a particular area enables a learner to apply the knowledge and understanding of that area.
<b>Sample assessment activity</b>	An activity that allows learners to demonstrate the extent to which they have achieved the Learning Outcomes. These activities are typically part of the regular teaching and learning process rather than standalone tests at the end of a topic.
<b>Suggested learning activity</b>	A component of the regular teaching and learning process designed to facilitate formative assessment.



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