

RURAL DIGITAL BRIDGE TEACHER'S GUIDE



Grade 7



NONG MODIKWA PRIMARY SCHOOL



Resource
Checklist



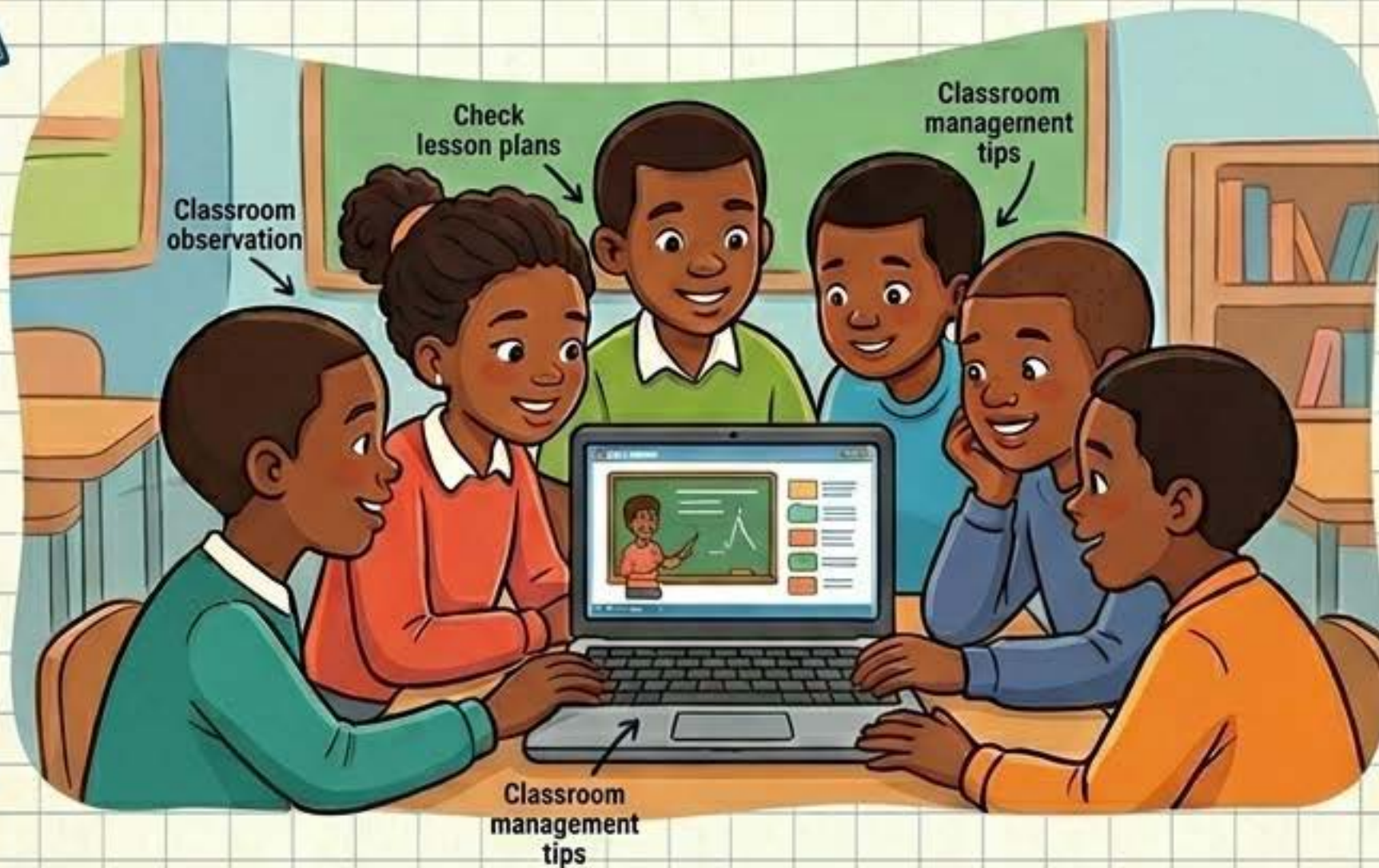
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EMPOWERING RURAL LEARNERS THROUGH DIGITAL INNOVATION

A COMPREHENSIVE CURRICULUM AND FACILITATOR'S GUIDE

By LESETJA M LEDWABA | YEAR: 2026

FACILITATOR
EDITION

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"Empowering Rural Learners Through Digital Innovation."

RURAL DIGITAL BRIDGE

Grade 7

Computer Literacy Curriculum Teacher Guideline

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A special thank you is offered to fellow educators who continuously strive to improve learner outcomes through dedication, innovation, professionalism, and lifelong learning. This Teacher Guide was developed with the belief that empowering teachers with practical resources ultimately empowers learners to succeed in an increasingly digital world.

Finally, heartfelt appreciation is extended to the learners of Nong Modikwa Primary School, whose enthusiasm, curiosity, and determination to learn serve as the driving force behind the Rural Digital Bridge Programme.

May this Teacher Guide support educators in creating engaging, inclusive, and technology-enhanced learning experiences that prepare learners for the opportunities and challenges of the future.

ABOUT THE AUTHOR

Mr Lesetja Ledwaba is a Grade 7 educator at Nong Modikwa Primary School and founder of the Rural Digital Bridge Programme. He is passionate about empowering rural learners through computer literacy, digital skills development, and technology-enhanced learning. Through his work, he seeks to bridge the digital divide and create opportunities for learners to succeed in a technology-driven world.

VISION AND MISSION

VISION

To empower educators to deliver high-quality computer literacy education that equips rural learners with the digital skills, confidence, and knowledge needed to succeed in an increasingly technology-driven world.

The Rural Digital Bridge Teacher Guide envisions classrooms where every learner has the opportunity to develop digital literacy, responsible technology use, and future-ready skills regardless of geographical location or socio-economic background.

MISSION

The mission of the Rural Digital Bridge Teacher Guide is to provide educators with practical, learner-centred, and technology-enhanced teaching resources that support effective computer literacy instruction in rural and under-resourced schools.

The Teacher Guide is committed to:

- Supporting educators with structured lesson guidance and practical activities
- Promoting digital literacy and technology integration in teaching and learning
- Encouraging safe, responsible, and ethical use of technology
- Enhancing learner participation, creativity, and problem-solving skills
- Supporting digital inclusion and educational innovation in rural communities
- Strengthening partnerships between schools, communities, volunteers, educational institutions, government departments, SETAs, NGOs, and the private sector
- Preparing learners for future educational, career, and digital opportunities

Through this Teacher Guide, educators are empowered to become facilitators of digital transformation, helping learners bridge the digital divide and participate meaningfully in the Fourth Industrial Revolution (4IR).

"Empowering Rural Learners Through Digital Innovation."

PURPOSE OF THE TEACHER GUIDE

The purpose of the Rural Digital Bridge Grade 7 Computer Literacy Teacher Guide is to provide educators with a practical and structured resource for teaching computer literacy in rural and under-resourced schools. The guide supports the effective delivery of the Rural Digital Bridge Curriculum by offering lesson guidance, teaching strategies, practical activities, assessment tools, and learner support resources.

The Teacher Guide aims to assist educators in developing learners' digital literacy, computer skills, digital citizenship, and technology awareness through engaging, learner-centred, and hands-on learning experiences. It promotes the integration of technology into teaching and learning while encouraging safe, responsible, and ethical use of digital tools.

Furthermore, the guide seeks to empower educators to create inclusive learning environments that build learner confidence, encourage independent learning, and prepare learners for future educational, career, and digital opportunities in the Fourth Industrial Revolution (4IR).

Ultimately, the Teacher Guide serves as a tool for strengthening digital inclusion, improving educational outcomes, and supporting the transformation of rural schools into centres of digital learning and innovation.

"Empowering Rural Learners Through Digital Innovation."

CURRICULUM OUTCOMES

Upon successful completion of the Rural Digital Bridge Grade 7 Computer Literacy Programme, learners should be able to:

Digital Literacy and Computer Skills

- Identify and describe the basic parts and functions of a computer.
- Demonstrate safe and responsible use of computer equipment.
- Correctly start up and shut down a computer.
- Use a mouse and keyboard effectively to perform basic computer tasks.
- Navigate the computer desktop and open, use, and close programs.
- Create, save, organise, and manage files and folders.

Productivity and Technology Skills

- Apply basic typing skills using correct keyboard techniques.
- Create and edit simple documents using Microsoft Word.
- Enter and organise data using Microsoft Excel.
- Develop simple presentations using Microsoft PowerPoint.
- Demonstrate confidence when using common digital tools and applications.

Internet and Digital Communication Skills

- Explain the purpose and benefits of the Internet.
- Access and use online educational resources responsibly.
- Conduct basic online research using appropriate search techniques.
- Demonstrate awareness of safe online communication practices.

Digital Citizenship and Online Safety

- Apply principles of responsible digital citizenship.
- Recognise and avoid online risks, including cyberbullying and unsafe websites.
- Protect personal information through safe password practices.
- Demonstrate respectful and ethical behaviour when using digital technologies.

Emerging Technology Awareness

- Use smartphones responsibly for educational purposes.
- Identify examples of Artificial Intelligence (AI) and smart technologies used in everyday life.
- Demonstrate an understanding of how technology can support learning, communication, and problem-solving.

Personal and Social Development

- Develop confidence in using technology for learning and personal growth.
- Demonstrate creativity, collaboration, and problem-solving skills through digital activities.
- Participate actively in technology-enhanced learning opportunities.
- Appreciate the importance of lifelong learning in a digital society.

Overall Programme Outcome

By the end of the programme, learners will possess foundational computer literacy, digital citizenship, and technology skills that enable them to participate confidently, responsibly, and effectively in modern education and an increasingly digital world.

"Empowering Rural Learners Through Digital Innovation."

TEACHING AND LEARNING APPROACH

The Rural Digital Bridge Grade 7 Computer Literacy Curriculum uses a learner-centred, practical, and technology-enhanced teaching and learning approach designed to accommodate the needs of learners within rural and under-resourced communities.

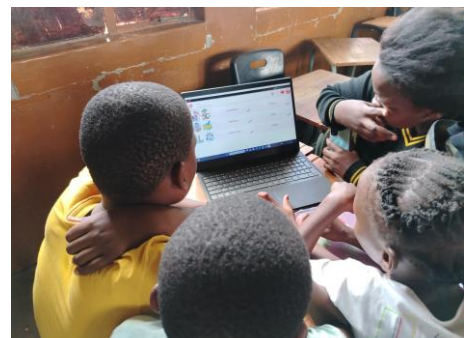
The programme focuses on active participation, practical computer experience, collaboration, and real-life application of digital skills in order to create meaningful and engaging learning experiences.

1. LEARNER-CENTRED APPROACH

The curriculum encourages learners to actively participate in lessons through:

- Practical computer activities
- Group discussions
- Demonstrations
- Collaborative learning
- Question-and-answer sessions

Learners are encouraged to explore, practice, and apply digital skills independently and confidently.



2. PRACTICAL LEARNING

The programme prioritises hands-on learning experiences where learners:

- Operate computers directly
- Practice typing and file management
- Use Microsoft Office applications
- Access online educational resources
- Participate in digital learning activities

Practical learning helps learners build confidence and improve digital literacy skills effectively.



3. TECHNOLOGY-ENHANCED LEARNING

The curriculum integrates technology into teaching and learning through:

- Computer-assisted lessons
- Educational videos
- Smartphone learning
- Online communication platforms
- WhatsApp learning groups
- Google educational tools



This approach expands learning opportunities beyond the traditional classroom environment.

4. COLLABORATIVE LEARNING

Learners are encouraged to work together during:

- Group activities
- Peer support sessions
- Digital projects
- Online discussions

Collaborative learning promotes teamwork, communication skills, and shared problem-solving.



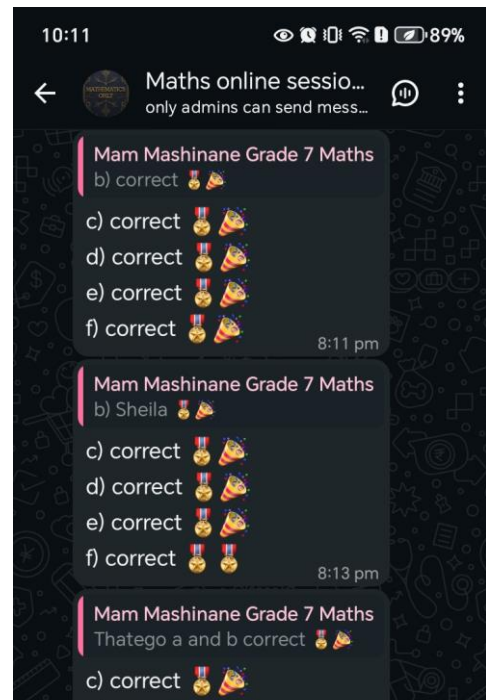
5. BLENDED LEARNING APPROACH

The programme combines:

- Face-to-face classroom instruction
- Practical computer sessions
- Online learning support
- Mobile learning activities



This blended learning approach supports continuous learning both inside and outside the classroom.



6. DIFFERENTIATED LEARNING

The curriculum recognises that learners have different learning abilities and levels of technological exposure.

Educators are encouraged to:

- Provide individual support where needed
- Use simple and clear instructions
- Allow additional practice opportunities
- Adapt teaching methods to learner needs

7. COMMUNITY-BASED LEARNING

The programme promotes community participation through:

- Youth volunteers
- Parent involvement
- Community partnerships
- educational stakeholders

This strengthens learner support and promotes sustainability of the programme.



8. VALUES-BASED EDUCATION

The curriculum promotes:

- Responsibility
- Respect
- Digital citizenship
- Online safety
- Ethical technology use
- Discipline and teamwork

Learners are encouraged to become responsible digital citizens within their communities.



9. INNOVATION AND FUTURE-READY LEARNING

The programme introduces learners to:

- Modern digital tools
- Online learning platforms
- Artificial Intelligence awareness
- Smart technology concepts
- Fourth Industrial Revolution (4IR) skills

This prepares learners for future educational and career opportunities.



OVERALL TEACHING PHILOSOPHY

The Rural Digital Bridge Programme believes that every learner, regardless of background or location, deserves access to quality digital education and opportunities to participate meaningfully in the modern technological world.

The programme therefore seeks to create an inclusive, supportive, innovative, and empowering learning environment that promotes digital inclusion, learner confidence, and educational transformation within rural communities.

ASSESSMENT STRUCTURE

The Rural Digital Bridge Grade 7 Computer Literacy Curriculum uses a continuous and practical assessment approach designed to evaluate learner understanding, participation, digital skills development, and responsible use of technology.

The assessment structure aims to promote active learning, practical application of skills, and continuous improvement while accommodating learners from diverse educational and technological backgrounds.

1. PURPOSE OF ASSESSMENT

Assessment within the programme is intended to:

- Measure learner understanding of computer concepts
 - Evaluate practical digital skills
 - Monitor learner progress and participation
 - Identify areas requiring additional support
 - Encourage learner confidence and independent learning
 - Promote responsible and safe use of technology
-

2. TYPES OF ASSESSMENT

The curriculum includes both formal and informal assessment activities.

A. INFORMAL ASSESSMENT

Informal assessment takes place during daily teaching and learning activities.

Examples include:

- Oral questioning
- Group discussions
- Observation during practical activities
- Classroom participation
- Homework and practice activities
- Peer collaboration

Informal assessment helps educators monitor learner understanding continuously.

B. FORMAL ASSESSMENT

Formal assessment measures learner achievement more formally and systematically.

Examples include:

- Written tests
- Quizzes
- Practical computer activities
- Projects
- Assignments
- End-of-section assessments

Formal assessments contribute to learner progress records and programme evaluation.

3. PRACTICAL ASSESSMENT

Practical activities form an important part of the curriculum.

Learners may be assessed on their ability to:

- Turn on and shut down computers correctly
- Use a mouse and keyboard
- Open and close programs
- Create folders and save files
- Type simple documents
- Use Microsoft Word, Excel, and PowerPoint
- Access educational Internet resources safely

Practical assessments encourage hands-on learning and confidence in technology use.

4. ASSESSMENT METHODS

Assessment methods may include:

- Multiple choice questions
- True or False activities
- Matching columns
- Short questions
- Practical demonstrations
- Group activities
- Oral presentations
- Digital projects

5. CONTINUOUS ASSESSMENT APPROACH

The curriculum uses continuous assessment to:

- Track learner improvement over time
- Encourage regular participation
- Provide ongoing feedback
- Identify learning barriers early

Continuous assessment supports learner growth and confidence development.

6. ASSESSMENT OF DIGITAL CITIZENSHIP

Learners will also be assessed on:

- Responsible use of technology
 - Online safety awareness
 - Respectful digital communication
 - Teamwork and collaboration
 - Ethical behaviour during computer use
-

7. ASSESSMENT WEIGHTING (SUGGESTED)

Assessment Type	Suggested Weighting
Class Activities	20%
Quizzes	10%
Practical Activities	30%
Written Tests	20%
Projects/Assignments	20%

8. RECORDING AND REPORTING

Educators are encouraged to:

- Keep attendance records
- Record learner participation
- Maintain assessment marks
- Provide constructive feedback
- Monitor learner progress regularly

Progress may be communicated to:

- Learners
- Parents
- School management
- Programme partners where necessary

9. INCLUSIVE ASSESSMENT

The curriculum recognises that learners may have different levels of technological exposure and learning abilities.

Assessment should therefore:

- Encourage participation
- Support learner confidence
- Provide opportunities for improvement
- Use clear and simple instructions
- Accommodate learner diversity

10. OVERALL ASSESSMENT GOAL

The overall goal of assessment within the Rural Digital Bridge Programme is not only to evaluate learner performance, but also to empower learners with practical digital skills, confidence, creativity, and responsible technology use that can support future education and career opportunities.

CLASSROOM MANAGEMENT GUIDELINES

The Rural Digital Bridge Programme promotes a safe, organised, and learner-centred environment that supports effective computer literacy teaching and learning.

Managing Large Classes

- Establish clear classroom rules and expectations.
- Organise learners into groups or pairs.
- Use demonstrations before practical activities.
- Encourage peer learning and group support.
- Monitor learner participation and progress regularly.

Managing Limited Computers

- Allow learners to share computers in pairs or small groups.
- Rotate learners during practical sessions.
- Combine theory lessons with practical activities.
- Encourage observation and collaboration while waiting for computer access.
- Schedule additional practice opportunities where possible.

Working in Rural Environments

- Use offline learning resources when Internet access is unavailable.
- Make effective use of available technology and resources.
- Encourage community and volunteer participation.
- Promote responsible use and care of ICT equipment.
- Build partnerships that support digital learning initiatives.

Safety Procedures

Educators should ensure that learners:

- Handle computer equipment carefully.
- Keep food and drinks away from computers.
- Sit correctly when using computers.

- Report damaged equipment immediately.
- Use strong passwords and protect personal information.
- Follow school Internet and technology use policies.

Overall Guideline

Effective classroom management ensures that all learners participate actively, use technology responsibly, and develop digital skills in a safe and supportive learning environment.

"Empowering Rural Learners Through Digital Innovation."

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Chapter 1: Introduction to Computers

Lesson Overview & Pacing Guide

- **Total Recommended Time:** 3 to 4 Hours (spread across 4–5 lessons depending on your timetable).
- **Target Audience:** Beginner learners (Elementary/Primary or early Senior Phase facing digital technology for the first time).
- **Context Focus:** Adaptable for both fully equipped labs and resource-constrained or rural classrooms (using unplugged/drawing methods).

1. Lesson Delivery Plans

Section 1 & 2: What is a Computer & Its Main Parts

- **Suggested Time:** 1 Hour
- **Teaching Strategy (The "Hook"):** Hold up a smartphone or point to a desktop. Ask: *"Is this a computer? How does it help us?"*
- **Explanation Analogy:** Explain the **System Unit (CPU)** as the human brain. The **Monitor** is like our face/eyes showing expressions/information, and the **Mouse/Keyboard** are like our hands putting things into the brain.
- **Unplugged Classroom Tip:** If you do not have physical computers, create cardboard cutouts or draw the parts large on the chalkboard before class begins.

Section 3 & 4: Types and Uses of Computers

- **Suggested Time:** 1 Hour
- **Teaching Strategy:** Use a matching or sorting game. Ask learners to look around their community (clinics, local shops, police stations) and identify where they have seen these devices.
- **Contextual Focus:** Emphasize that a *Smartphone* is actually a powerful, small computer in their pockets.

Section 5 & 6: Computer Rules & Rural Importance

- **Suggested Time:** 30–45 Minutes
- **Teaching Strategy:** Roleplay or Class Discussion. Demonstrate the *wrong* way to handle a computer (e.g., pretending to eat a sticky snack over a notebook) and let learners call out what rule is being broken.
- **Value Statement:** Frame computer skills not just as a school subject, but as a bridge to future job opportunities and connecting their community to global information.

2. Activity & Group Work Management

Drawing Activity: Draw and Label

- **Teacher Instructions:** Walk around the room to ensure learners are distinguishing between the **System Unit** (the box) and the **Monitor** (the screen). A common mistake for beginners is calling the whole machine "the TV" or "the CPU."
- **Remediation:** If learners struggle to draw freehand, sketch basic geometric outlines on the board (Rectangles for the monitor/system unit, small ovals for the mouse) for them to trace.

Bonus Activity: Group Discussion

- **Grouping:** 4 to 5 learners per group.
- **Guiding Prompt for the Teacher:** If groups get stuck, prompt them with: *"Think about our local clinic or school. How could a computer help the nurse find patient files faster, or help us see pictures of wild animals from other countries?"*
- **Presentation:** Limit each group to a 1-minute presentation or 1 key sentence spoken by a chosen group leader to save time.

3. Assessment Memorandums & Answer Keys

Assessment 1 – Classwork (Multiple Choice)

1. **C** – System Unit (*Remind learners: CPU stands for Central Processing Unit—the brain*).
2. **B** – Keyboard
3. **A** – Monitor

4. **C** – Laptop
5. **D** – All of the above

Assessment 2 – Practical / Written

Section A: Match the Columns

1. Mouse $\rightarrow$ **C. Used for clicking**
2. Monitor $\rightarrow$ **A. Displays information**
3. Keyboard $\rightarrow$ **B. Used for typing**

Section B: Short Questions

1. **Define a computer.**
 - *Answer: An electronic device that receives, processes, stores data, and produces information. (Accept simpler definitions like: "An electronic tool that helps us do work faster and easier.")*
2. **Name any three parts of a computer.**
 - *Answer (Any three): Monitor, Keyboard, Mouse, System Unit (CPU), Speakers, Printer.*
3. **Mention two places where computers are used.**
 - *Answer (Any two): Schools, Hospitals/Clinics, Banks, Shops, Government offices, Homes.*
4. **Why are computers important for rural learners?**
 - *Answer: To help them access information, learn digital skills for future jobs, and close the gap between rural and urban schools. (Accept answers focused on connecting with the world or making learning easier).*

Quiz – Introduction to Computers (True or False)

1. **False** (*A monitor shows pictures; a keyboard is used for typing.*)
2. **True**
3. **True**
4. **False** (*Keep liquids far away from electronics to prevent damage.*)
5. **True**

4. Teacher's Checklist for Lesson Readiness

- [] Do I have physical devices, models, or clear drawings of a Monitor, Keyboard, Mouse, and System Unit?
- [] Are the "Key Words" written on a side panel of the board or on a poster for continuous reference throughout the week?
- [] Have I established clear rules for lab entry (if applicable), such as washing hands or leaving bags outside?

Chapter 2: Computer Rules and Safety

Lesson Overview & Pacing Guide

- **Total Recommended Time:** 3 Hours (broken down into 3 weekly 1-hour sessions or 6 half-hour periods).
- **Target Audience:** Grade 7 learners. At this level, learners are developing independent abstract thinking but still require concrete boundaries, especially when transitioning into communal spaces like a computer laboratory.
- **Contextual Focus:** High emphasis on resource preservation and collective accountability, making it deeply practical for rural schools, under-resourced schools, or shared computer hubs.

1. Lesson Delivery Plans

Session 1: Lab Rules & Equipment Care (Sections 1, 2 & 4A, 4C)

- **Suggested Time:** 1 Hour
- **The "Hook":** Walk into the classroom carrying a glass of water and a piece of chalk. Intentionally pretend to trip slightly near a desk or a piece of equipment. Ask the class: *"What would happen to this chalk if I dropped it in water? What would happen if this was a computer keyboard worth hundreds of rands?"*
- **Core Concepts:** Introduce the concept of a shared resource footprint. Focus heavily on **Rule 2 (No Food/Drinks)** and **Rule 3 (Handle Gently)**. Explain that sticky fingers introduce debris under keyboard keys, causing them to jam over time.
- **Rural School Adaptation:** If your school does not have running tap water directly outside the room for **Rule 1 (Wash Hands)**, keep a bottle of hand sanitizer at the door or keep a dry hand-wipe rag at the entryway as a physical ritual to reinforce cleanliness before touching screens or keyboards.

Session 2: Digital Safety & Personal Protection (Sections 3, 4D, 4E & 5)

- **Suggested Time:** 1 Hour
- **Core Concepts:** Shift focus from protecting the *machine* to protecting the *user*.

- **Analogy for Passwords:** Explain a **Password** as the physical key to a locker or a house. *"If you give your house key to a stranger, you aren't just letting them borrow a key—you are giving them access to everything inside your home."*
- **Ergonomics (Sitting Properly):** Have the entire class stand up and stretch, then practice sitting with their backs straight, feet flat on the floor, and eyes leveling with the top of an imaginary monitor. Explain that poor posture at age 12 or 13 can lead to chronic neck and back problems later in life.

Session 3: Consequences, Resource Value & Community Accountability (Sections 6 & 7)

- **Suggested Time:** 1 Hour
- **Core Concepts:** Connect personal behavior to community impact. Help Grade 7s internalize *why* infrastructure in rural schools requires double the protection compared to urban settings.
- **Guided Discussion:** Explain the logistics of technology repair in remote areas: it is not just the price of the parts; it is the cost of transport, delivery delays, and the fact that if one computer breaks, five or six classmates lose their access to the digital world.

2. Classroom Activities & Group Management

Class Activity: Group Discussion

- **Forming Groups:** Group learners into clusters of 4 to 6. If possible, mix learners who have home access to smartphones with those who only see computers at school to balance perspectives.
- **Teacher Facilitation Guide:** Move between groups and ensure conversations stay grounded in practical realities:
 - *For Question 1 (Food/Drink):* Guide them to mention insects (ants/mice) being attracted to crumbs, which can chew through internal wires.
 - *For Question 2 (Frozen/Stopped Computer):* Emphasize the protocol of **Rule 6 (Ask for Help)**. Warn against the temptation to repeatedly hit keys or violently press the power button, which can corrupt files.

Bonus Activity: "Protect Our Computer Lab" Poster

- **Execution Strategy:** This makes an excellent homework task or a cross-curricular art/language project.
- **Resource Management:** If drawing paper is scarce, let groups work on recycled cardboard boxes or old calendar backs.
- **Utility:** Hang the best, clearest posters directly inside your computer room or on the classroom walls as permanent visual reminders.

3. Assessment Memorandums & Answer Keys

Assessment 1 – Classwork (Multiple Choice)

1. **B** — Liquids can damage equipment. (*Elaboration for class: Water conducts electricity; spilled water causes short circuits that destroy internal parts instantly*).
2. **C** — Call the teacher. (*Elaboration: Pulling cables while electricity is running can shock the user or spark*).
3. **B** — To protect equipment.
4. **C** — Using computers for learning.
5. **A** — Devices are expensive to replace.

Assessment 2 – Written / Practical

Section A: Match the Columns

1. Password $\rightarrow$ **A. Keeps information safe**
2. Safety $\rightarrow$ **B. Protecting from danger**
3. Equipment $\rightarrow$ **C. Computer tools and devices**

Section B: Short Questions

1. **Mention two computer lab rules.**
 - *Accept any two:* Wash hands; No food or drinks; Handle equipment carefully; Use devices for learning only; Respect other learners; Ask for help with problems; Keep the lab clean.
2. **Why should learners handle computers carefully?**

- *Answer:* To prevent damage, stop accidents/injuries, and ensure that the equipment lasts for everyone to use.
3. **What should you do if you see damaged equipment?**
- *Answer:* Do not touch it or try to fix it yourself. Report it immediately to the teacher.
4. **Explain responsible use of technology.**
- *Answer:* Using devices respectfully, using them for educational purposes, not visiting harmful or dangerous websites, and refusing to bully or disturb others online or in person.

Quiz – Computer Rules and Safety (True or False)

1. **False** (*Food introduces crumbs, grease, and pests into electronics*).
2. **True**
3. **False** (*Passwords must remain strictly private to protect accounts and identity*).
4. **True**
5. **True**

4. Teacher's Diagnostic Checklist

Before taking learners into any space with computer equipment, ensure you can tick off these items:

- **[] Reporting Protocol:** Is there a clear, simple protocol for learners to flag errors? (e.g., “*Put your hand up and do not touch the screen until I arrive*”).
- **[] Physical Layout Safety:** Are there loose power strips or cables on the floor where learners walk? If yes, ensure they are taped down or blocked off to avoid tripping hazards.
- **[] Shut Down Routine:** Have you built in 5 to 7 minutes at the end of the lesson block solely for proper operating system shutdown procedures? (*Remind learners: Never pull the wall plug to turn off a machine*).

Chapter 3: Turning On a Computer and Mouse Skills

Lesson Overview & Pacing Guide

- **Total Recommended Time:** 3 to 4 Hours (Highly practical; split into 1 theory/demonstration session and 2–3 hands-on practical lab sessions).
- **Target Audience:** Grade 7 learners. Developing fine-motor coordination for precise clicking and conceptualizing the sequence of booting up/shutting down are the core milestones here.
- **Contextual Focus:** Provides specific guidance for managing limited hardware resources, physical hand placement troubleshooting, and protecting software systems from sudden power-loss corruption.

1. Lesson Delivery Plans

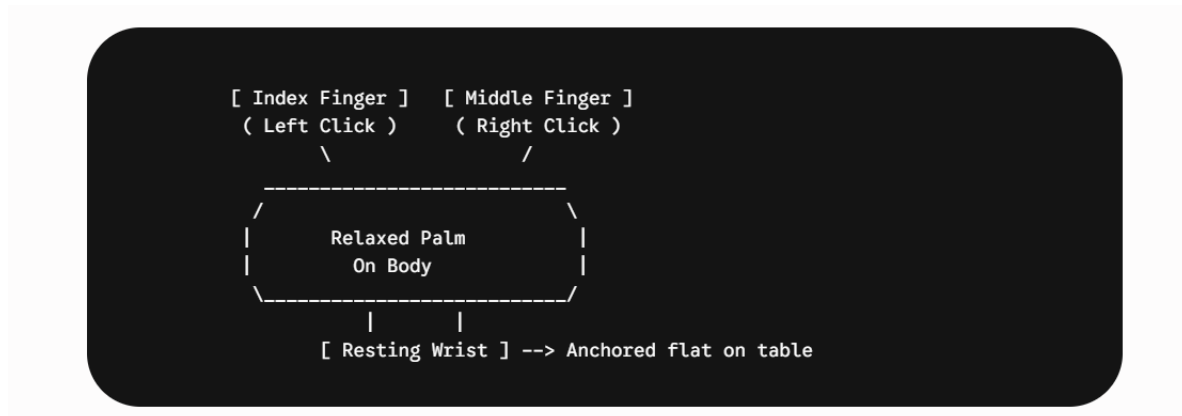
Session 1: The Boot-Up Sequence & Physical Setup (Sections 1, 2 & 3)

- **Suggested Time:** 1 Hour
- **The "Hook":** Ask the class: *"When you wake up in the morning, do you jump out of bed instantly at full speed, or does your brain need a few moments to realize where you are and get ready?"* Explain that the computer goes through the exact same process called "booting up."
- **Core Concepts:** Emphasize the strict sequence of turning on hardware. Power must flow from the outside in (Wall Plug → Extension → System Unit/Monitor).
- **Classroom Management Insight:** Beginners often panic when a black screen displays loading text or a logo spinning. Explicitly teach them that a loading screen is normal and they must wait without touching keys.

Session 2: Mastery of the Mouse & Hand Mechanics (Sections 4, 5, 6 & 7)

- **Suggested Time:** 1 Hour
- **The Concept:** The mouse translates physical hand movements into digital actions.

- **Physical Gripping Correction:** Learners often grip the mouse like a stress ball, squeezing tightly or lifting it off the desk when they run out of space.
- *Correction Strategy:* Teach them the "Anchor Technique." The wrist should rest gently on the desk surface acting as an anchor, while only the fingers and palm maneuver the mouse.



Session 3: Software Control & Graceful Shutdown (Sections 8, 9 & 10)

- **Suggested Time:** 1 Hour
- **Core Concepts:** Double-clicking execution, window management (The "X" button), and safe operating system shutdown protocols.
- **Critical Operational Rule:** Explain *why* pulling the plug to turn off a computer is destructive. Use the filing cabinet analogy: *"If you are in the middle of filing papers away and someone suddenly locks the room and throws your papers on the floor, everything gets messy. A proper shutdown allows the computer to neatly organize its system files before losing power."*

2. Classroom Activities & Practical Lab Management

Practical Mouse Practice (Class Activity)

- **Unplugged Alternative (If computers are limited):** Print or draw life-sized paper mouse templates. Have learners practice finger placement (index finger on the left button, middle finger on the right) and practice rhythmic "tapping" movements to simulate double-clicking without damaging equipment.

- **Live Lab Implementation:** Open a blank desktop space. Have learners practice moving the pointer to touch different screen icons without clicking, observing how elements highlight.

Bonus Activity: Mouse Challenge Game

- **Teacher Observation Protocol:** Walk around the room during this challenge. Look explicitly for these three common beginner issues:
 1. **The "Drag-Slip":** When double-clicking, beginners often accidentally move the physical mouse between the first and second click. This causes the computer to interpret the action as a drag rather than a double-click. Teach them to keep their hand perfectly still during the double-click split-second.
 2. **Button Confusion:** Watch for learners trying to use the right-click button to select ordinary items. Reinforce that the **Left Button is the Worker** (does 90% of tasks) and the **Right Button is the Menu Helper**.
 3. **Lifting the Mouse:** If a learner reaches the edge of the physical desk or mousepad but wants the pointer to keep moving, show them how to lift the mouse up into the air, place it back down in the center of the mat, and continue sliding.

3. Assessment Memorandums & Answer Keys

Assessment 1 – Classwork (Multiple Choice)

1. **B** — Mouse
2. **B** — Pressing twice quickly (*Remind learners: It must sound like "click-click!", not "click... pause... click"*).
3. **B** — Right button
4. **C** — Save their work
5. **B** — Desktop

Assessment 2 – Written / Practical

Section A: Match the Columns

1. Double Click → **A. Opens programs**
2. Scroll Wheel → **B. Moves pages up and down**
3. Pointer → **C. Arrow on the screen**

Section B: Short Questions

1. **Mention two steps for turning on a computer.**
 - *Accept any two:* Check that all power cables/monitors are securely connected; Switch on the wall plug/extension box; Press the power button on the system unit/monitor.
2. **What is the function of a mouse?**
 - *Answer:* It is an input device used to control the on-screen pointer, click items, select files, and open or close programs.
3. **Explain the difference between single click and double click.**
 - *Answer:* A single click involves pressing the left mouse button once to select or target an item. A double click involves pressing the left mouse button rapidly two times to open a program, file, or folder.
4. **Why is it important to shut down a computer properly?**
 - *Answer:* It allows the computer to save system information, close active background processes cleanly, and prevents software corruption or data damage.

Quiz – Turning On Computer and Mouse Skills (True or False)

1. **True**
2. **False** (*Double clicking must be done rapidly*).
3. **False** (*Pulling the plug can corrupt files or blow internal fuses*).
4. **True**
5. **True**

4. Teacher's Practical Diagnostic Checklist

During the hands-on session, keep a clipboard with this quick observational grid to identify learners who require individual intervention:

Learner Name	Correct Grip? (Y/N)	Can Double-Click Successfully? (Y/N)	Understands Drag & Drop? (Y/N)	Can Navigate to Shutdown? (Y/N)
<i>Example Learner</i>	Y	N (<i>Moves mouse between clicks</i>)	Y	Y

- Remediation Tip:** For learners struggling with double-clicking speeds, you can manually navigate into the operating system's control panel configuration settings before the lesson begins and lower the "Double-Click Speed" threshold slider to give them a wider, more forgiving time window between clicks.

Chapter 4: Desktop and Opening Programs

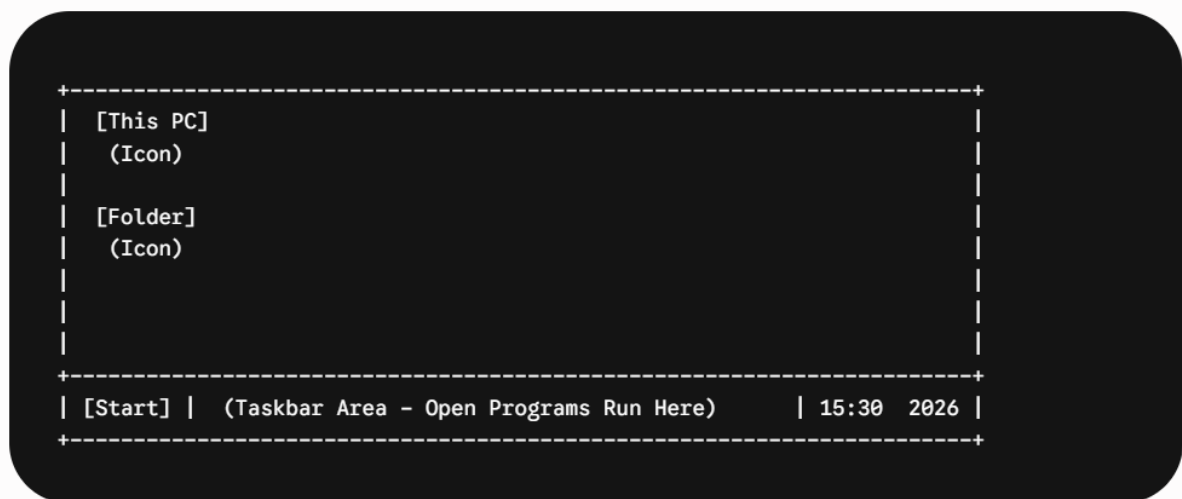
Lesson Overview & Pacing Guide

- **Total Recommended Time:** 3 Hours (split into 1 hour of interactive classroom conceptualization and 2 hours of direct lab practice).
- **Target Audience:** Grade 7 learners. At this stage, learners transition from basic physical coordination (the mouse grip) to spatial digital organization (navigating interface layouts).
- **Contextual Focus:** Provides specific instructional scaffolding for multi-step software navigation, visual conceptualization for classrooms without screens, and a safety protocol against accidental file deletion.

1. Lesson Delivery Plans

Session 1: The "Working Table" Concept & Layout Identification (Sections 1 & 2)

- **Suggested Time:** 1 Hour
- **The "Hook":** Stand next to your physical teacher's desk. Point to the items on top (pens, a calculator, a notebook). Ask the class: *"Why do I keep these items right here on top of my table instead of packing them away deep inside a cupboard?"* Explain that the computer **Desktop** is their digital working table, and **Icons** are the tools laid out on top so they can reach them immediately.
- **Core Concepts:** Introduce the primary interface anatomy: Background/Wallpaper, Icons, Taskbar, and the Start Button.
- **Chalkboard/Unplugged Map:** If you do not have active monitors for every learner, sketch a standard desktop grid layout on the board. Have individual learners come to the board and point out where the "Start Button" or the "Taskbar" lives.



Session 2: Executing Software Controls & File Storage (Sections 3, 4, 5 & 6)

- **Suggested Time:** 1 Hour
- **Core Concepts:** Launching programs using two distinct methodologies (Direct Desktop Shortcut vs. Search/Start Tree Matrix), window termination via the global close parameter (x), and understanding the storage hierarchy of a **Folder**.
- **Nuance Distinction:** Explicitly explain the functional difference between an **Icon/Program** (the tool, like a paintbrush) and a **Folder** (the storage cabinet where finished artwork is kept).

Session 3: Taskbar Navigation & Interface Etiquette (Sections 7, 8 & 9)

- **Suggested Time:** 1 Hour
- **Core Concepts:** Multi-tasking visualization via the **Taskbar**, and operating restrictions regarding system modification.
- **System Integrity Rule:** Focus heavily on **Section 8 (Avoid deleting files)**. Grade 7 learners frequently enjoy experimenting with customization (changing wallpapers, renaming system folders). Explicitly teach them that deleting or moving unfamiliar icons can break the software ecosystem for the next class.

2. Classroom Activities & Practical Lab Management

Desktop Exploration Activity (Class Activity)

- **Live Lab Walkthrough Guide:** Have all learners log in. Guide them step-by-step as a unified group before letting them explore independently:
 - *Step 1:* Instruct everyone to move their pointer over **This PC** without clicking. Explain how the background box shifts color to show focus.
 - *Step 2:* Guide everyone to perform a slow, deliberate double-click on a target folder.
 - *Troubleshooting:* Watch out for learners who double-click too slowly. If they click, wait, and click again, the computer will interpret it as a command to rename the folder rather than open it. If a folder name turns into a blinking text box, instruct the learner to click once on an empty black space on the wallpaper to cancel it.

Bonus Activity: "Find the Icon" Challenge

- **Execution Grid:** Turn this into a quick, gamified timed drill to test speed, layout recognition, and termination control.
- **Command Commands Matrix:** Call out the following sequence aloud, pausing to verify screens across the room:
 1. *"Point to the Recycle Bin."* (Check hands)
 2. *"Double-click to launch the Calculator."* (Verify application windows populate)
 3. *"Move your mouse to the top right corner of the Calculator and click the 'X' button once."* (Verify application closure)

3. Assessment Memorandums & Answer Keys

Assessment 1 – Classwork (Multiple Choice)

1. **B** — Main computer screen
2. **C** — A small picture representing a program
3. **A** — Start button (*Elaboration for class: The Start button is the gateway to the computer's entire library of hidden programs.*)
4. **B** — Files and documents
5. **C** — X

Assessment 2 – Written / Practical

Section A: Match the Columns

1. Desktop $\rightarrow$ **A. Main screen**
2. Folder $\rightarrow$ **B. Stores files**
3. Taskbar $\rightarrow$ **C. Shows open programs**

Section B: Short Questions

1. **What is the purpose of the desktop?**
 - *Answer:* It acts as the central interface zone where users can visually find and open programs, interact with folders, organize files, and navigate system operations smoothly.
2. **Mention two parts of the desktop.**
 - *Answer (Any two):* Background/Wallpaper, Icons, Taskbar, Start Button.
3. **Explain how to open a program.**
 - *Answer: **Method 1:*** Hover the mouse arrow over the desktop shortcut icon and perform a rapid double-click with the left mouse button. **Method 2:** Left-click the Start Button at the bottom left corner, trace the list to locate the program profile name, and click it once.
4. **Why is it important to close programs properly?**
 - *Answer:* Closing applications correctly releases system memory, helps the computer run faster, ensures ongoing software tasks terminate without system glitches, and keeps the workflow screen clean for the next user.

Quiz – Desktop and Opening Programs (True or False)

1. **True**
2. **True**
3. **True**
4. **True**
5. **False** (*A digital folder is exclusively a container structure for computer files and system shortcuts*).

4. Teacher's Practical Diagnostic Checklist

Keep this structural checklist in mind during practice sessions to measure individual competency benchmarks:

- ☐ Can the learner independently trace the location of the Start Button without scanning the screen for more than five seconds?
- ☐ Does the learner understand how to target the exact boundary of the x control box when closing active frames?
- ☐ Are learners tracking multiple open programs along the base row of the Taskbar rather than launching duplicate instances of the same application?

Chapter 5: Practice Opening and Closing Programs

Lesson Overview & Pacing Guide

- **Total Recommended Time:** 2 Hours (1 hour for fundamental mouse mechanics and navigation styles, 1 hour for multi-tasking window management and lab ethics).
- **Target Audience:** Grade 7 learners. For some learners, this will be their first time handling a physical desktop mouse; others may be highly accustomed to touchscreens but struggle with the precise tactile coordination of double-clicking.
- **Contextual Focus:** Building deep muscle memory, physical hardware respect, and smooth interface transition habits before moving on to complex data entry.

1. Lesson Delivery Plans

Session 1: Mouse Coordination & Desktop Gateways (Sections 1, 2, 3 & 4)

- **Suggested Time:** 1 Hour
- **The "Hook":** Hold up a standard computer mouse. Ask the class: *"If you want to enter a classroom, do you kick the door once, or do you turn the handle and push? What happens if you knock too slowly?"* Explain that the computer screen has digital doors called **Icons**, and a precise double-click is the secret knock that commands them to open.
- **Core Concepts:** Double-click timing, Start Menu navigation pathways, and developing finger-muscle confidence.
- **Correcting the "Heavy Finger" Mistake:**

Classroom Observation: Beginners often press down with extreme physical force or hold the mouse button down too long during a click. This accidental drag-and-drop moves or renames icons instead of launching the software. Instruct learners to keep a light, relaxed wrist and snap their index finger quickly like a single tap on a desk.

Session 2: The Multi-Tasking Juggler — Taskbars and Exit Latches (Sections 5, 6, 7 & 8)

- **Suggested Time:** 1 Hour
- **Core Concepts:** Multi-window navigation via the Taskbar area, standard program closure sequences, and physical lab safety guidelines.
- **The "Impatient Clicker" Deterrent:**
 - *Addressing Common Failure Modes:* When a system processes slowly, learners tend to mash the left-click button 10 times in a row. This floods the CPU with commands, freezing the machine or launching 10 separate instances of the exact same application.
 - *The Rule of One-and-Wait:* Teach learners the "**Click and Count**" Habit: *Double-click firmly once, take your hand completely off the mouse, and count slowly to 3 while the system loads.*

2. Classroom Activities & Practical Lab Management

Practical Computer Activity (Class Activity)

- **Unplugged Alternative (If Power/Devices are Unavailable):** Draw a large Windows Desktop environment blueprint layout on the chalkboard, highlighting the **Taskbar** at the base and a few window frames. Have individual learners use a physical wooden block or paper cutout as a "mouse pointer" and tap the board to visually demonstrate exactly where they would position their cursor to switch windows or exit.
- **Live Lab Walkthrough Sequence:**

1.Initialize the Desktop Workspace:Launch Application 1.

Instruct learners to look at their desktop grid, position the cursor over the **Paint** icon, and double-click. Wait for the canvas window to completely cover the screen.

2.Layer the Interface Stack:Launch Application 2.

Instruct learners to click the **Start Button**, navigate through the software index to find the **Calculator**, and click it once. Point out that the Calculator window now rests directly on top of the Paint program.

3.Execute Taskbar Swapping:Window Management.

Direct the learners to move their attention down to the bottom strip of the screen (**Taskbar**). Instruct them to click the active Paint tab indicator once. Observe as the Paint canvas springs forward, hiding the Calculator behind it.

4.Orderly Program Teardown:Safe Application Exit.

Instruct them to target the top-right corner of the active screen window, locate the sharp "**X**" **button**, and left-click it once. Repeat this step for the remaining Calculator window until the clean desktop is visible again.

Bonus Activity: "Program Practice Challenge"

- **Assessment Observation Checklist:** Use this quick matrix while walking between lab stations to score the practical race:

Functional Benchmark Metric	Targeted Learner Evaluation Check
Tactile Stability	Does the physical mouse casing remain stationary on the mat while the learner double-clicks, or does it slip away horizontally?
Visual Track Efficiency	Can the learner immediately drop their eyes to the bottom taskbar ribbon to toggle screens without looking confused?
Hardware Care Compliance	Is the learner treating the peripherals gently? (Zero aggressive pounding on mouse buttons or clicking keys erratically).

3. Assessment Memorandums & Answer Keys

Assessment 1 – Classwork (Multiple Choice)

1. **B** — Double click
2. **C** — X
3. **C** — Taskbar (*Elaboration: The taskbar is our active control panel strip—running along the bottom edge of the operating system interface*).
4. **B** — Save their work
5. **C** — To improve computer skills

Assessment 2 – Practical / Written

Section A: Match the Columns

1. Taskbar $\rightarrow$ **A. Shows open programs**
2. Double Click $\rightarrow$ **B. Opens programs**
3. X Button $\rightarrow$ **C. Closes programs**

Section B: Short Questions

1. **Explain how to open a program from the desktop.**
 - *Answer:* Move the mouse arrow cleanly onto the selected shortcut graphic icon, then firmly click the left mouse button two times rapidly in succession (double-click).
2. **Why is it important to close programs properly?**
 - *Answer:* Closing applications cleanly stops them from wasting the computer's processing memory (RAM) and gives you a critical chance to save any updated data safely before closing down.
3. **Mention two mistakes learners should avoid in the computer lab.**
 - *Answer (Any two):* Hitting or banging the mouse on the table; clicking buttons frantically multiple times when the system is lagging; pulling electrical or data cables out of the ports; deleting files without explicit authorization.
4. **What is the purpose of the taskbar?**
 - *Answer:* The taskbar is the visual row located at the bottom of the screen layout that holds the Start button and displays every program currently active or running.

Quiz – Opening and Closing Programs (True or False)

1. **True**
2. **True**
3. **False** (*If a device becomes unresponsive, hitting it can cause permanent internal hardware damage. Always ask the teacher for help.*)
4. **True**
5. **True**

4. Teacher's Lab Hardware Safeguards

To keep your computer workspace operating smoothly over long class rotations, implement these operational habits:

- [] **The "Clean Desk" Perimeter:** Enforce a strict ban on all open water containers, juices, or snacks near the system tables to prevent catastrophic liquid spills onto the mice and keyboards.
- [] **System Reset Routine:** At the end of each class period, make it a standard rule for all learners to exit every open application window completely, returning their workstation screen back to a clean, blank desktop interface for the next incoming group

Chapter 6: File Management

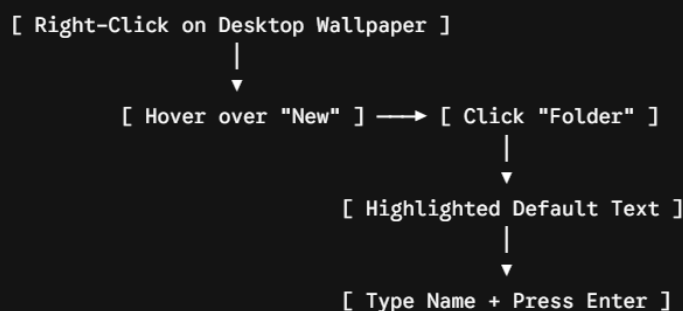
Lesson Overview & Pacing Guide

- **Total Recommended Time:** 3 to 4 Hours (1 hour classroom conceptualization, 2–3 hours intensive hands-on file creation, saving, and organizational drills).
- **Target Audience:** Grade 7 learners. This is one of the most critical conceptual leaps in early digital literacy: moving from interacting with pre-loaded apps to managing abstract digital data and storage hierarchies.
- **Contextual Focus:** High emphasis on teaching rigorous data safety, preventing accidental deletion of peers' work on shared school computers, and setting up systematic tracking frameworks.

1. Lesson Delivery Plans

Session 1: The Filing Cabinet Analogy & Directory Creation (Sections 1, 2, 3 & 4)

- **Suggested Time:** 1 Hour
- **The "Hook":** Bring a physical folder, a backpack, or a box packed with loose, unorganized papers to the front of the room. Spend a full minute frantically digging through the mess to find a specific piece of chalk or a particular document. Ask the class: *"What is wrong with how I am keeping my work here? How much time am I wasting just trying to find one thing?"*
- **The Concept:** Explain that a **File** is a single document (like a single test page), while a **Folder** is the cardboard file divider that keeps all the pages for one subject neatly together.
- **Physical Execution Blueprint:** Walk learners through the precise contextual menu sequence required to generate a directory box:



Session 2: The Rules of Naming & Safe Saving Protocols (Sections 5, 6 & 7)

- **Suggested Time:** 1 Hour
- **Core Concepts:** Structural nomenclature (naming rules), directory path selection, and executing the "Save As" function pathway.
- **The "Why" Behind Good Naming:** Explain that computers store thousands of blocks of data. If 40 learners all name their work `Document1`, finding their unique project next week will become a total nightmare.
- **Critical Teaching Distinction:** Clearly emphasize the difference between "Save" (updating changes to an existing, already named file) and "Save As" (naming a brand-new file and choosing exactly which folder it should live in for the first time).

Session 3: Deletion Boundaries & Shared Lab Responsibility (Sections 8, 9 & 10)

- **Suggested Time:** 1 Hour
- **Core Concepts:** System file purging, data recovery awareness, and ethical digital boundaries.
- **Shared Computer Safeguards:** In schools where multiple learners share a single computer profile, stress the absolute rule of digital property: *"You must never delete, rename, or open a folder belonging to another learner. Treat their digital folder exactly like their physical school locker or personal backpack."*

2. Classroom Activities & Practical Lab Management

Practical File Activity (Class Activity)

- **Live Walkthrough Implementation Steps:**

1. Instruct every learner to right-click on an empty space on their desktop, navigate to `New -> Folder`, and create a folder named exactly after their own surname and initials (e.g., `LEDWABA_LM`).
2. Open a basic tool like **Paint** or **Calculator** (or a simple text file). Have them scribble a fast drawing or type one sentence.
3. Guide them to click `File -> Save As`. This is the crucial step: *teach them to look at the navigation panel on the left side of the window, click on 'Desktop', locate their personal folder, double-click it, type the file name `Classwork1`, and click Save.*

Bonus Activity: "Organise My Work" Challenge

- **The Target Setup:** Learners must construct a clean organizational tree directly inside their personal root directory.
- **Grading & Evaluation Matrix:** Walk the room with a notebook and check for the following clean configuration criteria:

■ LEDWABA_LM (Main Student Folder)

```
|— ■ English
|   |— ■ Essay.txt
|— ■ Mathematics
|   |— ■ Maths_Activity.txt
|— ■ Natural_Sciences
|   |— ■ Project.txt
```

- **Common Error to Correct:** Watch for learners who type the subject names inside the file name box instead of creating separate folders (e.g., creating a file named `English Folder Essay`). Force them to practice making the distinct container first.

3. Assessment Memorandums & Answer Keys

Assessment 1 – Classwork (Multiple Choice)

1. **B** — Storing files

2. **C** — Store work on the computer (*Remind learners: Until you save your work, it only exists temporarily. If the electricity goes out or the computer turns off suddenly, unsaved work is permanently lost).*
3. **C** — Science Project
4. **B** — Delete
5. **C** — To stay organised

Assessment 2 – Written / Practical

Section A: Match the Columns

1. Folder $\rightarrow$ **A. Stores files**
2. Save $\rightarrow$ **B. Store work**
3. Delete $\rightarrow$ **C. Remove a file**

Section B: Short Questions

1. **Define a file.**
 - *Answer:* A file is a self-contained document, picture, video, song, or piece of information created and saved digitally on a computer.
2. **What is the purpose of a folder?**
 - *Answer:* A folder acts as a digital container used exclusively to group, store, and organize multiple files neatly by subject, type, or project.
3. **Mention two rules for naming files properly.**
 - *Answer (Any two):* Make the name clear and descriptive; connect it directly to the school subject or work being done; avoid vague or blank names like Untitled, ABC, or File1.
4. **Why should learners save their work regularly?**
 - *Answer:* To protect their schoolwork from being lost if there is a sudden power cut (load shedding), a technical glitch, or if the computer shuts down unexpectedly.

Quiz – File Management (True or False)

1. **True**
2. **False** (*Saving preserves and stores work securely on the computer).*

3. **True**
4. **False** (*Deleting another learner's work is an infraction of school lab rules and is highly irresponsible*).
5. **True**

4. Teacher's Practical Diagnostic Checklist

Before moving past this chapter, ensure every Grade 7 learner can comfortably answer "Yes" to these operational checkpoints:

- [] Can the learner independently create a folder from a blank desktop area without teacher intervention?
- [] Does the learner check *where* they are saving their file during the `Save As` window prompt, or do they just click save blindly?
- [] Do they understand how to use the backspace key to change the default text `New Folder` to a meaningful name immediately upon creation?

Chapter 7: Typing Skills and Introduction to Microsoft Word

Lesson Overview & Pacing Guide

- **Total Recommended Time:** 4 Hours (1 hour classroom demonstration/ergonomics setup, 3 hours hands-on laboratory application and keyboard drills).
- **Target Audience:** Grade 7 learners. At this stage, coordination transitions from single-finger pointing to multi-finger positional awareness on an alphanumeric layout.
- **Contextual Focus:** Tailored to maximize limited computer access through peer-review typing rotations, posture reinforcement, and practical, local school context examples (e.g., *Nong-Modikwa Primary School*).

1. Lesson Delivery Plans

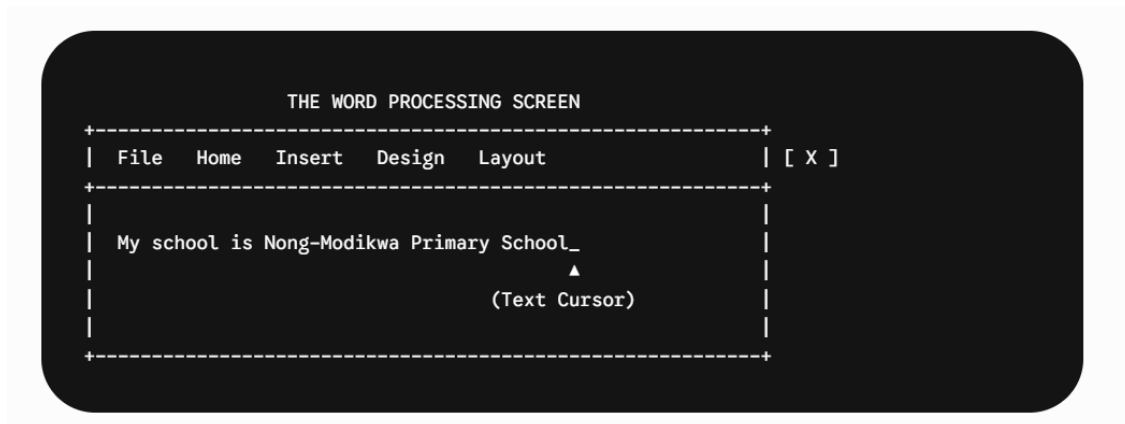
Session 1: Keyboard Anatomy & Finger Ergonomics (Sections 1, 2 & 3)

- **Suggested Time:** 1 Hour
- **The "Hook":** Show the class your two hands held open. Ask: *"If you try to play a musical instrument or catch a ball using only one finger, how easy is it?"* Explain that treating a keyboard like a single-finger typewriter makes working slow. Using both hands lets them type as fast as they speak.
- **Core Concepts:** Introduce functional clusters: Alphabet, Numbers, Space Bar, Enter, Backspace, and Shift.
- **Physical Correction (The "Pointer" Habit):** Watch out for the "hunt-and-peck" habit where learners use only their right index finger to strike every key. Force them to rest both left and right hands lightly on the left and right sides of the keyboard board framework.

Session 2: Launching Word & The Interface Matrix (Sections 5, 6 & 7)

- **Suggested Time:** 1 Hour
- **Core Concepts:** Opening a word processor, identifying the blinking text cursor, and executing sentence punctuation rules (Capital letters using the `Shift` key).

- **Visual Cue Guide:** Explain that the blinking vertical line on the screen is a digital pencil tip. Wherever that line sits, text will appear.



Session 3: Document Preservation & System Exit (Sections 4, 8, 9 & 10)

- **Suggested Time:** 2 Hours (Spread over two distinct lab blocks for drilling)
- **Core Concepts:** Navigating the file path directory dialogue during save operations, string syntax entry, and graceful program exits.
- **The Spacing Rule:** Grade 7 beginners often press the Space Bar multiple times between words. Teach a strict rhythmic rule: **One word, one thumb tap.**

2. Classroom Activities & Practical Lab Management

Practical Typing Activity (Class Activity)

- **Walkthrough Instruction Pattern:**
 - *Step 1:* Instruct learners to launch Microsoft Word via the desktop icon.
 - *Step 2:* Have them type their first name, then look at the board to check the next instruction.
 - *Step 3:* Guide them to hold down **Shift** while pressing the first letter of their school's name to ensure correct capitalization.
- **Classroom Management with Limited Workstations:** If learners are sharing computers (2 or 3 per machine), run a "Co-Pilot Rotation". One learner types the sentence while the second acts as the "Editor," checking for spelling on the paper text sheet. Swap roles every 10 minutes.

Bonus Activity: "Typing Challenge"

- **Target Text:** “*My school uses technology for learning.*”
- **Common Mistakes to Flag During Assessment:**
 - *Missing Caps:* Typing "my school" instead of "My school". (Remind them to use the `Shift` key).
 - *Double Spaces:* Checking for massive blank gaps between words.
 - *Period Omissions:* Forgetting the full stop at the absolute tail end of the sentence block.

3. Assessment Memorandums & Answer Keys

Assessment 1 – Classwork (Multiple Choice)

1. **B** — Keyboard
2. **C** — Space Bar
3. **C** — Microsoft Word
4. **B** — Backspace (*Remind learners: Backspace deletes backward to the left, like an eraser*).
5. **B** — To improve computer literacy

Assessment 2 – Practical / Written

Section A: Match the Columns

1. Space Bar $\rightarrow$ **A. Creates spaces**
2. Enter Key $\rightarrow$ **B. Moves to next line**
3. Backspace $\rightarrow$ **C. Deletes letters**

Section B: Short Questions

1. **What is typing?**
 - *Answer:* Typing is the process of entering letters, numbers, symbols, and punctuation marks into a computer device using a keyboard layout.
2. **Mention two uses of Microsoft Word.**
 - *Answer (Any two):* Typing text documents, writing formal letters, creating school homework assignments, or designing basic class project pages.

3. **Why is it important to save documents?**

- *Answer:* To ensure your typed text is preserved on the computer storage disk, preventing loss of work when the program closes or if the school's electricity goes off.

4. **Explain the function of the Enter key.**

- *Answer:* The Enter key acts as a line break command that immediately shifts the blinking text cursor down to start a brand new sentence line below.

Quiz – Typing and Microsoft Word (True or False)

1. **True**
2. **True**
3. **False** (*Keyboards are fragile electronic switches; type gently with light finger taps*).
4. **True**
5. **True**

4. Teacher's Lab Diagnostics Grid

Use this simple diagnostic criteria profile during live practical blocks to measure learner muscle memory growth:

- **Posture Metric:** Is the learner slouching or leaning their chin heavily into their palm? (Correct them to sit straight up to protect their spinal column alignment).
- **Input Force Check:** Are you hearing loud, violent slapping noises from the keyboard switches? (Intervene and demonstrate a soft, smooth typing stroke).
- **Visual Direction:** Are they staring blankly at their fingers hunting for keys, or tracking the letters appearing live on the monitor display matrix? Encourage them to slowly look up at the screen more often.

Chapter 8: Introduction to Microsoft Excel and PowerPoint

Lesson Overview & Pacing Guide

- **Total Recommended Time:** 4 Hours (split into 2 hours for the Excel module and 2 hours for the PowerPoint module).
- **Target Audience:** Grade 7 learners. At this stage, learners are expanding their conceptual understanding of software applications, moving from continuous text (Word) to structured grids (Excel) and visual layouts (PowerPoint).
- **Contextual Focus:** Practical instructional strategies designed to demystify grid navigation and slide creation, offering clear classroom analogies and local context references (such as *Nong-Modikwa Primary School*).

1. Lesson Delivery Plans: Module A (Excel)

Session 1: The Grid Matrix — Rows, Columns, and Cells (Sections 1, 2 & 3)

- **Suggested Time:** 1 Hour
- **The "Hook":** Draw a simple cross-and-circle (tic-tac-toe) grid or a small calendar structure on the chalkboard. Ask the class: *"If I ask you to tell me exactly where this specific number or cross is, how do you explain it without pointing your finger?"* Introduce the concept of matching a vertical letter with a horizontal number.
- **Core Concepts:** Introduce the spreadsheet anatomy: Workbook, Worksheet, Rows (\$1, 2, 3\dots\$), Columns (\$A, B, C\dots\$), and the individual intersections called **Cells**.
- **Addressing Common Confusion:** Beginners often misread cell addresses by stating the row number before the column letter (e.g., calling cell \$A1\$ "1A"). Run a quick 5-minute vocal drill pointing to different board grid coordinate intersections to reinforce the **Letter-First Rule**.

Session 2: Data Capture and Grid Boundaries (Sections 4 & 5)

- **Suggested Time:** 1 Hour

- **Core Concepts:** Entering data variables (Strings/Names and Integers/Marks) into an organized workspace data matrix.
- **Keyboard Control Mechanics:** Teach learners to use the **Arrow Keys** (`\leftarrow`, `\uparrow`, `\downarrow`, `\rightarrow`) or the **Enter Key** to move between cells gracefully. Beginners often tend to double-click with the mouse every single time they want to move to an adjacent box, which slows down data entry significantly.

2. Lesson Delivery Plans: Module B (PowerPoint)

Session 3: Digital Storytelling & Slide Blueprints (Sections 6, 7 & 8)

- **Suggested Time:** 1 Hour
- **The "Hook":** Hold up a large poster board or flashcard containing a bold heading and a single picture. Ask the class: *"If you are standing at the back of the classroom, can you read a whole page of tiny textbook text, or is a bold headline with a clear picture easier to see?"* Explain that PowerPoint is built to display bold ideas clearly to an entire audience.
- **Core Concepts:** Presentations, Slide structures, and basic layout blocks.
- **The "One-Page" Concept:** Explicitly differentiate a **Slide** from a **Word Document Page**. Explain that a slide is a self-contained visual frame that does not scroll infinitely down like a written text essay.

Session 4: Slide Composition & Global Execution (Sections 9, 10, 11, 12 & 13)

- **Suggested Time:** 1 Hour
- **Core Concepts:** Title entry placeholder initialization, content body configuration, dual-program file saving mechanics, and orderly environment teardowns.
- **The "Short Information" Rule:** Grade 7 learners often try to copy entire paragraphs of raw textbook data directly onto a single presentation slide frame. Enforce the **Rule of Bullet Points:** *Keep sentences short, punchy, and limited to key facts.*

3. Classroom Activities & Practical Lab Management

Practical Application Blocks

- **Excel Lab Protocol Walkthrough:**

1. Guide learners to open Excel and locate cell **A1**. Have them type the label Name.
2. Guide them to move right to cell **B1** and type the label Mark.
3. Instruct them to populate rows 2 and 3 using the example data (Thabo \$ \rightarrow\$ 75, Lerato \$ \rightarrow\$ 80).

- **PowerPoint Lab Protocol Walkthrough:**

1. Instruct learners to launch PowerPoint and select a "Blank Presentation".
2. Show them how to click inside the box that reads "*Click to add title*" and type My School.
3. Instruct them to click inside the subtitle text boundary box underneath and enter the exact profile text line: "*Nong-Modikwa Primary School is located in Limpopo.*"

Bonus Activity: "Mini Presentation Challenge"

- **Assessment Observation Checklist:** Walk down lab rows during this challenge phase to award operational points based on these specific functional benchmarks:

Milestone Indicator	Assessment Focus Criteria
Grid Target Accuracy	Is the learner typing their name into a distinct, clean Excel cell without overwriting header variables?
Placeholder Control	In PowerPoint, did the learner click inside the correct boundary box lines to separate the title heading text from the body info text?
Directory	Did the learner name their files clearly (e.g., Thabo Excel Task and Thabo Slide) and route them securely inside their personal student

Milestone Indicator	Assessment Focus Criteria
Preservation	folder?

4. Assessment Memorandums & Answer Keys

Assessment 1 – Classwork (Multiple Choice)

1. **C** — PowerPoint
2. **A** — Excel (*Elaboration: Excel is our digital ledger sheet—built specifically to handle math columns, data sets, and grids.*)
3. **B** — Page in a presentation
4. **B** — Box used to enter information
5. **A** They improve digital skills

Assessment 2 – Practical / Written

Section A: Match the Columns

1. Excel $\rightarrow$ **A. Used for tables**
2. PowerPoint $\rightarrow$ **B. Used for presentations**
3. Slide $\rightarrow$ **C. Page in a presentation**

Section B: Short Questions

1. **What is Microsoft Excel used for?**
 - *Answer:* Excel is used to systematically organize numeric data, create tables, handle information sheets, and perform mathematical calculation steps.
2. **What is Microsoft PowerPoint used for?**
 - *Answer:* PowerPoint is used to design presentation decks, share information visually, present school assignments, and display data summaries using structured slides.

3. **Explain what a cell is in Excel.**

- *Answer:* A cell is an individual box formed where a vertical column (letter) and a horizontal row (number) cross each other. It is the fundamental space where information is typed.

4. **Why should learners save their work regularly?**

- *Answer:* To ensure their data is safely stored on the computer's hard drive, preventing any loss of work if a power failure occurs or if the software closes unexpectedly.

Quiz – Excel and PowerPoint (True or False)

1. **True**
2. **True**
3. **True**
4. **False** (*Always execute a file save before quitting an application tool*).
5. **True**

5. Teacher's Lab Resource Safeguards

When leading introductory spreadsheet and presentation modules in communal environments, ensure these system boundaries remain active:

- [] **Software Version Parity:** Microsoft Office interfaces can visually vary slightly across different software versions (e.g., Office 2016 vs. newer builds). Locate the "File" and "Save" zones on your lab's specific layout interface before class so you can point to them quickly if a learner gets stuck.
- [] **Data Modification Restrictions:** Ensure learners do not accidentally alter layout properties or default sheet settings. If a learner accidentally hides the Excel formula bar or minimizes the ribbon menu workspace, use the display menu shortcuts to reset the screen framework immediately.

Chapter 9: Introduction to the Internet

Lesson Overview & Pacing Guide

- **Total Recommended Time:** 3 to 4 Hours (1 hour classroom conceptualization/unplugged activity, 2 to 3 hours of supervised online laboratory practice).
- **Target Audience:** Grade 7 learners. At this age, learners are increasingly self-directed but highly vulnerable to digital distractions, misinformation, and online safety risks.
- **Contextual Focus:** High emphasis on critical thinking, media literacy, and safety parameters—tailored specifically to bridge the resource gap for schools navigating internet connectivity for the first time.

1. Lesson Delivery Plans

Session 1: Mapping the Global Web (Sections 1, 2, 3 & 7)

- **Suggested Time:** 1 Hour
- **The "Hook":** Tie a piece of string to your desk. Hand the ball of string to a learner, ask them to wrap it once around their wrist, and pass it to a classmate across the room. Repeat this until a visible "web" links dozens of learners. Ask the class: *"If I whisper a secret to the first person holding the string, how many people can it reach if we pass it along the lines?"* Explain that the **Internet** is exactly like this—an invisible web of strings connecting computers globally.
- **Core Concepts:** The global network matrix, device diversity, and the profound equalizer effect of the internet in closing the gap between rural and urban school environments.

Session 2: Navigating the Web — Browsers vs. Search Engines (Sections 4, 5 & 6)

- **Suggested Time:** 1 Hour

- **Core Concepts:** Disentangling the structural differences between software applications (**Browsers**) and web-based data indexes (**Search Engines**).
- **Addressing Common Confusion:** Grade 7 learners almost universally conflate *Google Chrome* (the browser application) with *Google Search* (the website engine).
- **Clarification Strategy:** Use the **Vehicle and Destination Analogy**: "A Web Browser (like Chrome or Edge) is the car you climb into to travel on the digital road. A Website is the house you visit. A Search Engine (like Google or Bing) is the map inside the car that helps you look up directions when you don't know the physical street address."

[THE WEB BROWSER] =====> [THE SEARCH ENGINE] =====> [THE DESTINATION]
 (The Car: Google Chrome) (The Map: www.google.com) (The House: Wikipedia)

Session

3: Digital Citizenship, Safety Barriers, and Discernment (Sections 8, 9, 10 & 11)

- **Suggested Time:** 1 Hour
- **Core Concepts:** Cyberbullying deterrence, password privacy dynamics, and vetting online credibility (identifying false information/scams).
- **Critical Verification Rule:** Teach learners the **Reality Check Rule**. Explain that just because a statement appears on a website layout, that does not make it a factual truth. Anyone around the world can publish text online. Emphasize checking multiple educational sources before accepting data for a school project.

2. Classroom Activities & Practical Lab Management

Internet Discussion Activity (Class Activity)

- **Forming Groups:** Organize the class into working teams of 4 to 5.
- **Teacher Facilitation Blueprint:** Move between clusters to prompt active problem solving:

- *For Question 1 (Rural Impact):* Prompt them with ideas about digital libraries.
"If our school library does not have a physical book about space exploration, how does an internet connection solve that problem in five seconds?"
- *For Question 2 (Dangers):* Enforce boundaries around stranger interactions.
 Remind them that profile pictures can easily be faked by malicious actors.

Bonus Activity: "Educational Search Challenge"

- **Live Lab Implementation Protocol:** If your school has live internet connectivity, monitor search strings directly. If data bandwidth is highly constrained, load a single search interface on a projector screen and run this as a unified class exercise.
- **Specific Search Strings to Drill:** Teach learners how to type specific keywords rather than long conversational questions.
 - *Instead of:* "Can you please tell me what are all the different provinces that we have inside South Africa?"
 - *Teach them to type:* South African provinces **or** South Africa wild animals
- **Operational Monitoring:** Ensure no learner navigates away from the assigned research tabs to look up gaming portals or entertainment videos during active lesson blocks.

3. Assessment Memorandums & Answer Keys

Assessment 1 – Classwork (Multiple Choice)

1. **B** — A worldwide network connecting devices
2. **D** — All of the above
3. **B** — Browser
4. **A** — Google
5. **A** — It helps learners access information

Assessment 2 – Written / Practical

Section A: Match the Columns

1. Browser $\rightarrow$ **A. Used to open websites**
2. Website $\rightarrow$ **B. Pages found online**
3. Search Engine $\rightarrow$ **C. Helps find information**

Section B: Short Questions

1. Define the Internet.

- *Answer:* The Internet is a massive, worldwide network system that links computers, tablets, smartphones, and other hardware components across countries to share data and communicate.

2. Mention two devices used to access the Internet.

- *Answer (Any two):* Computers (Desktop/Laptop), Smartphones, Tablets.

3. Explain one educational use of the Internet.

- *Answer:* Learners can use it to research information for class projects, watch educational instructional videos, read ebooks, or access digital learning portals.

4. Mention two Internet safety rules.

- *Answer (Any two):* Never share your secret account passwords; never interact with or give information to strangers online; do not visit untrusted or non-educational web portals; immediately report strange or uncomfortable pop-ups to a teacher or parent.

Quiz – Introduction to the Internet (True or False)

1. **True**
2. **True**
3. **False** (*Passwords must remain completely confidential to secure identity data*).
4. **True**
5. **True**

4. Teacher's Lab Connection & Safety Checklist

Before green-lighting any active web-browsing lab module, ensure you verify these structural guardrails:

- [] **DNS/Filtering Gateways:** Are standard network restrictions or parental filters enabled on the lab router or browser configurations to block adult or harmful content?
- [] **The "Hands-Off" Emergency Anchor:** Establish a universal verbal drop command (e.g., *"Screens off, hands on shoulders"*). If an inappropriate popup advertisement displays on any terminal, this command allows you to control the room immediately while resetting the affected device.
- [] **Bandwidth Management:** Remind learners to avoid opening multiple high-definition video streaming tabs simultaneously, as this can degrade connection speeds for the entire classroom block.

Chapter 10: Digital Citizenship and Online Safety

Lesson Overview & Pacing Guide

- **Total Recommended Time:** 3 to 4 Hours (divided into 2 hours for conceptual classroom discussion/poster creation and 1.5 to 2 hours for interactive case-study analysis and practical password configuration).
- **Target Audience:** Grade 7 learners. At this development stage, learners are rapidly entering social spaces online (WhatsApp, TikTok) but lack the cognitive maturity to fully foresee the long-term consequences of their digital footprints.
- **Contextual Focus:** Deep emphasis on accountability, empathy, data boundary protection, and practical protection protocols.

1. Lesson Delivery Plans

Session 1: The Digital Footprint & Personal Boundaries (Sections 1, 2, 4 & 5)

- **Suggested Time:** 1.5 Hours
- **The "Hook":** Walk into the classroom with a permanent marker and a white piece of paper. Write a message on the paper, then crumple it up and throw it away. Next, write the same message on the chalkboard. Ask the class: *"If I want to erase this message completely so no one ever knows I wrote it, which one is easier to completely destroy? The paper or the board?"*
- Explain that the Internet is like a chalkboard visible to the whole world—once you type or post something private, even if you try to delete it, someone else has likely copied it.
- **Core Concepts:** Digital citizenship parameters, defining PII (Personally Identifiable Information), and constructing account locks.
- **The "Toothpaste" Analogy for Data Privacy:**

Classroom Analogy: Explain that sharing personal information online (your phone number, school location, or private pictures) is exactly like squeezing toothpaste out of a tube. It is incredibly easy to push out, but once it is out in

the open, it is physically impossible to gather it all back up and put it cleanly back into the tube.

Session 2: Cyberbullying Mechanics & Platform Responsibility (Sections 3, 6, 8, 9, 11 & 12)

- **Suggested Time:** 1.5 Hours
- **Core Concepts:** Identifying and disrupting cyberbullying patterns, safe vs. unsafe web spaces, and building ethical communication streams on social media networks.
- **Addressing Common Misconceptions:** Grade 7 learners frequently believe that typing a mean comment behind a fake profile or forward-sharing an embarrassing picture of a classmate "isn't real bullying" because they aren't physically fighting.
- **Teacher Guidance:** Enforce the **Keyboard Empathy Metric**: *"If you would not stand up in front of the entire assembly and say those exact words directly into a microphone to someone's face, do not type it into a phone screen."*

2. Classroom Activities & Practical Lab Management

Group Discussion Activity (Class Activity)

- **Teacher Facilitation Guide:** Group learners into teams of 4. Write these three functional real-world scenarios on the board for them to analyze:

[SCENARIO 1] A website pop-up window says you have won a free smartphone, but it asks for your personal information.
[SCENARIO 2] An unknown profile sends you a friend request on social media claiming to be a classmate.
[SCENARIO 3] You notice a group chat where kids are making fun of a classmate who is new to school.

Bonus Activity: "Online Safety Poster" Challenge

- **Resource Requirements:** Large cardstocks/poster sheets, color markers, and blank writing paper.
- **Classroom Management Plan:** If drawing materials are limited, learners can create clean, typographic billboard layouts using text formatting blocks.

- **Assessment Observation Checklist:** Evaluate student teams based on the following specific structural indicators:

Score Criteria	Target Evaluation Standard
Clarity of Rule	Does the poster display a clear, actionable directive (e.g., "Never share your password" instead of just "Be safe")?
Visual Hierarchy	Is the primary safety warning message written large enough to be easily scannable from across the computer room floor?
Fact Alignment	Does the text accurately outline the specific dangers of identity exposure or social media misuse without containing misleading information?

3. Assessment Memorandums & Answer Keys

Assessment 1 – Classwork (Multiple Choice)

1. **B** — Responsible use of technology
2. **D** — All of the above (*Elaboration: Names, addresses, and phone numbers are all critical pieces of identity data that malicious entities look to exploit.*)
3. **B** — Bullying using technology
4. **C** — LearnSafe7 (*Elaboration: This string mixes text letters with numerical figures, making it significantly more secure than sequential patterns like 12345.*)
5. **A** — To stay safe online

Assessment 2 – Written / Practical

Section A: Match the Columns

1. Password → **A. Protects accounts**
2. Cyberbullying → **B. Bullying using technology**
3. Digital Citizenship → **C. Responsible use of technology**

Section B: Short Questions

1. **Define digital citizenship.**
 - *Answer:* Digital citizenship means using computer tech, devices, and internet networks in a way that is consistently safe, legally responsible, and mutually respectful to other users.
2. **Mention two online safety rules.**
 - *Answer (Any two):* Never share your secret passwords with anyone; never give out your private personal information (like your home address or school location) to strangers; browse only safe educational platforms; tell an adult or teacher if you encounter something weird online.
3. **What is cyberbullying?**
 - *Answer:* Cyberbullying is using digital platforms, internet systems, or mobile communication devices to deliberately hurt, insult, threaten, or embarrass another person.
4. **Why should learners protect personal information?**
 - *Answer:* Protecting private personal details helps stop online scams, prevents malicious strangers from tracing your physical location, and protects users from identity theft.

Quiz – Digital Citizenship and Online Safety (True or False)

1. **False** (*Passwords must always remain completely secret and confidential*).
2. **True**
3. **True**
4. **True**
5. **True**

4. Teacher's Security Checklist for Social Platforms

When managing digital workspace safety with Grade 7 groups, monitor these system vulnerabilities actively:

- [] **Local Network Isolation:** Ensure local browser options do not have "Auto-fill passwords" or "Remember my login information" permanently activated on public laboratory machines.
- [] **Reporting Protocols:** Explicitly show learners where the "Block" and "Report Abuse" buttons are located on the specific apps or search tools being utilized.
- [] **Incident Escalation Path:** Have a clear, non-punitive path ready for when a student makes an error. If a learner admits they accidentally gave out a password or personal info online, keep calm and immediately help them alter the account access strings to keep them safe.

Chapter 11: Educational Use of Smartphones

Lesson Overview & Pacing Guide

- **Total Recommended Time:** 3 Hours (1 hour for core concepts and app anatomy, 1 hour for practical research techniques, 1 hour for digital responsibility and the class discussion challenge).
- **Target Audience:** Grade 7 learners. At this stage, many learners have access to a smartphone at home (or via parents) but primarily view it as an entertainment hub (gaming, social video clips).
- **Contextual Focus:** Shifting the learner's mindset from *passive consumer* to *active scholar*. This lesson heavily emphasizes leverage points for resource-constrained environments where smartphones serve as the primary (and often only) gateway to the digital world.

1. Lesson Delivery Plans

Session 1: The Pocket-Sized Computer (Sections 1, 2, 3 & 11)

- **Suggested Time:** 1 Hour
- **The "Hook":** Hold a standard smartphone in one hand and a textbook or pocket dictionary in the other. Ask the class: *"If I want to find the meaning of a word, see a map of the solar system, and send a message to a teacher in another town, how many different objects do I need to carry?"* Show the phone and explain: *"This isn't just a telephone anymore; it is a full library, a calculator, and a classroom that fits right inside your uniform pocket."*
- **Core Concepts:** Hardware convergence, application ecosystems (Apps), and using mobile tech to completely bypass the lack of physical computer labs or paper libraries in rural environments.

Session 2: Mobile Research & Communications (Sections 4, 5 & 9)

- **Suggested Time:** 1 Hour

- **Core Concepts:** Formulating structured search queries on a mobile screen, utilizing specialized tools (dictionaries, calculators), and establishing professional student-teacher communication channels.
- **The "Notification Trap" Danger:**

Classroom Focus: Address the issue of cognitive distraction. When a smartphone is unlocked for schoolwork, incoming text notifications or game alerts instantly derail focus. Teach learners the **"Deep Work" Habit:** *When studying or researching on a phone, turn off non-educational notifications or switch the device to "Do Not Disturb" mode.*

Session 3: Digital Boundaries & Mobile Safety (Sections 6, 7, 10 & Safety Reminders)

- **Suggested Time:** 1 Hour
- **Core Concepts:** Protecting account access lines, mitigating cyberbullying on messaging applications, managing physical device care, and tracking screen time limits.
- **The Physical Safety Protocol:** Remind learners that smartphone safety isn't just about what happens on the screen. It also includes protecting the hardware—keeping it out of direct sunlight, avoiding moisture, and never leaving it unattended where it could be stolen.

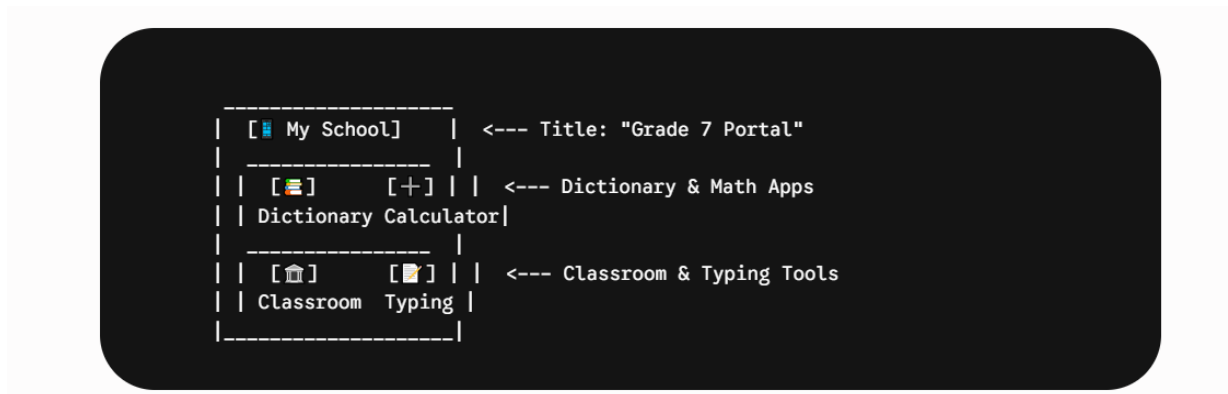
2. Classroom Activities & Practical Lab Management

Group Discussion Activity (Class Activity)

- **Teacher Facilitation Guide:** Divide the class into small working circles. Use the local environment as a case study backdrop.
 - *Prompting Strategy:* Ask the groups: *"Think about our community. If a learner here wants to practice their English vocabulary or get extra math help after school hours, how exactly can a smartphone bridge that gap when the school gates are locked?"*
 - **Presentation Phase:** Give each group 2 minutes to present their top app idea or safety rule to the blackboard.

Bonus Activity: "Educational App Challenge"

- **Implementation Guide (Unplugged or Live):** If devices are not allowed in class or connectivity is down, draw an empty smartphone screen outline on the chalkboard. Have learners come up and draw or write down icons of "Educational Apps" they would install, explaining what each app does.



3. Assessment Memorandums & Answer Keys

Assessment 1 – Classwork (Multiple Choice)

1. **B** — A mobile device with advanced features
2. **D** — All of the above (*Elaboration: Google Classroom, calculators, and digital dictionaries are all software applications designed to build academic capacity*).
3. **D** — All of the above
4. **C** — Using apps for learning
5. **A** — They improve access to information (*Elaboration: For communities with minimal library infrastructure, mobile internet breaks down geographic barriers instantly*).

Assessment 2 – Written / Practical

Section A: Match the Columns

1. Smartphone $\rightarrow$ **A. Mobile learning device**
2. App $\rightarrow$ **B. Program used on a phone**
3. Research $\rightarrow$ **C. Searching for information**

Section B: Short Questions

1. Define a smartphone.

- *Answer:* A smartphone is a portable, mobile phone that can connect to the internet, run software applications, take photos, and process data like a miniature computer.

2. Mention two educational uses of smartphones.

- *Answer (Any two):* Searching for project information online, viewing educational videos, reading textbooks digitally, using calculator or dictionary applications, and communicating with teachers.

3. Explain responsible smartphone use.

- *Answer:* It means using the device intentionally for learning and development, keeping screen time balanced, respecting others when messaging, and following classroom device rules.

4. Mention two smartphone safety rules.

- *Answer (Any two):* Never share your account passwords or personal security pins; do not chat with unknown individuals online; avoid unsafe or adult web domains; always consult a trusted adult or teacher if you encounter suspicious links.

Quiz – Educational Use of Smartphones (True or False)

1. **True**
2. **True**
3. **False** (*Passcodes, pins, and passwords must be kept completely private to secure personal accounts*).
4. **True**
5. **True**

4. Teacher's Mobile Management Guardrails

When integrating or discussing mobile devices in your instructional space, maintain these baseline classroom boundaries:

- [] **The "Screen Down" Mandate:** Establish an explicit structural cue. When you are speaking or explaining a concept on the board, instruct learners to turn their phones face-down on their desks so the screen lights cannot distract them.
- [] **Data Consumption Awareness:** Remind learners that video-heavy research runs through cellular data balances quickly. Teach them to prioritize text-based articles, compressed images, and offline-capable educational tools when working on limited data budgets.
- [] **Device Equity Management:** Not every learner will own or have access to a top-tier smartphone. When conducting mobile-focused activities or challenges, group learners deliberately so that those without personal devices are fully integrated into a team and can share access equitably.

Chapter 12: Introduction to AI and Smart Technology

Lesson Overview & Pacing Guide

- **Total Recommended Time:** 3 Hours (1 hour for core definitions and everyday examples, 1 hour for practical sector applications like agriculture and education, 1 hour for ethics, digital responsibility, and class presentations).
- **Target Audience:** Grade 7 learners. At this baseline level, learners frequently interact with AI algorithms (video feeds, text predictive engines) but perceive them as "magic" rather than human-coded data prediction loops.
- **Contextual Focus:** Demystifying AI systems into clear data patterns while highlighting practical, ground-level benefits for rural infrastructure, local farming precision, and critical thinking development.

1. Lesson Delivery Plans

Session 1: Demystifying the "Thinking" Machine (Sections 1, 2, 3 & 5)

- **Suggested Time:** 1 Hour
- **The "Hook":** Open your phone's messaging application or type on the chalkboard. Write: *"Good morning class, today we are going to learn about..."* and stop. Ask the class: *"When you type on a phone, how does the keyboard predict the exact next word you want to say before you even click the letters?"*
- Explain that the phone isn't reading minds; it is using **Artificial Intelligence (AI)** to look at your past habits and make an educated guess.
- **Core Concepts:** Distinguishing human consciousness from machine pattern matching; identifying automated smart hardware.
- **The "Tricked Machine" Reality Check:**

Classroom Guidance: Grade 7 learners often think AI is alive or knows everything. Explicitly clarify that AI only knows what humans have taught it through massive data sheets. If a human inputs wrong or biased information into an AI system, the machine will output those exact same errors.

Session 2: AI Across Sectors — Farming, Health, and Classrooms (Sections 4, 6, 7 & 8)

- **Suggested Time:** 1 Hour
- **Core Concepts:** Practical integration of smart technology across infrastructure networks (GPS, automated water conservation, medical diagnostic assistance).
- **Rural Connection Strategy:** Focus heavily on **Section 7 (Agriculture)**. Show learners how local farming relies on unpredictable weather elements. Explain that smart sensors placed in crop soil can calculate exact moisture percentages and send a direct warning message to a farmer's smartphone when the soil drops below a certain level. This saves water resources and prevents crop failure.

Session 3: Ethical Boundaries & The Plagiarism Trap (Sections 10, 11, 12 & Safety Reminders)

- **Suggested Time:** 1 Hour
- **Core Concepts:** Verifying data accuracy, avoiding total technological dependence, and maintaining academic honesty.
- **The "Bicycle vs. Car" Analogy for Brainpower:**
 - *Analogy Blueprint:* Tell learners that using AI tools for schoolwork should be like riding a bicycle—it helps your muscles move faster and get further under your own power. It should *not* be like sitting passively in a car where an engine does 100% of the work while your legs do nothing. If you let an AI write your school paragraphs for you, your brain loses its critical thinking muscles.

2. Classroom Activities & Practical Lab Management

Group Discussion Activity (Class Activity)

- **Teacher Facilitation Guide:** Divide the classroom into manageable groups. Pose this local problem-solving question to guide their notes:

- *The Prompt: "If our local library or school has limited copies of specialized science textbooks, how can a teacher use an AI translation or summarization application to create custom worksheets for our class instantly?"*
- **Monitoring Focus:** Ensure learners don't just focus on the fun parts of AI (like video filters). Guide them back to identifying its impact on resource equity.

Bonus Activity: "Smart Technology Around Us" Challenge

- **Implementation Map:** Create a simple three-column comparison tracker on the chalkboard. Have student representatives walk up and sort everyday items based on their structural characteristics:

Traditional Object (Manual)	Advanced Object (Digital)	Smart Object (AI/Automated)
Hand broom / Grass broom	Standard plug-in vacuum	Robotic vacuum cleaner that maps the room
Paper map booklet	Standard electronic digital clock	GPS phone map that recalculates around traffic jams
Handheld paper fan	Battery-powered desk fan	Smart air conditioner that changes speed by sensing people

3. Assessment Memorandums & Answer Keys

Assessment 1 – Classwork (Multiple Choice)

1. **B** — Artificial Intelligence

2. **D** — All of the above
3. **D** — All of the above (*Elaboration: Voice assistants, GPS routing paths, and YouTube video recommendations all run on predictive mathematical logic engines*).
4. **D** — All of the above
5. **A** — To use technology safely (*Elaboration: Responsible use ensures we maintain data integrity and don't blindly trust unverified machine assertions*).

Assessment 2 – Written / Practical

Section A: Match the Columns

1. AI $\rightarrow$ **A. Technology that learns**
2. GPS $\rightarrow$ **B. Navigation system**
3. Smart Technology $\rightarrow$ **C. Advanced digital devices**

Section B: Short Questions

1. **Define Artificial Intelligence.**
 - *Answer:* Artificial Intelligence (AI) is a branch of computer science that creates software systems and machines capable of processing data, recognizing patterns, learning from examples, and making analytical decisions similar to human logical reasoning.
2. **Mention two examples of smart technology.**
 - *Answer (Any two):* Smartphones, Smart TVs, Smartwatches, voice assistants, automated agricultural sensors, robotic machinery.
3. **Explain one educational use of AI.**
 - *Answer:* AI can act as a personal tutoring tool by giving instant math practice problems, translating scientific terms between languages, or helping learners search through massive data archives quickly.
4. **Why should learners use AI responsibly?**
 - *Answer:* To ensure they are actually learning how to think for themselves rather than letting a machine do their homework, and to avoid sharing unverified false information generated online.

Quiz – Introduction to AI and Smart Technology (True or False)

1. **True**
2. **True**
3. **True**
4. **False** (*AI applications must always be used with clear accountability, caution, and strict responsibility*).
5. **True**

4. Teacher's AI Safeguards & Verification Checklist

When assigning tasks that may involve generative text patterns or automated assistance, monitor these instructional checkpoints:

- [] **The Source Verification Rule:** Implement a strict rule for all written assignments: *Any fact provided by an AI suggestion must be double-checked against an official textbook or confirmed by an independent search engine link.*
- [] **Plagiarism Boundary Control:** Inspect student writing style shifts. If a Grade 7 learner suddenly hands in an essay containing complex, high-level university vocabulary, use it as a gentle teaching moment to explain the boundaries of authentic personal voice versus copying AI output.
- [] **Data Footprint Privacy:** Explicitly warn the class never to feed their private personal information, account passwords, home addresses, or school identification data into online public AI prompt boxes

GLOSSARY

Artificial Intelligence (AI) – Technology that enables computers and machines to perform tasks that normally require human intelligence.

Browser – A software application used to access and view websites on the Internet.

Click – Pressing a mouse button once.

Computer – An electronic device that receives, processes, stores, and outputs information.

CPU (Central Processing Unit) – The main part of a computer that processes instructions and controls operations; often called the "brain" of the computer.

Cursor – A blinking line or pointer that shows where text or actions will appear on the screen.

Cyberbullying – Using digital technology to harass, threaten, or harm another person.

Data – Facts, numbers, text, or information entered into a computer.

Desktop – The main screen displayed when a computer starts, containing icons, files, and folders.

Digital Citizenship – Responsible, safe, and respectful use of digital technology and the Internet.

Digital Literacy – The ability to use computers, digital devices, and technology effectively.

Document – A file created using word processing software such as Microsoft Word.

Download – The process of transferring information from the Internet to a computer or device.

Email – Electronic messages sent and received through the Internet.

Excel – A spreadsheet program used for organising, calculating, and analysing data.

File – A collection of information stored on a computer.

File Management – The process of creating, saving, organising, moving, and deleting files and folders.

Folder – A container used to organise files on a computer.

Google – A popular search engine used to find information on the Internet.

Hardware – The physical parts of a computer that can be seen and touched.

Icon – A small picture on the screen representing a program, file, or folder.

Information – Processed data that has meaning and can be used for decision-making.

Input Device – Hardware used to enter data into a computer, such as a keyboard or mouse.

Internet – A worldwide network that connects computers and allows users to share information.

Keyboard – An input device used for typing letters, numbers, and symbols.

Laptop – A portable computer that can operate using a battery.

Link (Hyperlink) – A connection that takes a user from one webpage or document to another.

Login – The process of entering a username and password to access a system.

Monitor – The screen that displays information from a computer.

Mouse – An input device used to move the pointer and select items on a computer screen.

Online Safety – Practices that help users stay safe while using the Internet and digital devices.

Operating System – The main software that manages computer hardware and software resources.

Password – A secret word or combination of characters used to protect accounts and information.

PowerPoint – Presentation software used to create slideshows containing text, images, and multimedia.

Printer – A device that produces paper copies of digital documents and images.

Program – Software designed to perform specific tasks on a computer.

Research – The process of gathering information from various sources to learn about a topic.

Search Engine – A website used to find information on the Internet.

Smart Technology – Technology that uses data and automation to perform tasks efficiently.

Smartphone – A mobile device that combines communication and computing functions.

Software – Programs and applications that tell a computer what to do.

Spreadsheet – A document used to organise data into rows and columns.

System Unit – The main computer case that contains important hardware components.

Tablet – A portable touchscreen device used for communication, learning, and entertainment.

Technology – Tools, systems, and devices created to solve problems and make tasks easier.

Upload – The process of transferring information from a device to the Internet or another computer.

Username – A unique name used to identify a user when accessing a digital system.

Virus (Computer Virus) – A harmful program that can damage a computer or its files.

Website – A collection of related webpages available on the Internet.

Wi-Fi – Wireless technology that allows devices to connect to the Internet.

Word Processing – The creation, editing, and formatting of text documents using software such as Microsoft Word.

Microsoft Word – A word processing application used to create and edit documents.

4IR (Fourth Industrial Revolution) – A period of technological advancement involving digital technology, artificial intelligence, robotics, and automation.

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The author acknowledges the use of educational images, illustrations, screenshots, and photographs that have been incorporated into this Teacher Guide to enhance teaching and learning experiences.

Images used throughout this publication originate from a combination of:

- Original Rural Digital Bridge Programme photographs
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- Educational technology illustrations
- Publicly available educational resources
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Original Programme Photographs

The following photographs are the original property of the Rural Digital Bridge Programme and were taken during programme activities at Nong Modikwa Primary School:

- Learner computer literacy sessions
- Weekend digital skills workshops
- Community volunteer activities
- Stakeholder engagement activities
- Programme implementation evidence
- Rural Digital Bridge promotional photographs

Photographs featuring learners have been included for educational and programme documentation purposes.

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Image Compilation and Acknowledgement Prepared by:

Mr Lesetja M. Ledwaba

Founder: Rural Digital Bridge Programme

RURAL DIGITAL BRIDGE TEACHER'S GUIDE



Grade 7



NONG MODIKWA PRIMARY SCHOOL

EMPOWERING RURAL LEARNERS THROUGH DIGITAL INNOVATION

This comprehensive guide provides Grade 7 teachers with a detailed pedagogical framework for delivering the digital literacy curriculum. Included are lesson-by-lesson instructions, learning outcomes, classroom facilitation strategies, and answers to all workbook activities. Designed to support teachers in fostering critical thinking and future-ready skills in rural learners.



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TEACHER'S GUIDE

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For inquiries: 0822155238 | NONGMODIKWAprimary@school.limpopo.gov.za

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