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Republic of Zambia

Ministry of Education

INFORMATION AND COMMUNICATION TECHNOLOGY

SECONDARY EDUCATION ORDINARY LEVEL
FORM 1 – 4

DEVELOPED BY THE CURRICULUM DEVELOPMENT CENTRE
LUSAKA
2024

Republic of Zambia

MINISTRY OF EDUCATION

INFORMATION AND COMMUNICATION TECHNOLOGY SYLLABUS

SECONDARY EDUCATION ORDINARY LEVEL

FORM 1-4

Developed by The Curriculum Development Centre

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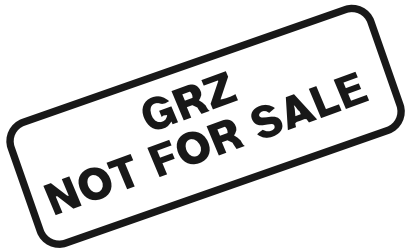

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VISION

Quality, life long education for all which is accessible, inclusive and relevant to individual, national and global needs value systems.

PREFACE

It is with great pride and a deep sense of commitment to the future of our nation that I introduce the Information and Communication Technology (ICT) curriculum for our secondary schools. As the Minister of Education, I am acutely aware of the transformative power of technology in today's world. The integration of ICT into our education system is not merely a step forward; it is a leap towards preparing our learners for a future where digital literacy is paramount.

This ICT curriculum has been developed with the objective of equipping every learner with essential skills and knowledge in information and communication technologies. In an era where technology permeates every aspect of our lives, it is crucial that our learners are not only consumers of technology but also informed and proficient users. The curriculum is designed to foster critical thinking, creativity, and problem-solving skills, ensuring that our learners are well-prepared to meet the challenges and opportunities of the digital age.
The compulsory nature of this subject underscores our commitment to ensuring that no learner is left behind in the technological revolution. Every learner, regardless of background or future aspirations, will benefit from a strong foundation in ICT. This curriculum covers a broad range of topics including digital literacy, internet safety, programming, and the ethical use of technology. It is structured to be engaging, relevant, and aligned with the latest advancements in the field.

Our dedicated educators have been provided with comprehensive training and resources to deliver this curriculum effectively. The teaching methods employed are dynamic and interactive, encouraging learners to actively participate and engage with the material. We believe that through this approach, learners will not only gain theoretical knowledge but also practical skills that are applicable in real-world scenarios.

I am confident that this ICT curriculum will play a pivotal role in shaping the future of our learners and our nation. I encourage learners to embrace this subject with enthusiasm and dedication, and I urge parents and guardians to support their children's journey in the vital field of ICT.

Yours sincerely,

Joel Kamoko (Mr.)
Permanent Secretary – Educational Services
MINISTRY OF EDUCATION

ACKNOWLEDGEMENT

The development and implementation of the Information and Communication Technology (ICT) curriculum for secondary schools is a testament to the collaborative efforts of many dedicated individuals and organizations. As the Director for Curriculum Development, I am honored to acknowledge and express my deepest gratitude to everyone who has contributed to this significant initiative.

First and foremost, I extend my heartfelt thanks to the Minister of Education for their visionary leadership and unwavering support. Their commitment to advancing our education system and ensuring that our learners are prepared for the digital future has been the driving force behind this project.

I would like to express my sincere appreciation to the members of the Curriculum Development Committee. Their expertise, dedication, and hard work have been instrumental in crafting a curriculum that is both comprehensive and forward-thinking. Their ability to blend theoretical knowledge with practical application has ensured that this curriculum will be both engaging and effective for our learners.

Special thanks are due to our team of educators and ICT specialists who have provided invaluable insights and feedback throughout the development process. Their practical experience and innovative ideas have greatly enriched the curriculum, ensuring that it meets the needs of our diverse learner population.

I am also grateful to our partner institutions and organizations for their collaboration and support. Their contributions have been essential in providing the resources and technology needed to deliver this curriculum effectively in our schools.

Furthermore, I would like to acknowledge the valuable feedback and support from pilot schools and their communities. Their input has been crucial in refining the curriculum and ensuring its relevance and effectiveness.

Finally, I extend my gratitude to the learners, parents, and guardians for their enthusiasm and support. It is your commitment to education and your trust in our system that inspires us to continually strive for excellence.

This ICT curriculum represents a significant step forward in preparing our learners for the future. Together, we are building a foundation of digital literacy and technological proficiency that will empower our learners to succeed in an increasingly digital world.

Thank you all for your invaluable contributions and support.

Sincerely,

Charles Ndakala (Dr.)
Director – Directorate of Curriculum Development
MINISTRY OF EDUCATION

INTRODUCTION

The Information and Communication Technology (ICT) curriculum for secondary schools has been developed to provide learners with essential digital literacy skills and knowledge. Recognizing the integral role of technology in modern society, this compulsory subject aims to equip all learners with the ability to use ICT effectively and responsibly. The curriculum is designed to foster critical thinking, creativity, and problem-solving skills, preparing learners to navigate and thrive in a technology-driven world. Topics on entrepreneurship and financial education ensures that learners develop financial and entrepreneurial skills while applying ICT.

Structure of the Syllabus

The syllabus is structured to cover a wide range of ICT topics, ensuring a comprehensive understanding of the field. Key modules include:

Digital Literacy Skills: Basics of computer operation, internet use, and software applications.

- Programming: Introduction to coding languages and developing problem-solving skills through programming.
- Data Management: Understanding data collection, storage, and analysis.
- Cybersecurity: Basics of protecting information and systems from digital threats.
- Networks and Communication: Principles of computer networks, internet, and communication technologies.
- Ethical and Societal Implications: Examining the impact of technology on society and discussing ethical issues.

Teaching Methodology

- The teaching methodology for the ICT curriculum focuses on active learning and practical application. Key approaches include:
- Interactive Lessons: Engaging learners through discussions, demonstrations, and multimedia resources.
- Hands-on Projects: Providing opportunities for learners to apply concepts through practical projects and exercises.
- Collaborative Learning: Encouraging group work and peer-to-peer learning to enhance teamwork and communication skills.
- Blended Learning: Integrating online resources and tools to complement traditional classroom instruction.
- Problem-Based Learning: Using real-world problems to develop critical thinking and problem-solving skills.

Time Allocation

The ICT curriculum is designed to be flexible yet comprehensive, with recommended time allocations as follows:

- Weekly Classes: 3 hours 20 minutes has been allocated to this subject (5 periods in week 40minutes each)
- Practical Sessions: Additional laboratory or computer lab sessions to reinforce hands-on learning.
- Project Work: Dedicated time for learners to work on individual and group projects throughout the term.

Assessment

Assessment shall be done by the Examinations Council of Zambia (ECZ). The ECZ may develop assessment syllabi based on this syllabus. Assessment in the ICT curriculum is designed to evaluate both theoretical understanding and practical skills. Assessment methods include:

Project Assessments:

- Evaluate learners based on the completion and quality of their programming projects.
- Consider creativity, functionality, and adherence to best practices.
- Assessment of individual and group projects based on creativity, functionality, and presentation.

Problem-Solving Exercises:

- Assess learners' ability to apply computational thinking and problem-solving skills to new challenges.
- Include open-ended questions that require critical thinking.
- Regular quizzes, assignments, and class participation.

Class Participation and Collaboration:

- Assess engagement in class discussions, collaboration on coding exercises, and willingness to share knowledge with peers.

Portfolio Assessment:

- Have learners maintain a portfolio showcasing their coding projects, solutions, and reflections on their learning journey.

Final Project Presentation:

- Culminate the course with a final project presentation where learners demonstrate their skills, explain their project choices, and answer questions.

Written Examinations:

- Assess theoretical knowledge through written examinations covering topics such as Productivity software, basic networking concepts, and operating systems, basics of cybersecurity, algorithms, data structures, and ICT concepts.
- Hands-on tests and exams to evaluate problem-solving skills.
- Final Examination: A comprehensive written final examination covering all modules of the syllabus.

Alternative to Practical Examinations

For schools that may not have adequate computers for all learners, alternative assessment methods shall be employed to ensure that practical skills are still evaluated effectively. These alternatives include:

Simulation Software:

Utilize simulation software that mimics real-world computing environments, allowing learners to practice coding, data management, and other ICT skills on fewer computers or even on personal devices outside of school.

Paper-Based Practical Tasks:

Design paper-based practical tasks where learners outline step-by-step processes for solving problems using ICT tools. These tasks can include writing code snippets, designing network diagrams, or planning data management strategies.

Project-Based Assessments:

Assign project-based assessments where learners work on theoretical projects that require them to plan and design ICT solutions. These projects can be assessed based on their understanding of concepts, problem-solving approaches, and creativity.

Oral Examinations:

Conduct oral examinations where learners explain how they would perform certain practical tasks. This can include describing coding logic, explaining how to secure a network, or detailing steps for data analysis.

Peer Reviews and Group Work:

Encourage peer reviews and group work to leverage collaborative learning. Learners can present their work to classmates, who then provide feedback based on set criteria. This method promotes understanding through teaching and discussion.

Use of ICT Labs in Shifts:

If a limited number of computers are available, organize learners into shifts to ensure each learner gets adequate hands-on time. This can be supplemented with guided instruction during non-computer times.

Portfolio Assessments:

Have learners compile a portfolio of their work throughout the course. This portfolio can include written assignments, project plans, and reflections on their learning process. It provides a comprehensive view of their understanding and progress.

By implementing these alternatives, schools can ensure that all learners are assessed fairly and comprehensively, even in environments with limited resources. These methods aim to maintain the integrity and effectiveness of the ICT curriculum while providing equitable opportunities for all learners.

Rationale

Learning Information and Communication Technology (ICT) at secondary school provides learners with a range of valuable skills and knowledge that are essential in today's digital world. The following are some of the key rationales why learners should learn ICT at this level:

Digital Literacy: ICT education equips learners with the fundamental skills necessary to navigate and thrive in an increasingly digital society. This includes understanding how to use computers, the internet, and various software applications effectively and responsibly.

Preparation for the Workforce: In virtually every field, digital skills are becoming indispensable. Whether learners pursue careers in technology, business, healthcare, or the arts, proficiency in ICT is often a prerequisite. Learning ICT in secondary school provides a solid foundation for future employment opportunities.

Enhanced Learning Experience: ICT can be integrated across various subjects to enhance teaching and learning experiences. From conducting research online to creating multimedia presentations, ICT offers learners new ways to engage with and understand academic content.

Critical Thinking and Problem-Solving: ICT education encourages learners to think critically and solve problems creatively. When faced with technical challenges or tasked with developing digital solutions, learners learn to analyze problems, identify relevant information, and devise effective strategies to address them.

Communication and Collaboration: ICT fosters communication and collaboration skills, which are essential for success both in school and beyond. Through online platforms, learners can collaborate with peers on projects, communicate with teachers outside of class, and engage with experts and resources from around the world.

Preparation for Further Education: Many tertiary education institutions incorporate ICT into their programs, and proficiency in these skills can be advantageous for learners pursuing higher education. Whether learners are conducting research, participating in online courses, or collaborating with peers, ICT proficiency can facilitate their academic success.

Empowerment and Participation in Society: In today's interconnected world, digital literacy is essential for civic engagement and participation. ICT education empowers learners to become active and informed citizens who can critically evaluate information, engage in online discourse, and leverage technology to advocate for causes they believe in.

Adaptability and Lifelong Learning: Technology is constantly evolving, and the skills learners learn in ICT classes equip them with the adaptability and resilience needed to thrive in a rapidly changing world. By fostering a mindset of lifelong learning and adaptation, ICT education prepares learners to succeed in whatever future endeavours they pursue.

In summary, learning ICT at secondary school is essential for equipping learners with the skills, knowledge, and mindset needed to thrive in a digital world, both academically and professionally.

The following is the outline of ICT syllabuses at secondary school level.

SUMMARY OF KEY COMPETENCES

By the end of the 4-year secondary course the learners are expected to have acquired the following key competences in ICT:

Competencies	Descriptors
Analytical	Ability to break down complex ICT problems into smaller components, interpret data, and make informed decisions based on evidence.
Communication	Use ICT tools and platforms to effectively share information, ideas, and solutions through various digital mediums, ensuring clarity and coherence.
Collaboration	Work effectively in teams using digital collaboration tools, contributing to shared goals while respecting diverse perspectives.
Creativity and Innovation	Develop innovative solutions to real-world problems by leveraging ICT tools, and creatively apply technology to design new products or services.
Critical Thinking	Evaluate information critically from multiple sources, analyse technological solutions, and assess their impact on society and personal life.
Digital Literacy	Demonstrate proficiency in using digital devices, software, and the internet responsibly, securely, and ethically for academic and professional purposes.
Entrepreneurship	Use ICT to identify business opportunities, create digital business models, and manage online platforms for entrepreneurial ventures.
Environment Sustainability	Utilize ICT tools to promote sustainable practices, reduce electronic waste, and advocate for environmentally responsible technology usage.
Financial Education	Apply ICT in managing personal and business finances, including budgeting, digital banking, and understanding financial tools and risks in online transactions.
Problem Solving	Identify challenges in ICT systems or applications and develop practical, efficient, and innovative solutions using technology.
Citizenship	Demonstrate responsible use of technology as a digital citizen, adhering to ethical standards, online etiquette, and respecting cultural diversity.
Emotional Intelligence	Use ICT to manage emotions and relationships effectively, including tools for self-awareness, empathy, and constructive communication in digital environments.

These descriptors ensure that learners not only gain technical knowledge but also develop skills critical for personal, societal, and professional growth in an ICT-driven world.

FORM 1

TOPIC	SUB-TOPIC	SPECIFIC COMPETENCES	LEARNING ACTIVITIES	EXPECTED STANDARD
1.1 INTRODUCTION TO ICT	**1.1.1. History of Computer**	1.1.1.1 Demonstrate understanding of evolution of Computers	• Demonstrating knowledge of the earliest computational tools and their functionality. • Analysing the development of computers and the impact of microprocessors	Understanding of evolution of Computers Correctly Demonstrated
	1.1.2. Basic Concepts of ICT	1.1.2.1 Identify various ICT tools and their purposes.	• Defining ICT • Distinguishing different types of ICT Tools (hardware and software tools). • Explaining the essential hardware and software components of a computer system. • Match ICT tools to their respective functions in a worksheet. • Creating a chart categorizing ICT tools into hardware and software.	ICT tools and their purposes identified appropriately.
		1.1.2.2 Apply ICT concepts to everyday activities	• Demonstrate the use of basic tools (e.g., email). • Visit an ICT store or website to explore modern tools. • Role-play scenarios using different ICT tools. • Discussing real-life examples of ICT use in group activities. • Creating a poster showing ICT applications. • Watching videos demonstrating ICT in various industries.	ICT concepts to everyday activities applied correctly.

TOPIC	SUB-TOPIC	SPECIFIC COMPETENCES	LEARNING ACTIVITIES	EXPECTED STANDARD
			• Conducting a class survey on ICT tools used at home, school, business... • Writing a short essay about the impact of ICT on education.	
1.2 COMPONENTS OF COMPUTER SYSTEMS	**1.2.1 Hardware**	**1.2.1.1** Identify different computer hardware	• Identifying hardware components of a computer **(Input and Output devices)** • Assembling a computer or virtual simulations of its components. • Labelling hardware component, (*CPU, RAM, ROM, and input/output devices…)*	Different computer hardware identified correctly.
		1.2.1.2 Demonstrate understanding of computer hardware functions	• Discussing the purpose and function of each component. • **Scavenger hunting** where learners search for hardware components (or images) placed around the room. • Cleaning computer hardware *(using industrial blower)* • Using visual aids to identify and label hardware components. • Performing a hands-on activity where learners open a computer and identify internal components. • Role playing on different components of computer hardware such as CPU, RAM… • Completing a quiz on identifying different hardware components • Exploring device speciations	Understanding of computer hardware functions demonstrated correctly

TOPIC	SUB-TOPIC	SPECIFIC COMPETENCES	LEARNING ACTIVITIES	EXPECTED STANDARD
	1.2.2 Software	1.2.2.1 Classify different types of computer software	• Defining computer software • Discussing different types of computer software *(System, application, utility)*.	Different types of computer software classified accordingly
		1.2.2.2 Use different types of application software	• Creating a word document and format it. • Entering data into a spreadsheet and apply basic formatting. • Creating a table to track daily activities in a spreadsheet. • Using pre-defined functions (sum, average) • Exploring templets available in presentation software for specific tasks. • Creating publications • Sharing different documents formats using emails or cloud platforms. • Exploring various OS speciations *(windows, mobile OS...)*	Different types of application software used appropriately
1.3 FILE MANAGEMENT	**1.3.1 Basics of File Management**	1.3.1.1 Use different file naming conventions.	• Creating Folders and Subfolders**:** Creating a main folder and organize files into subfolders based on topics, subjects, or file types. ***(****Create a folder named "Schoolwork" with subfolders like "Math," "Science," and "ICT.")* • Naming Files and Folders: Practicing using descriptive and consistent names for files and folders. *(Name a document*	File naming conventions used appropriately.

TOPIC	SUB-TOPIC	SPECIFIC COMPETENCES	LEARNING ACTIVITIES	EXPECTED STANDARD
			"ICT_Class_Notes_2025" instead of "Document1.")	
		1.3.1.2 Demonstrate safe file handling practices	• Copying, Moving, and Deleting Files: **(***Demonstrate how to copy files to a different location, move files into different locations both internally and externally, and delete unnecessary files while avoiding accidental deletion of important ones)* • File Sorting and Searching: sorting files by name, date, or size. *(Using different search options to locate files, folders…)*	Safe file handling practices demonstrated correctly.
		1.3.1.3 Organize and manage files and folders.	• Backing up: back up their files using different storage devices *(flash disk…)* or cloud storage services *(Google Drive…).* • Discussing the importance of saving files regularly to prevent data loss. • file restoration: restoring deleted files from the recycle bin	Files and folders organized and managed accordingly
1.4 BASICS OF INTERNET AND ONLINE TOOLS	**1.4.1 Introduction to the Internet and online tools**	1.4.1.1 Demonstrate understanding of how internet works	• Defining the Internet • Discussing the uses of the internet in daily lives • Identifying and using networking devices *(modem, router, Wi-Fi …)*	Understanding how internet works demonstrated accordingly
		1.4.1.2 Use online tools to search and navigate the internet	• Defining web browser and search engine • Using a web browser to access educational websites	Online tools to search and navigate the internet used correctly

TOPIC	SUB-TOPIC	SPECIFIC COMPETENCES	LEARNING ACTIVITIES	EXPECTED STANDARD
			• Navigating websites for academic purposes. • Using online learning tools *(Google Classroom, Zoom ...)*	
		1.4.1.3 Apply basic online safety practices	• Discussing the importance of using strong passwords and browsing safely. • Demonstrating basic online safety practices	online safety practices correctly applied
1.5. DIGITAL LITERACY	**1.5.1 Introduction to Digital Literacy**	1.5.1.1 Use different types of digital devices	• Defining Digital literacy • Interacting with various digital devices like computers, tablets, and smartphones • Discussing digital devices' uses in daily life. • Building familiarity with digital devices and their role in communication and productivity: *(scavenger hunt searching for specific, age-appropriate information online, such as facts about their favourite animals or school subjects.)* • Creating a digital portfolio showcasing their learning tools. • Discussing on how digital skills are used in careers, education, and daily activities. Learners can brainstorm examples like using computers for work, apps for entertainment, or digital platforms for learning.	Different types of digital devices used appropriately

TOPIC	SUB-TOPIC	SPECIFIC COMPETENCES	LEARNING ACTIVITIES	EXPECTED STANDARD
			• Creating virtual spaces for communication, such as google meet, zoom etc • Simulating email exchange where learners practice sending, replying to, emails. via scenarios like writing to a teacher or sharing ideas with a friend	
		1.5.1.2 Practice ethical use of technology	• Discussing the importance of online safety and responsible behaviour. • Designing posters on safe online practices, such as protecting passwords, identifying scams, and avoiding inappropriate content. • Exploring responsible and ethical use of technology.	Ethical use of technology practiced
1.6 ICT IN BUSINESS	**1.6.1 Introduction to ICT in Business**	1.6.1.1 Appreciate ICT tools in Business	• Identifying different ICT tools in businesses and entrepreneurship • Discussing the role of ICT in managing business finances • Watching videos on digital finance applications • Interviewing local entrepreneurs on ICT use in business • Presenting findings on ICT's impact on financial management • Discussing how ICT can be used to safeguard Businesses • Role playing on how ICT can positively impact business operations	ICT tools in business appreciated

FORM 2

TOPIC	SUB-TOPIC	SPECIFIC COMPETENCES	LEARNING ACTIVITIES	EXPECTED STANDARD
2.1 FILE MANAGEMENT	**2.1.1 File Compression and Encryption**	2.1.1.1 Compress files and folders	• Defining file compression • Identifying file compression tools *(WinRAR, 7-zip, power ISO…)* • Demonstrating file Compression and extraction • Practicing transferring files via email or cloud storage.	Files and folders compressed efficiently
		2.1.1.2 Encrypt files and folders.	• Defining file encryption • Identifying file Encryption tools *(BitLocker, 7-zip, power ISO…)* • Discussing and demonstrate file encryption methods. • Transferring encrypted files via email or cloud storage.	Files and folders encrypted efficiently
2.2 PRODUCTIVITY TOOLS	**2.2.1 Word Processing**	2.2.1.1 Create and customize word documents	• Creating a document with customized margins, columns, and page orientation. • Add headers, footers, and page numbers to the document. • Using tables to organize data effectively in the document. • Inserting multimedia files (images, word Art, tables, charts…) • Creating hyperlinks • Mail-merging • Importing and exporting data and styles	Word document created and customized correctly

TOPIC	SUB-TOPIC	SPECIFIC COMPETENCES	LEARNING ACTIVITIES	EXPECTED STANDARD
	2.2.2 Spreadsheets	2.2.2.1 Manage data using spreadsheets	• Using the MIN, MAX, COUNT, COUNTA, SUM-IF functions. • Creating a budget using spreadsheet. • Inserting data and Practicing sorting. • Add borders, colours, and bold text to format the spreadsheet for clarity. • Hiding and Un-Hiding rows/ columns	Data managed using spreadsheets
	2.2.3 Presentations	2.2.3.1 Create presentations	• Creating a presentation • Organizing and Editing slides • Using different animations and transitions. • Inserting multi-media elements (pictures, animations, videos, charts…)	Presentations created appropriately.
	2.2.4 Publishing	2.2.4.1 Design publications	• Designing various publications *(flier, poster, calendars, business cards, magazines ...).* • Inserting images and captions onto the publication. • Using different shape tools to enhance the designs *(lines, text box ...)*	Publications designed correctly
2.3 DIGITAL LITERACY	**2.3.1 Email and Instant Messaging**	2.3.1.1 Create and manage email accounts	• Identifying different types of mailing services *(Gmail, Yahoo, Outlook ...).*	Email accounts appropriately created and managed correctly.

TOPIC	SUB-TOPIC	SPECIFIC COMPETENCES	LEARNING ACTIVITIES	EXPECTED STANDARD
			• Discussing components of an email address *(username, domain name, ...).* • Creating an email account and Practicing sending emails *(Gmail, Yahoo, Outlook ...).* • Exploring interface of an email *(inbox, draft, compose, sent, outbox ...).* • Sending an email with attachments (files, images). • Practicing using instant messaging apps for academic communication *(WhatsApp, messenger, telegram ...).* • Organizing emails into folders for easy retrieval. • Discussing email etiquette and respond to emails *(opening emails / attachments from unknown sources, uppercasing, inappropriate language ...).*	
2.4 ICT IN BUSINESS	**2.4.1 Electronic Business Tools**	2.4.1.1 Use electronic business tools.	• Exploring trends in finance *(barter system, cash system, online bank transfer, paperless transactions ...).* • Exploring digital business tools and applications *(mobile money services, online banking transactions, online checking of*	Electronic business tools used appropriately.

TOPIC	SUB-TOPIC	SPECIFIC COMPETENCES	LEARNING ACTIVITIES	EXPECTED STANDARD
			ECZ results, Excel, Google Sheets ...). • Simulating online transactions *(online banking, mobile money transactions ...).* • Demonstrating how to budget using financial tools	

FORM 3

TOPIC	SUB-TOPIC	SPECIFIC COMPETENCES	LEARNING ACTIVITIES	EXPECTED STANDARD
3.1 WEBSITE DESIGN	**3.1.1 Website Design Using Templates**	3.1.1.1 Design web pages using templates	• Defining website designing. • Identifying web designing tools *(canva, wordpress, publisher, google sites ...)*. • Organizing content using templates • Customizing the template suitably (images, videos, audio). • Publishing the website	Web pages designed using templates accordingly.
3.2 CLOUD COMPUTING	**3.2.1 Introduction to Cloud Computing**	3.2.1.1 Use cloud computing	• Defining cloud computing • Identifying various types of cloud computing services *(Google Drive, OneDrive Dropbox, iCloud ...)*. • Upload and organize files on a cloud platform *(Google Drive, OneDrive, Dropbox, iCloud ...)*. • Exploring collaborative features of online Docs. • Sharing a file with a peer and practice collaborative editing. • Investigating the advantages and disadvantages of cloud storage over physical storage devices. • Using cloud storage for storing and sharing photos, documents, and videos.	Learners can effectively use cloud platforms for storage and collaboration.

TOPIC	SUB-TOPIC	SPECIFIC COMPETENCES	LEARNING ACTIVITIES	EXPECTED STANDARD
3.3 PRODUCTIVITY TOOLS	**3.3.1 Intermediate Spreadsheets**	3.3.1.1 Use functions for data analysis	• Using VLOOKUP, INDEX, and MATCH , CONCATENATE . to retrieve data from a separate sheet. • Creating pivot tables to analyse large datasets. • Presenting data in various formats *(charts, scatter plots and bubble charts)* • Using conditional formatting to highlight data based on complex conditions. • Perform trend analysis using different data visualization techniques. • Linking and locking sheets. • Transposing of cells	Functions for data analysis used correctly.
3.4 CYBERSECURITY	**3.4.1 Introduction to cybersecurity**	3.4.1.1 Demonstrate understanding of cybersecurity	• Defining cybersecurity • Discussing types of cybersecurity threats *(phishing, pharming, identity theft, spamming…)*	Understanding of cybersecurity demonstrated accordingly
		3.4.1.2 Apply best cybersecurity practices	• Exploring various approaches of preventing cyber threats • Using antivirus software to scan a computer for malware. • Creating strong passwords using password managers. • Practicing identifying phishing emails and suspicious links.	Best cybersecurity practices applied accordingly

FORM 4

TOPIC	SUB-TOPIC	SPECIFIC COMPETENCES	LEARNING ACTIVITIES	EXPECTED STANDARD
4.1 COMPUTER NETWORKING	4.1.1 Introduction to Computer Networks	4.1.1.1 Demonstrate understanding of computer networks	• Discussing computer networks • Investigating different types of networks (*WAN, LAN, PAN...)* • Exploring different types of connections *(wired, wireless, optic…)* • Connecting different networking devices *(hot-spotting, Bluetooth/USB tethering, screen casting…)*	Learners demonstrate understanding of key network protocols.
4.2 CLOUD COMPUTING	4.2.1 Cloud Computing Services	4.2.1.1. Analyse cloud-based systems	• Comparing cloud services (e.g., Google Drive vs. OneDrive). • Creating a personal account on a cloud platform and upload files. • Discussing benefits and challenges of cloud – based system.	Cloud-based systems analysed accordingly.
4.3 CYBERSECURITY	4.3.1 Malware Analysis	4.3.1.1. Implement strategies to mitigate malware attacks	• Discussing Malware • Analysing various types of malwares *(spyware, worms, virus, trojan ...)* • Watching videos about famous malware cases and discuss them. • Writing an assay on the importance of cybersecurity in daily life. • Creating computer lab policy for preventing malware attacks.	Strategies to mitigate malware attacks implemented correctly

TOPIC	SUB-TOPIC	SPECIFIC COMPETENCES	LEARNING ACTIVITIES	EXPECTED STANDARD
4.4 DIGITAL CITIZENSHIP	4.4.1 Digital Ethics	4.4.1.1 Demonstrate ethical behavior in a digital environment	• Discussing digital citizenship. • Exploring features of Digital Identity *(Ip address, location ...)* • Demonstrating online communication responsibly • Distinguishing between fact, opinion, and bias in digital content • Role playing how to balance screen time with offline activities to maintain physical and mental wellbeing. • Demonstrating a culture of inclusion, *(respect and fairness ...)* in online communities • Writing an assay on the importance of digital ethics in daily life.	Ethical behaviour in digital environment demonstrated appropriately

APPENDICES

Scope and Sequence of ICT Syllabus (Form 1 to Form 4)

Major Theme	Form 1 (Competences)	Form 2 (Competences)	Form 3 (Competences)	Form 4 (Competences)
Introduction of ICT	• Demonstrate understanding of evolution of Computers • Identify various ICT tools and their purposes. • Apply ICT concepts to everyday activities			
Components of Computer Systems	• Identify different computer hardware • Demonstrate understanding of computer hardware functions • Classify different types of computer software • Use different types of application software			
File management	• Use different file naming conventions. • Demonstrate safe file handling practices • Organize and manage files and folders.	• Compress files and folders • Encrypt files and folders		
Basics of Internet and Online Tools	• Demonstrate understanding of how internet works • Use online tools to search and navigate the internet			

Major Theme	Form 1 (Competences)	Form 2 (Competences)	Form 3 (Competences)	Form 4 (Competences)
	• Apply basic online safety practices			
Digital Literacy	• Create and manage email accounts • Practice ethical use of technology	• Create and manage email accounts		
ICT in business	• Appreciate ICT tools in Business	• Use electronic business tools		
Productivity Tools		• Create and customize word documents • Manage data using spreadsheets • Create presentations • Design publications	• Use functions for data analysis	
Website Design			• Design web pages using templates	
Cloud Computing			• Use cloud computing	• Analyse cloud-based systems
Cybersecurity			• Demonstrate understanding of cybersecurity • Apply best cybersecurity practices	• Implement strategies to mitigate malware attacks
Computer Networking				• Demonstrate understanding of computer networks
Digital Citizenship				• Demonstrate ethical behavior in a digital environment

Hardware	Recommendations
Laptop, Smartphone, Printer, scanner, Tablets , Headphones and Microphones (Processor)	• Minimum: 4 cores (Core i3 and above), 1.6 Gigahertz (GHz) or faster, 64-bit. • Recommended: (8 cores or more), 2 GHz or higher, 64-bit.
RAM and Speed	• Recommended: 8 GB and above. • Recommended: 2GB or higher for Smart phones • Speed 1.6HGhz or Higher
Hard disk space/ SSD	• Minimum: 120 GB and above. • Minimum 16 GB for Smart phones