

BASIC

DIGITAL LITERACY

SKILLS



The Republic of Uganda

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for every child

ACKNOWLEDGEMENTS

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Letter to the Facilitator

This *Digital Literacy Facilitator's Guide* and the accompanying *Digital Literacy Learner's Handout Book* have been written to assist you to shape the digital skills learning experiences of all learners. The aim is to create inquisitive learners who are confident in their exploration and embracing of digital technology.

The major objective is to make the teaching of digital literacy skills more inclusive; that is, to satisfy the needs of learners of all abilities. For this reason, the learning process is learner centred.

This program aims to produce digitally literate learners who have a range of skills that meet the demands of our economy and the job market, and who also have the motivation and competence for further learning and skill acquisition.

This program is expected to produce learners who will be competent and can communicate effectively, think critically, and solve problems in the digital space. These learners will be employable and able to contribute towards the economic development of our country.

For competence-based teaching and learning to become a reality, certain ways of the teaching and learning process must change. For example:

- the role of the teacher must change from being the source of information to that of a facilitator
- the content must be applicable to daily life experiences and the local labour market
- monitoring and evaluation must be continuous and progressive and should include knowledge as well as skills.

Learner-centred teaching places focus on the learner *learning* rather than focusing on what the facilitator is doing. Research has shown that this has many advantages, including increased learner engagement with content, learning, and long-term retention. Furthermore, because of its flexibility, this type of teaching is effective in both small and large classes.

The authors

Introduction

This course follows the curriculum set out in the *Uganda Digital Literacy Framework*.

The curriculum caters for three levels of digital learner:

- Basic User
- Intermediate User
- Advanced User.

For learners to begin the Basic User Level, they should be able to follow digital prompts of the device that they are using in English. The facilitator may choose to teach using both English and a mother-tongue to facilitate understanding.

Each level ends with a formal skills assessment, learners should be able to demonstrate the required skills before advancing to the next level. Learners should be allowed multiple attempts until they pass the assessment.

How to use the Facilitators' Guide

The Facilitators' Guide is divided into modules that follow the curriculum set out in the *Uganda Digital Literacy Framework*,

- Foundation Digital Skills
- Information Processing
- Communication and Collaboration
- Content
- Safety and Security
- Problem Solving.

Each module of the *Digital Literacy Facilitators' Guide* consists of several units. Each module ends with a formal skills assessment. Learners should be able to demonstrate the required skills before advancing to the next module. Learners should be allowed multiple attempts until they pass the assessment.

Module and unit structure

For ease of use, the modules and units follow the same structure.

Module introduction: This gives a general overview of the intent of the module and lists the units in the module. The content is generic across levels.

Module learning outcomes: The outcomes cover the general competencies that learners should demonstrate on completion of the module and are generic to all levels.

Resources: A list of basic resources needed to facilitate the module is provided. The list is not exhaustive, and facilitators are encouraged to add and adapt to their own locality and needs.

Suggested teaching methods: The intention of this list is to stimulate creativity in the facilitator who is free to use teaching methods best suited to their locality and needs. Whatever approach adopted, we stress that each learner should be afforded enough time for individual practice so that they can master each skill or process without being prompted by a peer or the facilitator.

New terminology to explain: This is not an inclusive list, any terminology that is unfamiliar to the learners should be explained in plain English. Note that the list remains the same for Basic Users, Intermediate Users, and Advanced Users. This has been intentional, as some Intermediate or Advanced Users may need revision. The facilitator is free to delete or add to this list to meet the needs of their learners.

Unit structure:

- Each unit begins with a suggested time allocation. Facilitators are free to adjust this to meet the needs of their learners.
- Although the module outcomes do not differ, the unit objectives differentiate per level. Note that when reading the curriculum document, it is very evident how the skill complexity develops between levels.
- The content to be covered is listed. Note that much of the content is repeated between levels as the content of the previous level provides context for the learning of the next level.
- A suggested lesson plan guide is included to show the order that the content should follow. One lesson does not necessarily equate to one teaching session/period. Facilitators should plan their time according to the needs of their learners.
- Links to additional online resources build on or reinforce the content provided. These are tiny steps aimed at introducing the facilitator to the vast wealth of knowledge available on the internet, especially step-by-step videos on YouTube that provide guides to anything imaginable.
- The teaching notes are a detailed version of the theory that the facilitator will need to convey, together with the practical skills to be learned. The facilitator is free to adapt

the amount of theory to the needs of their learners. However, bear in mind that practical skills without theoretical context lose meaning.

- The practical activities are dispersed between the theory. However, due to the nature of the content, this is not always at regular intervals.
- Each unit ends with a Knowledge and Skill Checklist. This is intended as a self-assessment – learners need to be able to honestly assess their skill level and may need more practice.

The *Digital Literacy Facilitator's Guide* and the *Digital Literacy Learner's Handout Book* should be used together. The skills that learners need to practise per unit together with examples are provided.



Module 1

Foundation digital skills

The first module introduces learners to the basics of a computer, the basics of an internet-enabled mobile device and the internet.

Please note that practical activities described in each unit might require the support of a facilitator. Although the information presented is written in a way that is easy to understand, some actions, adjacent to the information presented, may also necessitate supervision and support from a facilitator.

Additional practice activities have been provided for learners (these are called **Skills to practise**). These activities provide learners with opportunities to further explore and consolidate what they have learnt in class. Set aside a few minutes at the start of each lesson to discuss the learners' own independent practice of these skills and their findings.

This module includes the following units:

| | |
|---------------|---|
| Unit 1 | Basics of a computer |
| Unit 2 | Basics of an internet-enabled mobile device |
| Unit 3 | Introduction to the internet |

Learning outcomes



Learners should be able to:

- Understand the basics of using a computer.
- Understand the basics of using an internet-enabled mobile device.
- Understand the basics of the internet.

Resources



- Training manual
- Computer with internet access
- Flipchart papers
- Markers

Suggested teaching methods



The following teaching methods are suggested:

- Presentation by facilitator
- Group exercise / Discussion / Debate
- Working in pairs / Small groups
- Presentation by learners



New terminology to explain

These are terms that learners may not be familiar with. They should be explained within the context that they may be used.

accessory

an optional part or object

| | |
|-----------------------|---|
| Bluetooth | short-range wireless technology that connects devices |
| borders | a line around a cell or block of cells |
| bullet | symbol to introduce item in a list |
| cell | block on a spreadsheet where data can be entered |
| cell reference | the combination of the row number and the column letter |
| column | vertical group of cells in spreadsheet |
| component | necessary part or object |
| currency | money used to buy and sell goods in a country |
| data | information |
| default | pre-determined setting |
| developer | creator of software |
| device | computing machines, e.g., smart phone, laptop, tablet, PC |
| ethernet | cable to connect devices to internet |
| font | specific way text is designed to look |
| format | the way something looks |

| | |
|---------------------|---|
| hardware | devices or machines |
| icon | image on the screen that represents the app or software |
| input | data that is entered by the user |
| install | making the software or app ready to use on the device |
| landing page | page a user goes to first on a website |
| link | text or button that sends the user to another web address |
| list | connected items written one below the other |
| manufacturer | creator or builder |
| margin | outside limit of the page |
| mobile | moves easily and freely |
| network | linked computers |
| output | data that is received by the user |
| personalize | to make the way the individual wants it |
| platform | specific place where the software works |
| podcast | audio content |

| | |
|---------------------|---|
| port | connection point for cables to a device |
| process | use |
| program | instructions that tell a device what to do |
| range | group of cells |
| retrieve | to find and bring back |
| row | horizontal group of cells in spreadsheet |
| sim card | smart card with identification information for a phone or tablet |
| software | computer programs |
| source | where something comes from |
| stock | generic pictures that are stored on a database where it can be bought |
| store | putting data on a device |
| subscription | product or service paid for regularly by customer |
| suite | collection of software |
| value | data in the cell of a spreadsheet |
| wrap | text is forced to run underneath each other |

1

Basics of a computer



| | | | | | | | | | | | | | | | | | | |
|---|--|--|---|--|---|-----------------------|---|--|---|---------------------------------------|---|-----------------------------------|---|------------------------------------|---|----------------------------|---|--------------------------------|
| | Duration | 5.5 hours | | | | | | | | | | | | | | | | |
| | Objectives | <ul style="list-style-type: none">Start up a computer safely.Shut down a computer safely.Understand the different components and accessories of a computer.Understand the basics of an operating system.Use the basic features of word processing software to create and edit documents.Use the basic features of spreadsheet software to create and edit spreadsheets.Use the basic features of presentation software to create and edit presentations. | | | | | | | | | | | | | | | | |
| | Content | <ul style="list-style-type: none">Introduction to computersHardwareOperating system software of a computerWord processing softwareSpreadsheet softwarePresentation software | | | | | | | | | | | | | | | | |
| | PowerPoint slides | Use this link to access the PowerPoint slides deck for this unit. | | | | | | | | | | | | | | | | |
| | Lesson Plan Guide | <table><tr><td>1</td><td>Introduction to computers (30 minutes)</td></tr><tr><td>2</td><td>Hardware (15 minutes)</td></tr><tr><td>3</td><td>Operating systems of a computer (20 minutes)</td></tr><tr><td>4</td><td>Word processing software (70 minutes)</td></tr><tr><td>5</td><td>Spreadsheet software (90 minutes)</td></tr><tr><td>6</td><td>Presentation software (90 minutes)</td></tr><tr><td>7</td><td>Consolidation (15 minutes)</td></tr><tr><td>8</td><td>Knowledge and Skills checklist</td></tr></table> | 1 | Introduction to computers (30 minutes) | 2 | Hardware (15 minutes) | 3 | Operating systems of a computer (20 minutes) | 4 | Word processing software (70 minutes) | 5 | Spreadsheet software (90 minutes) | 6 | Presentation software (90 minutes) | 7 | Consolidation (15 minutes) | 8 | Knowledge and Skills checklist |
| 1 | Introduction to computers (30 minutes) | | | | | | | | | | | | | | | | | |
| 2 | Hardware (15 minutes) | | | | | | | | | | | | | | | | | |
| 3 | Operating systems of a computer (20 minutes) | | | | | | | | | | | | | | | | | |
| 4 | Word processing software (70 minutes) | | | | | | | | | | | | | | | | | |
| 5 | Spreadsheet software (90 minutes) | | | | | | | | | | | | | | | | | |
| 6 | Presentation software (90 minutes) | | | | | | | | | | | | | | | | | |
| 7 | Consolidation (15 minutes) | | | | | | | | | | | | | | | | | |
| 8 | Knowledge and Skills checklist | | | | | | | | | | | | | | | | | |

Additional online resources

- What is a computer?
<https://edu.gcfglobal.org/en/computerbasics/what-is-a-computer/1/>
- The CPU of a computer
<https://www.khanacademy.org/computing/computers-and-internet/xcae6f4a7ff015e7d:computers/xcae6f4a7ff015e7d:computer-components/a/central-processing-unit-cpu>
- Computer hard disk drive
<https://www.crucial.com/articles/pc-builders/what-is-a-hard-drive>
- How operating systems work
<https://computer.howstuffworks.com/operating-system.htm>
- Operating system basics
<https://edu.gcfglobal.org/en/computerbasics/understanding-operating-systems/1/>
- Word processing software
<https://www.geeksforgeeks.org/word-processing-software/>
- Spreadsheet software
<https://www.techtarget.com/whatis/definition/spreadsheet#:~:text=A%20spreadsheet%20is%20a%20computer,data%20and%20short%20text%20strings.>
- Simple formulas
<https://www.goskills.com/Excel/Resources/Basic-Excel-formulas>



Teaching notes

Introduction to computers

Introduce this lesson by explaining to learners what a computer is. Remind learners that they have encountered many different types of computers in their daily lives. Explain that computers are all around us. A computer can be a laptop, a desktop computer, a tablet, a smartphone or even a smart watch. A computer is any electronic **device** that works with **data**.



Figure 1.1.1 – Different types of computers

Activity 1.1.1: What is a computer?

1. To elicit prior knowledge and allow learners to make connections to their daily lives, start this unit with a brainstorming session.
2. Make sure you have a whiteboard ready to register everyone's inputs.
3. Inform the learners that there are no right / wrong answers because the idea is to share with the group what they already know, and to realize what they may not know. Possible questions:
 - a) What is a computer?
 - b) How do you use computers in your daily lives?

Explain the primary tasks of a computer to learners. A computer can **store**, **retrieve** and **process** data.

- **Storing data:** A computer can keep data that might be needed so that it can be used at suitable times.
- **Retrieving data:** A computer can find the stored data when the user needs or requests it.
- **Processing data:** A computer can use and interpret the data to give the data to the user in a different form, for example, graphs, pictures, documents and more.

Starting up a computer safely

Explain to learners that when working with any computer, they must be able to start it up and shut it down safely. If they do not do it safely, the data on the computer could be damaged. This will make the computer work incorrectly, or not at all.

To start up a computer, learners will need to find the right button. On-buttons can be in different places, depending on the device. They are usually found on the top or the sides of tablets and smartphones. On laptops, they are often on the top row of the keyboard. A desktop computer will have a large button on the tower itself. Many power buttons have a symbol on them. To start up the computer, press the power button and wait patiently for it to start up.



Figure 1.1.2 – Symbol on power buttons



Figure 1.1.3 – Desktop tower

Activity 1.1.2: Turn on a computer

1. Show learners where to find on-buttons on various devices.
2. Ask learners to find the on-button on their computer.
3. Ask learners to push the button. Remind learners that they will need to be patient as the computer starts up.

Shutting down a computer safely

Just like starting up, shutting down is important to keep the data stored on the computer safe. Explain to learners that they do not follow the same process to start up and shut down a computer. To shut down a computer safely, first close any open **programs** and save whatever is being worked on. Then navigate to the power settings of the computer. Select the option that says *Power off* or *Shutdown*. Wait for the device to shut down completely and the screen is black.

Activity 1.1.3: Shutdown a computer

1. Show learners where to find power settings on various devices.
2. Ask learners to make sure all open programs are closed.
3. Ask learners to make sure all work has been saved.

4. Find the power settings on their computer.
5. Now, ask learners to shut down the computer. Remind the learners that they will need to be patient as the computer shuts down.

Hardware

Introduce this lesson by explaining to learners that computers are made up of **hardware** and **software**. A computer needs both to work properly.

- **Hardware:** The physical parts of the computer that run when they receive instructions from the software.
- **Software:** The sets of instructions that can be stored on the computer and that hardware uses to run.

Emphasize that in this lesson the focus will be on hardware. Computers have various **components** (parts) and **accessories** (extras). These are parts that can be seen. They are either inside the computer and only be seen if the computer is opened or they are visible without opening the computer.

Activity 1.1.4: Name parts of the computer

1. Start this lesson with a pair/ small group activity.
2. First, let learners think of the answers by themselves.
Possible questions:
 - a) What are the parts of the computer that you can see and what do you think they do?
 - b) What do you think the word input means? Draw their attention to the word divided up (in+put).
 - c) What do you think the word output means? Draw their attention to the word divided up (out+put).
 - d) Which parts of the computer can you not see and what do you think they do?
3. Inform learners that there are no right/wrong answers because the idea is to share with their group what they already know/may not know.

4. Then let learners break up into pairs or small groups of no more than 5.
5. Learners share their answers with each other.
6. Pairs or groups now share their answer with the class or with other pairs or groups.

Components

Remind learners of the definition of a computer: An electronic device that stores, retrieves, and processes data. For a computer to be able to complete those tasks, it uses four main types of components for **input**, processing, **output**, and storage.

- **Input components:** These are tools that the user uses to put data into the computer for storage and processing. The computer requires input from the user to tell it what to do. They can be seen. This includes virtual and physical keyboards, touch screens, and mice.



Figure 1.1.4 – Examples of input components

- **Processing components:** The Central Processing Unit (CPU) is the “brains” and controls all the operations of the computer. It processes the data received through input devices or stored in storage devices. Processing components are found inside the computer and cannot be seen unless the computer is opened.
- **Output components:** These are tools that are used to send processed or stored data out back to the user in a way that makes sense. This is the result of processed data that has been received through input components. They can be seen. The primary output component of a computer is the **monitor** (screen).



Figure 1.1.5 – Central Processing Unit



Figure 1.1.6 – Computer monitor

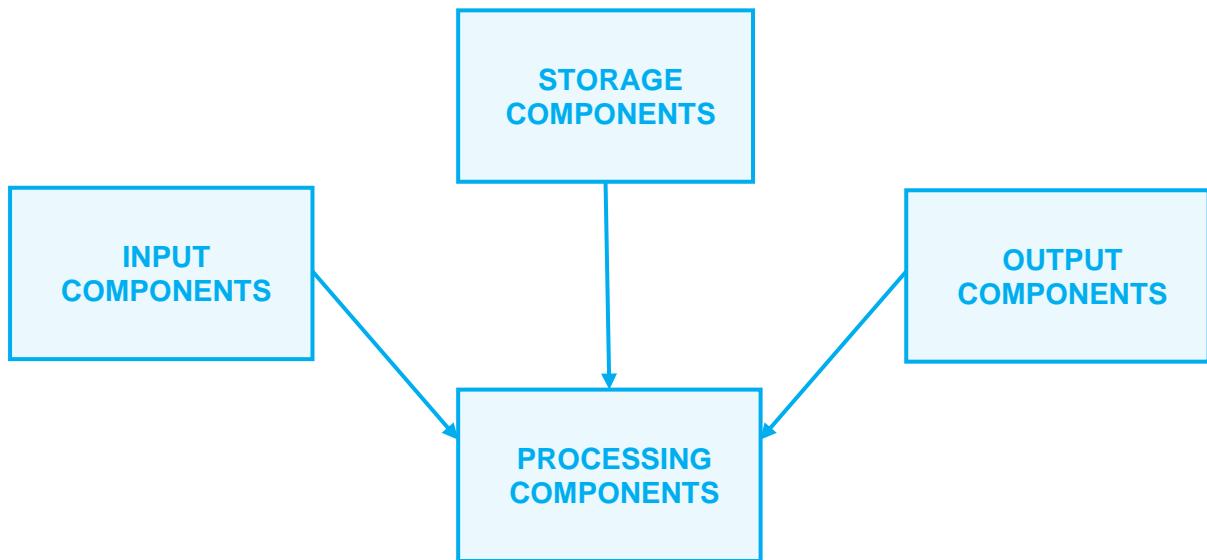
- **Storage components:** These are the tools that keep the data safe until it is needed by the processing devices or given to the user through output devices. Some types of storage components can be seen, but others cannot be seen without opening the computer. The main storage component of a computer is the hard drive. The hard drive can be a hard disk drive or a solid-state drive. It stores the most important data the computer needs.



Figure 1.1.7 – Solid-state hard drive

Figure 1.1.8 – Hard disk drive

All the input, output, processing, and storage components work together to make the computer function properly.



Accessories

Components are necessary for a computer to work; accessories are the optional extras. There are basic accessories like mousepads, cleaning kits, covers and screen protectors that make using your computer easier or safer. Other accessories can add functionality to a computer. It is nice to have but will not stop the computer from being able to function or complete tasks.

- **Input accessories:** These are accessories that allow the user to put different types of data into the computer. For example, joysticks, webcams, remotes, scanners, and microphones.



Figure 1.1.9 – Examples of input accessories

- **Output accessories:** These are accessories that can allow the user to get data from the computer in different ways. Some examples are speakers, headphones, and printers.



Figure 1.1.10 – Examples of output accessories

- **Storage accessories:** These are accessories that add different types of storage to the computer. It includes compact discs (CDs), USB drives, external hard drives, and SD cards.



Figure 1.1.11 – Examples of storage accessories

Operating system of a computer

Begin this lesson by reminding learners about what they already know about the difference between hardware and software. Hardware refers to the physical components and accessories of the computer, outlined in the previous lesson. Hardware runs when it receives instructions from software. Software refers to the sets of instructions that are stored on a computer and used by hardware to know what to do. Emphasise to learners that the next four lessons will be about specific types of software.

The most important software on a computer is the operating system (OS) software. It performs the tasks that must happen for the computer to work. It is the primary channel of

communication between the user and the computer. It contains the instructions to make all the input, output, processing, and storage tasks happen.

The OS performs the following tasks:

- Recognises and **installs** (adds) components or accessories, where necessary.
- Translates the data provided by the user through input components and accessories.
- Puts the data into a language the processing components can understand.
- Tells the processing components what to do with the data and what output to create.
- Manages the storage components to make sure data is stored safely and can be retrieved when needed.
- Loads and runs other types of software and allows it to communicate with the hardware.
- Manages system errors and lets the user know if there is an issue.

Not all computers use the same OS software. The OS software that is used depends on the type of computer and the manufacturer of the computer. The OS software on the computer will determine what you see on the screen, and what other types of software are available by **default** (automatically included) on the device.

The two most common types of OS software for smartphones and tablets are iOS and Android. iOS is the specific OS software used by Apple for iPhones and iPads. Android is the OS software used by most other smartphones and tablets.



Figure 1.1.12 – iOS logo



Figure 1.1.13 – Android logo

The two most common types of software for laptops and desktop computers are MacOS and Microsoft. MacOS is the specific OS software used by Apple for MacBooks and iMacs. Microsoft Windows is the OS software used by most other laptops and desktop computers.



Figure 1.1.14 – macOS logo



Figure 1.1.15 – Microsoft logo

Activity 1.1.5: Discuss operating systems

1. First, let learners break up into groups of no more than 10.
2. Inform learners that there are no right/ wrong answers because the idea is to share with their group what they already know/ may not know.
3. Let them look at their computers and discuss what they see. Encourage them to experiment with their computer to find the answers. Possible questions:
 - a) What OS software do you think your computer is using?
 - b) Why do you think this is the OS software your computer is using?
 - c) If there are computers with different types of OS software, how do they look?
 - d) If you have a computer at home, what type of OS software do you think it uses?
 - e) What apps are loaded by default onto the computer you are working on?
4. Let the learners complete this table (they can add more columns if they need to):

| | OS software type 1 | OS software type 2 |
|-----------------------------|-------------------------------|-------------------------------|
| Computers that use the OS | | |
| Features of the OS software | | |
| Default software of the OS | | |

5. Groups now share their answers with the class or another group.

Word processing software

Start this lesson by tapping into the prior knowledge of the learners. By now, they should know the following concepts:

- **Computer:** any electronic device that stores, processes, and retrieves data.
- **Hardware:** the physical parts of the computer that run when they receive instructions from the software.
- **Components and accessories of a computer:** the input, output, storage, and processing components (necessary) and accessories (optional) that a computer uses.
- **Operating system software of a computer:** the software that forms the primary communication between the user and the computer and performs all tasks needed for the computer to function.
- **Software:** the sets of instructions that can be stored on the computer and that hardware uses to run.

Emphasise that the next three lessons will be about specific software types. In this lesson, the focus will be word processing software. Remind learners that processing means to take data received through an input by the user and rework it into an output that the user wants. Word processing means to take the text typed on a keyboard into software that can create and edit documents containing the text on the computer. Word processing happens in two main steps: creating and editing.

Creating a document

Start off by explaining that the very first step in the word processing cycle is creating a document. Most computers provide default word processing software, but if it is not already installed, it will need to be installed before continuing. Some common types of word processing software include Apple Pages and Microsoft Word. There are many others not listed here.

Guide the learners to start up the software. There will be an option to create a document. There are two options when creating documents:

- **Blank document:** a plain white document with no text on it and everything will be set to the default. The user will start with nothing and must add everything on the page.
- **Template:** A template is a document that has been created for the user with text, colours, styles and more that the user can use to create something similar. Some popular templates include calendars, resumés, newsletters, lists, adverts, menus, and more.

For the purposes of this module, learners will only work with blank documents. Once a blank document has been created, the editing can begin.

Editing a document

Once learners understand how to create a document, move onto editing. The first step in editing the document is saving it. If a document is not saved, it will be lost along with any work done to it. Always save documents with a name that makes it easy to find again. Provide the learners with these hints for naming documents and files.

Take note:



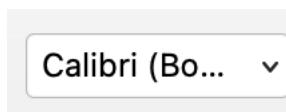
- Ensure names are unique.
- Avoid using spaces, rather use underscores.
- Add the date where possible and use YYYYMMDD as a format.
- Keep your file names to under 25 characters.

| | |
|----------------------------------|---|
| My word document |  |
| Module1_Foundations_Unit1_202305 |  |

Explain to learners that it is important to make sure that documents are saved in a place that can easily be remembered and accessed later. The user will regularly need to save while working to make sure the saved file is the most up to date.

Once the document has been saved, the user can begin to add text to it. Once the text is typed up in the document, the user can begin to do some basic tasks.

Work through this table with learners to help them understand the basic tasks most word processors can do. Make sure learners understand the concept of typing then selecting (or highlighting) text that they want to edit. Explain where to find each menu and button on the specific word processing software they are using. Ensure enough time is given for learners to understand the purpose of each task and navigate to the relevant button or menu.

| Task | Explanation | Example |
|----------------------------|---|---|
| Change type of font | When a blank document opens, the text will be in the default font. It can be changed to any available font by opening the font type menu and selecting a different font.  | Century Gothic Comic Sans Bradley Hand Times New Roman |

| | | |
|---------------------------|---|---|
| Change font size | The size of the text will also be set to default on a blank document. It can be changed to any size by opening the font size menu and changing the size. It is measured in points (pt). | 14 pt 18 pt 22 pt 24 pt |
| |  | |
| Change text colour | The colour of the text will be set to black by default on a blank document. This can be changed as well by opening the font colour menu and choosing a colour. | Purple Blue Green Orange |
| |  | |
| Format text | The text will have no formatting when a blank document is opened. Formatting can be added by selecting the specific type of formatting that is needed. | Bold <i>Italics</i> <u>Underline</u> Strikethrough |
| |  | |
| Add lists | Since the text is not formatted, it will run on in lines. Text can be broken up into lists that either have numbers or bullets (symbols). Lists can be added by selecting the specific type of lists that are needed. | 1. Number list 2. Number list • Bullet list • Bullet list |
| |  | |

Align text

By default, the text is aligned to the left. This means the text all runs down in a straight line against the left margin. Text can be aligned to the centre, the right or justified. Justified means the text is aligned against the left and right margin so it looks like a box.



The text in this line is left-aligned.

The text in this line is centre-aligned.

The text in this line is right-aligned.

The text in this line is justified.

Take note:

- Users can quickly and easily duplicate text by using the **copy** function.
 1. Select the text to be copied.
 2. Press **ctrl + C**.
 3. Navigate to where the copied text must be placed.
 4. Press **ctrl + V**.
- Users can quickly and easily duplicate and delete text by using the **cut** function.
 1. Select the text to be copied.
 2. Press **ctrl + X** (note that text will disappear from here).
 3. Navigate to where the cut text must be placed.
 4. Press **ctrl + V**.
- Users can quickly and easily save their files by using the **save** function.
 1. Press **ctrl + S**.



Activity 1.1.6: Create, edit and save a document

1. Firstly, explain to learners that they will be creating and editing a document on their computer.
2. These are the guidelines for the document that learners must produce:
 - a) The blank document must be saved with an appropriate name.
 - b) The document must contain the heading Practical activity 6 that is:
 - in a font of the learner's choice
 - 18 pt size
 - in any shade of blue
 - formatted in bold
 - centre aligned.
 - c) Learners must type five sentences that explain their experience of Module 1 thus far. The sentences must be:
 - in a different font to the heading
 - in 14 pt size
 - in any shade of grey
 - justified.
 - d) The document must contain a list of three things that the learner is still hoping to learn in this module. The list must be:
 - in a different font to the heading or sentences
 - in 12 pt size
 - in any shade of red
 - formatted in italics
 - left-aligned.
3. Ensure learners who are struggling are receiving adequate support to navigate their computers through the task.
4. Once learners have completed their documents, remind them to save again.
5. Learners pair up and swap documents with each other for feedback.
6. Each learner evaluates their partner's document against the guidelines given.
7. If there were omissions or errors, learners can be given an opportunity to correct it.

Spreadsheet software

Start this lesson by reminding learners of what they learnt in the previous lesson. Explain to them that this lesson will also cover software, but this time the software will be specifically for creating and editing spreadsheets.

Provide learners with this definition of a spreadsheet: A sheet made up of **rows** and **columns** that form a **grid** used to store and analyze data. It contains individual **cells** that can each hold their own **value**.

Go through these definitions with the learners before continuing with the lesson. It is very important that learners understand each of these terms as they will be used throughout the lesson.

- **Row:** run horizontally across the sheet and numbered from 1.
- **Column:** run vertically down the sheet and numbered from A.
- **Cell:** the specific block created by row and column lines.
- **Cell reference:** the unique name that is given to each cell based on where the columns and rows intersect. For example, E4 is the fourth row in column E.
- **Range:** a collection of selected cells separated by a colon (:) sign.
- **Value:** the data in the cell which can be text, dates, numbers, or other data.

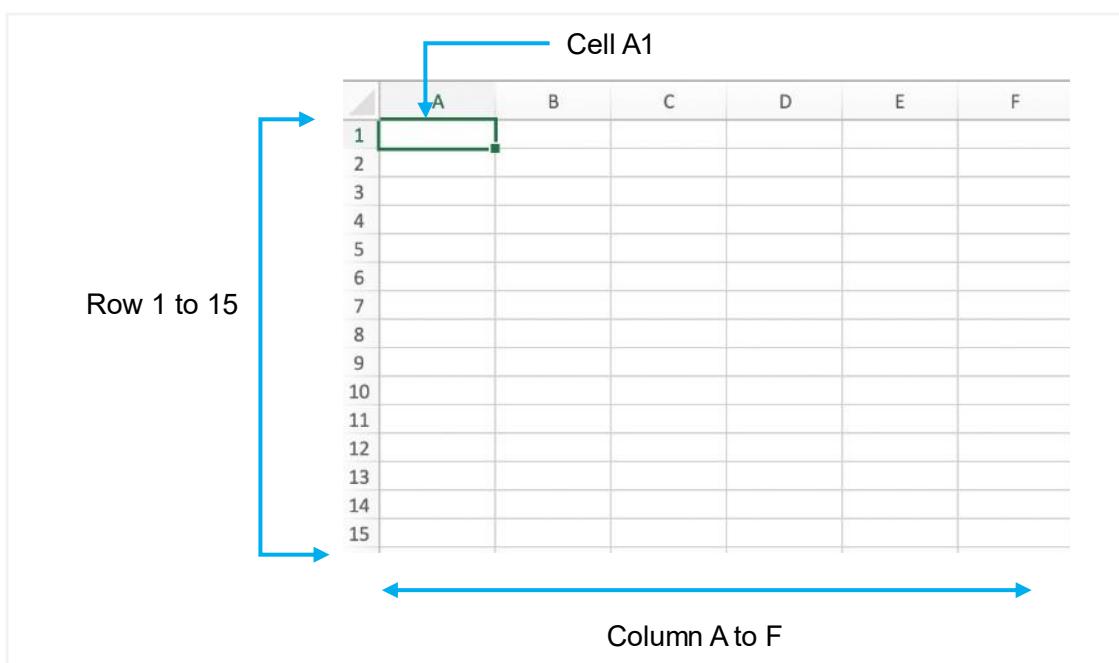


Figure 1.1.16 – Labelled screenshot of spreadsheet software

Explain to learners that often the same software **developer** will have word processing software and spreadsheet software, so they may look and function similarly. In this lesson, learners will learn how to create and edit a spreadsheet.

Creating a spreadsheet

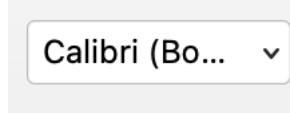
Start off by explaining that learners will begin by learning to create a spreadsheet. Most computers provide default spreadsheet software from the same **suite** as the word processing software. If it is not already installed, it will need to be installed before continuing. Two common types of spreadsheet software are Apple Numbers and Microsoft Excel. Remind learners that these are not the only two types.

Guide the learners to start up the software. There will be an option to create a spreadsheet. Again, there will be the option to choose a blank spreadsheet or a template.

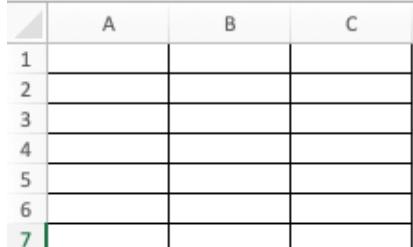
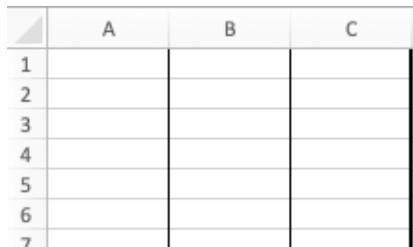
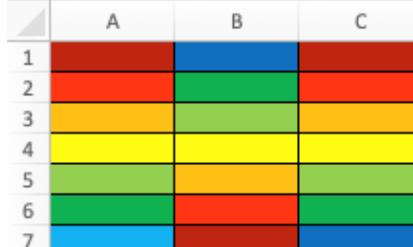
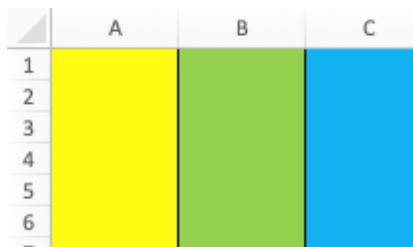
For the purposes of this module, learners will only work with blank spreadsheets. Remind learners of the importance of saving and naming spreadsheets.

Edit a spreadsheet

Once a blank spreadsheet has been created, briefly go through the tasks that learners were introduced to in the previous lesson. Explain to learners that in the same way they needed to select text on their document to be able to edit it, they would need to select a cell on their spreadsheet. Help learners feel confident by explaining that software in the same suite will look the same and they are already familiar with it. Point out where to find these buttons and menus on their spreadsheet software.

| Task | Button/ menu |
|---------------------|---|
| Change type of font |  |
| Change text size |  |
| Change text colour |  |
| Format text |  |
| Align text |  |

A document is mainly made to work with text, whereas a spreadsheet is made to analyze data. So, it has many additional tasks that can be performed. Work through this table with learners to help them understand the basic tasks most types of spreadsheet software can do. Explain where to find each menu and button on the specific spreadsheet software they are using. It can be quite difficult for learners to come to grips with spreadsheets so ensure plenty of time is given for learners to understand the software.

| Task | Explanation | Example |
|-------------------------------|--|---|
| Change type of borders | <p>When a blank spreadsheet opens, the grid will have no borders. This can be changed by opening the borders menu and selecting another option.</p>  <p>Remind learners to select the relevant cells they want to change.</p> |   |
| Change fill colour | <p>The cells will have no colour in them on a blank spreadsheet. Colour can be added by selecting the cell and then opening the fill colour menu and choosing another colour.</p>  |   |

Merge cells

In spreadsheet software, cells can be merged to make wider or higher cells. This is done by selecting the cells that must be merged and then selecting the right option from the merge menu. Cells can be merged horizontally or vertically.



| | A | B | C |
|---|--------|-------|-------|
| 1 | Yellow | Green | |
| 2 | Orange | | |
| 3 | Red | Blue | Cyan |
| 4 | Yellow | | Green |
| 5 | Red | | Blue |
| 6 | Blue | | Green |
| 7 | Red | | |

Change row height

The height of the row will be set by default. The row height can be increased in two steps.

1. Select the row.
2. Use the cursor to drag the row higher.

| | A | B | C |
|---|--------|--------|-------|
| 1 | Yellow | Green | |
| 2 | Orange | | |
| 3 | Red | Blue | Cyan |
| 4 | Yellow | | Green |
| 5 | Red | Yellow | |
| 6 | Blue | Green | |
| 7 | Red | | |

Change column width

The width of the column will be set by default. The column width can be increased in two steps.

1. Select the column.
2. Use the cursor to drag the column wider.

| | A | B | C |
|---|--------|--------|-------|
| 1 | Yellow | Green | |
| 2 | Orange | | |
| 3 | Red | Blue | Cyan |
| 4 | Yellow | | Green |
| 5 | Red | Yellow | |
| 6 | Blue | Green | |
| 7 | Red | | |

Align text vertically

In most spreadsheet software, text can also be aligned vertically in a cell. By default, text will be aligned to the bottom of the cell. It can be changed to the top or the middle of the cell by clicking on the button of choice.



| | A | B | C |
|---|----------------|-------------|-------|
| 1 | Yellow | Top aligned | |
| 2 | Middle aligned | | |
| 3 | Red | Blue | Cyan |
| 4 | Yellow | | Green |
| 5 | Red | Yellow | |
| 6 | Blue | Green | |
| 7 | Red | | |

Wrap text

The text typed into the cell will run across and “disappear” if it is longer than the cell length. Text can either be made smaller to fit or it can be wrapped and run underneath each other. Select the wrap text menu and choose the right option to make the text fit in the cell.



| | A | B | C |
|---|---|--|---|
| 1 | | This text has been wrapped to fit. | |
| 2 | | | |
| 3 | | This text has not been shrunk or wrapped | |
| 4 | | | |
| 5 | | | |
| 6 | | This text has been shrunk to fit. | |
| 7 | | | |

Take note:



- Copy = **ctrl + C**
- Paste = **ctrl + V**
- Cut = **ctrl + X**
- Save = **ctrl + S**

As mentioned before, spreadsheet software is excellent for data analysis. To make data analysis simpler and more effective, spreadsheets allow the user to select different number formats for the cells and use formulas to complete calculations using the data in the spreadsheet.

- **Number format:** By default, all cells are set to general which means the data could be numerical or text. The number format can be changed by selecting the desired format from the number format menu. Guide learners to find this menu on their computers. Explain to them the many types of number formats provided by spreadsheet software. Show learners how to specify the number formats even further, for example:

- Number: specify decimal places
- **Currency:** specify type of currency
- Date: specify date format

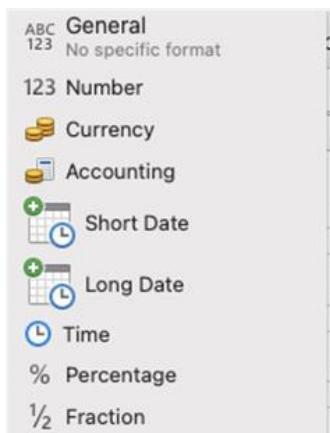


Figure 1.1.17 – Number format menu

- **Formulas and functions:** Formulas and functions are instructions given to the computer to do calculations. Carefully explain these two note boxes to learners.

Take note:

- **Formulas** are calculations that are manually entered.
- All formulas must begin with an equal (=) sign.
- The formula can be seen in the bar at the top of the spreadsheet that has an *fx* symbol at the beginning of it.



- For formulas, specific signs are used to do calculations:
 - Addition – plus (+) sign
 - Subtraction – dash (-) sign
 - Multiplication – asterisk (*) sign
 - Division – forward slash (/) sign.
- Formulas can be made up of either numbers or cell references.

| | | | | | | |
|-----|---|---|---|---|----|----------|
| SUM | ⋮ | ⋮ | X | ✓ | fx | =100+200 |
| B1 | ⋮ | ⋮ | X | ✓ | fx | =A1+B1 |

Take note:

- **Functions** are pre-defined calculations that have an easy to remember name.
- All functions must begin with an equal (=) sign.
- The function name follows directly after the equal sign.
- Once the function name is entered, open brackets and type the in the cells that will form part of the calculation.
- The brackets must be closed to ensure the calculation works.
- Formulas can be made up of numbers, cell references or ranges.



| | | | | | |
|----|-----|-----|---|----|------------------|
| B1 | ⋮ | X | ✓ | fx | =SUM(105+259+85) |
| | A | B | C | D | E |
| 1 | 105 | 449 | | | |
| 2 | 259 | | | | |
| 3 | 85 | | | | |

SUM function with numbers

| B1 | A | B | C | D | E |
|----|-----|-----|---|---|---|
| 1 | 105 | 449 | | | |
| 2 | 259 | | | | |
| 3 | 85 | | | | |

SUM function with cell references

| B1 | A | B | C | D | E |
|----|-----|-----|---|---|---|
| 1 | 105 | 449 | | | |
| 2 | 259 | | | | |
| 3 | 85 | | | | |

SUM function with ranges

Work through this table of basic functions with learners. Help them to understand what the aim of each calculation is. Make sure to remind them that functions can be done using numbers, cell references or ranges. The examples will not show all three for each function.

| Function | Explanation | Example | | | | | | | | | | | | | | | | | | | | |
|----------------|---|--|---|---|---|---|---|------|------|---|---|------|---|------------|---|-----|--|---|-----|--|--|--|
| SUM | This function adds values. =SUM | B1 ▲ X ✓ f _x =SUM(A1:A3) <table border="1"> <thead> <tr> <th>A</th><th>B</th><th>C</th><th>D</th></tr> </thead> <tbody> <tr> <td>1</td><td>1500</td><td>3000</td><td></td></tr> <tr> <td>2</td><td>1000</td><td></td><td></td></tr> <tr> <td>3</td><td>500</td><td></td><td></td></tr> </tbody> </table> | A | B | C | D | 1 | 1500 | 3000 | | 2 | 1000 | | | 3 | 500 | | | | | | |
| A | B | C | D | | | | | | | | | | | | | | | | | | | |
| 1 | 1500 | 3000 | | | | | | | | | | | | | | | | | | | | |
| 2 | 1000 | | | | | | | | | | | | | | | | | | | | | |
| 3 | 500 | | | | | | | | | | | | | | | | | | | | | |
| AVERAGE | This function works out the average of a set of values. =AVERAGE | B1 ▲ X ✓ f _x =AVERAGE(A1:A3) <table border="1"> <thead> <tr> <th>A</th><th>B</th><th>C</th><th>D</th></tr> </thead> <tbody> <tr> <td>1</td><td>1500</td><td>1000</td><td></td></tr> <tr> <td>2</td><td>1000</td><td></td><td></td></tr> <tr> <td>3</td><td>500</td><td></td><td></td></tr> </tbody> </table> | A | B | C | D | 1 | 1500 | 1000 | | 2 | 1000 | | | 3 | 500 | | | | | | |
| A | B | C | D | | | | | | | | | | | | | | | | | | | |
| 1 | 1500 | 1000 | | | | | | | | | | | | | | | | | | | | |
| 2 | 1000 | | | | | | | | | | | | | | | | | | | | | |
| 3 | 500 | | | | | | | | | | | | | | | | | | | | | |
| COUNT | This function works out how many cells contain numbers. =COUNT | B1 ▲ X ✓ f _x =COUNT(A1:A3) <table border="1"> <thead> <tr> <th>A</th><th>B</th><th>C</th><th>D</th><th>E</th></tr> </thead> <tbody> <tr> <td>1</td><td>1500</td><td>2</td><td></td><td></td></tr> <tr> <td>2</td><td>A thousand</td><td></td><td></td><td></td></tr> <tr> <td>3</td><td>500</td><td></td><td></td><td></td></tr> </tbody> </table> | A | B | C | D | E | 1 | 1500 | 2 | | | 2 | A thousand | | | | 3 | 500 | | | |
| A | B | C | D | E | | | | | | | | | | | | | | | | | | |
| 1 | 1500 | 2 | | | | | | | | | | | | | | | | | | | | |
| 2 | A thousand | | | | | | | | | | | | | | | | | | | | | |
| 3 | 500 | | | | | | | | | | | | | | | | | | | | | |
| MAX | This function tells the user which value is the highest. =MAX | B1 ▲ X ✓ f _x =MAX(A1:A3) <table border="1"> <thead> <tr> <th>A</th><th>B</th><th>C</th><th>D</th></tr> </thead> <tbody> <tr> <td>1</td><td>1500</td><td>1500</td><td></td></tr> <tr> <td>2</td><td>1000</td><td></td><td></td></tr> <tr> <td>3</td><td>500</td><td></td><td></td></tr> </tbody> </table> | A | B | C | D | 1 | 1500 | 1500 | | 2 | 1000 | | | 3 | 500 | | | | | | |
| A | B | C | D | | | | | | | | | | | | | | | | | | | |
| 1 | 1500 | 1500 | | | | | | | | | | | | | | | | | | | | |
| 2 | 1000 | | | | | | | | | | | | | | | | | | | | | |
| 3 | 500 | | | | | | | | | | | | | | | | | | | | | |

MIN

This function tells the user which value is the lowest.
 $=\text{MIN}$

| B1 | A | B | C | D |
|----|------|-----|---|---|
| 1 | 1500 | 500 | | |
| 2 | 1000 | | | |
| 3 | 500 | | | |

Activity 1.1.7: Create, edit and save a spreadsheet

1. Firstly, explain to learners that they will be creating and editing a spreadsheet on their computer.
2. These are the guidelines for the spreadsheet that learners must produce:
 - a) The blank spreadsheet must be saved with an appropriate name.
 - b) All the cells from A1 to E1 must be merged
 - c) The top merged row must have its height increased to double the default.
 - d) Add the heading ***Practical activity 7*** in the top merged row that is:
 - in a font of the learner's choice
 - 18 pt size
 - in any shade of green
 - formatted in bold
 - centre-aligned (horizontally)
 - middle-aligned (vertically)
 - e) Add all borders to the cells from A1 across to E1 and down to row 10.
 - f) Row 10 must be filled in any shade of red.
 - g) Cells B1 to B9 and D1 to D9 must be filled in blue.
 - h) Row 2 to 10 must be right aligned.
 - i) Row 2 to 10 must use the number format for numbers with two decimal places.

3. Learners must type the following data into the spreadsheet into the specified cells (decimals will be added automatically).

| Cell reference | Value | Cell reference | Value | Cell reference | Value |
|----------------|-------|----------------|-------|----------------|-------|
| A2 | 15 | C2 | 123 | E2 | 147 |
| A3 | 20 | C3 | 234 | E3 | 258 |
| A4 | 25 | C4 | 345 | E4 | 369 |
| A5 | 30 | C5 | 456 | E5 | 159 |
| A6 | 35 | C6 | 987 | E6 | 357 |
| A7 | 40 | C7 | 876 | E7 | 951 |
| A8 | 45 | C8 | 765 | E8 | 753 |
| A9 | 50 | C9 | 654 | E9 | 852 |

4. Learners must do the following calculations on the spreadsheet in the specified cells.

| Cell reference | Calculation | Suggested formula | Correct answer |
|----------------|------------------------------|-------------------|----------------|
| A10 | Add A2 to A9 | =SUM(A2:A9) | 260,00 |
| C10 | Average of C2 to C9 | =AVERAGE(C2:C9) | 555,00 |
| E10 | Highest number from E2 to E9 | =MAX(E2:E9) | 951,00 |

5. Ensure learners who are struggling are receiving adequate support to navigate their computers through the task.
6. Once learners have completed their spreadsheets, remind them to save again.
7. Learners pair up and swap spreadsheets with each other for feedback.

8. Each learner evaluates their partner's document against the guidelines given. Use this sample answer to assist learners with their evaluation.

| | A | B | C | D | E |
|----|----------------------|---|--------|---|--------|
| 1 | Practical activity 6 | | | | |
| 2 | 15,00 | | 123,00 | | 147,00 |
| 3 | 20,00 | | 234,00 | | 258,00 |
| 4 | 25,00 | | 345,00 | | 369,00 |
| 5 | 30,00 | | 456,00 | | 159,00 |
| 6 | 35,00 | | 987,00 | | 357,00 |
| 7 | 40,00 | | 876,00 | | 951,00 |
| 8 | 45,00 | | 765,00 | | 753,00 |
| 9 | 50,00 | | 654,00 | | 852,00 |
| 10 | 260,00 | | 555,00 | | 951,00 |

9. If there were omissions or errors, learners can be given an opportunity to correct it.

Presentation software

Start this lesson by reminding learners of what they learnt in the previous two lessons. Explain to them that the software that will be the focus of this lesson will be presentation software. Learners will learn to create and edit presentations. Remind learners that the same software developer will have presentation software in the same suite as word processing software and spreadsheet software, so they may look and function similarly.

Discuss the definition of presentations with learners: A presentation is a method of conveying ideas using text, audio, image, and video. It supports a speech that is presented by a speaker. A presentation is made up of **slides** that can be edited to suit the user's needs.

Go through these definitions with the learners before continuing with the lesson. It is very important that learners understand each of these terms as they will be used throughout the lesson.

- **Slide:** single “page” on a presentation.
- **Slide deck:** collections of slides.
- **Title:** the first level heading at the top of each slide.
- **Subtitle:** the second level heading on each slide.

- **Transitions:** how slides change from one to the next in a slide show.
- **Animations:** how content appears on the slide in a slide show.

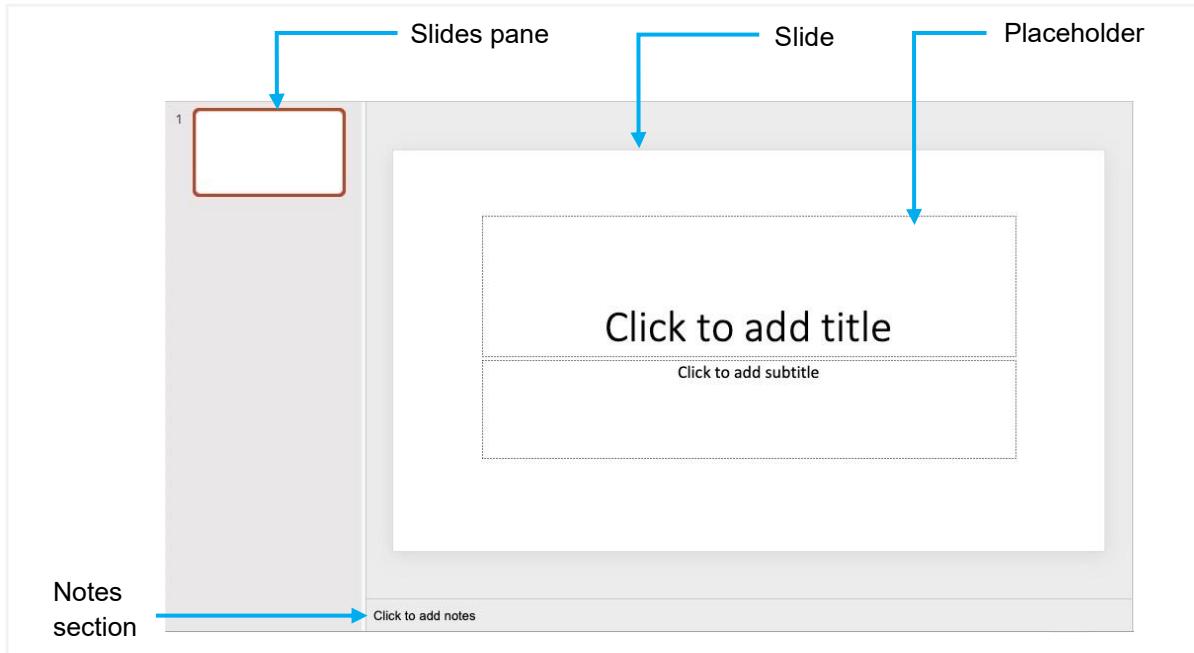


Figure 1.1.18 – Labelled screenshot of presentation software

Creating a presentation

Start off by explaining that learners will begin by learning to create a presentation. Most computers provide default presentation software from the same suite as the word processing and spreadsheet software. If it is not already installed, it will need to be installed before continuing. Two common types of spreadsheet software are Apple Keynote and Microsoft PowerPoint. Remind learners that these are other types available.

Guide the learners to start up the software. There will be an option to create either a blank presentation or a presentation from a template.

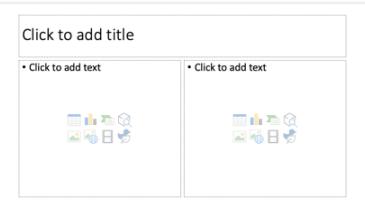
Editing a presentation

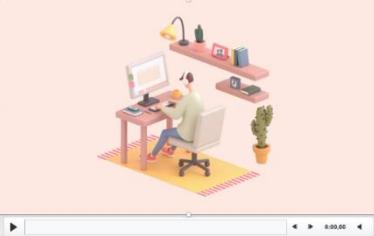
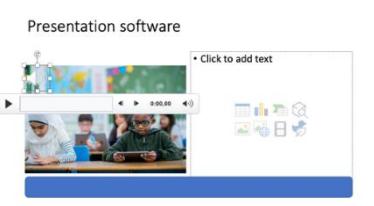
For the purposes of this module, learners will only work with blank presentations. Once a blank presentation has been created, remind learners to save it and name it appropriately. Briefly go through the tasks, such as changing fonts, changing colours, and sizing, that learners were introduced to in the previous lesson. Tap into learners' existing knowledge by pointing out how the software in the same suite looks the same so that they feel familiar with it.

A document is made to work with text and a spreadsheet is made to analyze data. A presentation is made to work with text, audio, image, and video. So, it has many additional tasks that can be performed. A presentation will be used to support a speech by a presenter. The presenter will allow the presentation to play as a slide show, with one slide following on

the other. The speaker will prompt the slides to move from one to the other as they go through their speech.

Work through this table with learners to help them understand the basic tasks most types of presentation software can do. Explain to learners that in the same way they needed to select text on their document or select a cell on their spreadsheet, they would need to select the placeholder on the slide to edit specific text. Explain where to find each menu and button on the specific presentation software they are using. If learners struggle, give them extra time and assistance to help them understand.

| Task | Explanation | Example |
|-----------------------|---|--|
| Add new slide | <p>When a blank presentation opens, the presentation will only have one slide. More can be added using the new slide menu. There are options in the new slide menu that the user can choose from, depending on what they need.</p> <p>The options may include title, title and content, two content comparison, content with caption, or picture with caption. These are pre-defined slides with placeholders, but users can also insert a blank slide that contains no placeholders.</p>  |    |
| Insert picture | <p>Pictures are a useful tool in a presentation. Users can insert them either by uploading from their computer or using the internet to search for stock images. Presentation software will often have stock picture libraries linked to their software to make it easy to search.</p>  | <p>Presentation software</p>  |

| | | |
|------------------------|---|---|
| Insert video | <p>Users can insert videos from whatever source they choose. Videos will fill the whole slide and play during the presentation. The tracking bar will disappear when the video is not selected or if it is played during a presentation.</p>  Video |  |
| Insert audio | <p>Users can insert audio from whatever sources they choose. Audios will show as a small speaker icon on the slide. The icon and the tracking bar will disappear when the audio is played during a presentation.</p>  Audio |  |
| Insert shape | <p>Just like pictures, shapes can make the presentation visually engaging. Users can add all types of shapes from the insert shape menu.</p>  |  |
| Insert text box | <p>The user may want to insert text on blank slides or on slides where there are not enough placeholders. A text box is the one way to create a new placeholder for text on the slide. This is done using the insert text box buttons.</p>  Text Box |  |

- **Animations:** Animations are used to make any text or object on the slide appear on the screen in a special way during a presentation. First the text or object must be selected, then the animation applied. Be careful not to add many animations to the same text or object. Encourage learners to experiment with animations and see which ones they like. Remind them that animations can be very busy and overwhelm the viewer, so they must be used with careful consideration.

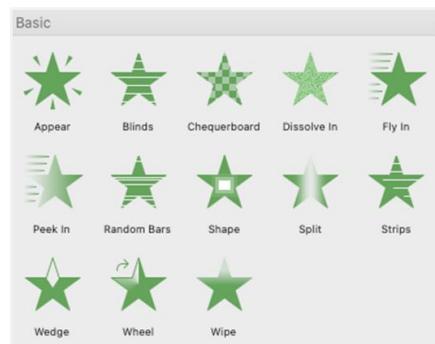


Figure 1.1.19 – Basic animations

- **Transitions:** Transitions are used between slides to move from one slide to the next in a special way during a presentation. The transition will apply to the beginning of the slide being worked on. Encourage learners to experiment with transitions and see which ones they like. Remind them that transitions can be confusing to the viewer if not used correctly so they must be used carefully.



Figure 1.1.20 – Basic transitions

Take note:

- It is also possible to use timings and triggers to make animations and transitions even more effective.



Timings: The user can select how long the animation or transition takes by setting the duration the slide or image is on the screen.

Triggers: The user can select what causes the animation or transition to begin, either by a mouse click or after a specified time.

- These tips can be used as extension for stronger learners but can be omitted completely, if not relevant.

Activity 1.1.8: Create, edit and save a presentation

1. Firstly, explain to learners that they will be creating and editing a presentation on their computer.
2. These are the guidelines for the presentation that learners must produce:
 - a) The blank presentation must be saved with an appropriate name.
 - b) There must have two slides.
 - c) Add the title ***Practical activity 1.1.8*** to the first slide and edit the font to be:
 - in a font of the learner's choice
 - 48 pt size
 - in any shade of orange
 - formatted in bold
 - centre-aligned (horizontally)
 - middle-aligned (vertically)
 - d) Add a subtitle to the first slide with the learner's name and the date in two lines underneath each other. Edit it to be:
 - in two different fonts
 - 32 pt size
 - in black
 - formatted in italics
 - left-aligned (horizontally)
 - bottom-aligned (vertically)
 - e) Learners must insert a picture of their choice on the first slide.
 - f) Learners must add any animation of their choice to the picture.
 - g) Add a transition of choice to slide 1.
 - h) Add the title ***What I have learnt*** to the second slide. Edit it as follows:
 - Format like slide 1 but left-aligned and in any shade of blue
 - Learners must add any animation of their choice to the title.
 - i) Add a transition of choice to slide 2.
 - j) Insert a circle in slide 2 on the right of the slide.
 - k) Learners must add an animation of their choice to the circle.

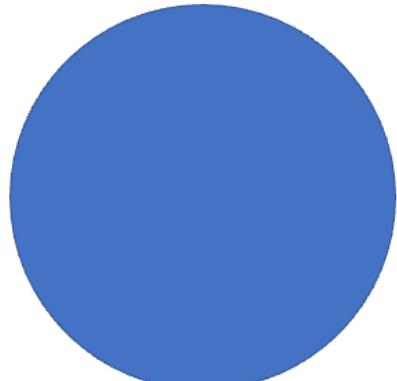
- I) Add a text box in slide 2 on the left of the slide and type the following in a bulleted list:
- I have learnt about word processing software.
 - I have learnt about spreadsheet software.
 - I have learnt about presentation software.
 - I can't wait to learn more!
3. Ensure learners who are struggling are receiving adequate support to navigate their computers through the task.
 4. Once learners have completed their presentations, remind them to save again.
 5. Learners pair up and swap presentations with each other for feedback.

Each learner evaluates their partner's presentation against the guidelines given. Use these sample answer slides to assist learners with their evaluation.

The slide has a white background with a green vertical bar on the left. At the top, the title 'Presentation software basics' is written in orange. Below the title, the author's name 'Adam Smith' and the date '3 November 2022' are displayed. To the right of the text is a photograph of a person sitting at a desk, working on a laptop. The person is wearing a red cardigan over a blue shirt. The desk has a white mug and some papers on it. In the background, there is a window with a view of greenery. A small number '1' is in a box in the top-left corner of the slide area.

What I have learnt

- 1 • I have learnt about word processing software.
- 2 • I have learnt about spreadsheet software.
- I have learnt about presentation software.
- I can't wait to learn more!



6. If there were omissions or errors, learners can be given an opportunity to correct it.

Knowledge and skill checklist

| |  |  |
|--|---|---|
| I know how to start up a computer safely. | <input type="checkbox"/> | <input type="checkbox"/> |
| I know how to shut down a computer safely. | <input type="checkbox"/> | <input type="checkbox"/> |
| I can identify the different components and accessories of a computer. | <input type="checkbox"/> | <input type="checkbox"/> |
| I understand the basics of an operating system. | <input type="checkbox"/> | <input type="checkbox"/> |
| I can create and edit documents using word processing software. | <input type="checkbox"/> | <input type="checkbox"/> |
| I can create and edit spreadsheets using spreadsheet software. | <input type="checkbox"/> | <input type="checkbox"/> |
| I can create and edit presentations using presentation software. | <input type="checkbox"/> | <input type="checkbox"/> |

2

Basics of an internet-enabled mobile device



Duration

4.5 hours



Objectives

- Understand the different device types and operating systems.
- Understand how to use mobile internet.
- Understand how to use the basic functions of an internet-enabled smartphone or tablet.
- Understand how to use a variety of apps.
- Understand the different settings on different mobile devices.
- Understand security and privacy settings on different devices.



Content

- Introduction to mobile devices
- Smartphones and tablets
- Apps
- Settings



PowerPoint slides

Use [this link](#) to access the PowerPoint slides deck for this unit.



Lesson Plan Guide

- 1 Introduction to mobile devices (45 minutes)
- 2 Smartphones and tablets (45 minutes)
- 3 Apps (75 minutes)
- 4 Settings (90 minutes)
- 5 Consolidation (15 minutes)
- 6 Knowledge and Skills Checklist

Additional online resources

- What is a mobile device?
<https://www.lifewire.com/what-is-a-mobile-device-2373355>
- How Wi-Fi and cell phones work
https://www.youtube.com/watch?v=kxLcwIMYmr0&ab_channel=TheExplainedChannel
- What is an app?
<https://edu.gcfglobal.org/en/computerbasics/understanding-applications/1/>
- App types
<https://blog.duckma.com/en/types-of-mobile-apps/>
- How to protect your digital privacy
<https://www.nytimes.com/guides/privacy-project/how-to-protect-your-digital-privacy>



Teaching notes

Introduction to mobile devices

Introduce this lesson by explaining to learners what **mobile** means. It means to be able to move freely or easily. Remind learners that they have encountered many different types of mobile devices. Mobile devices are a category of computer types. These are devices that users can easily take with them, such as laptops, smartphones, or tablets.

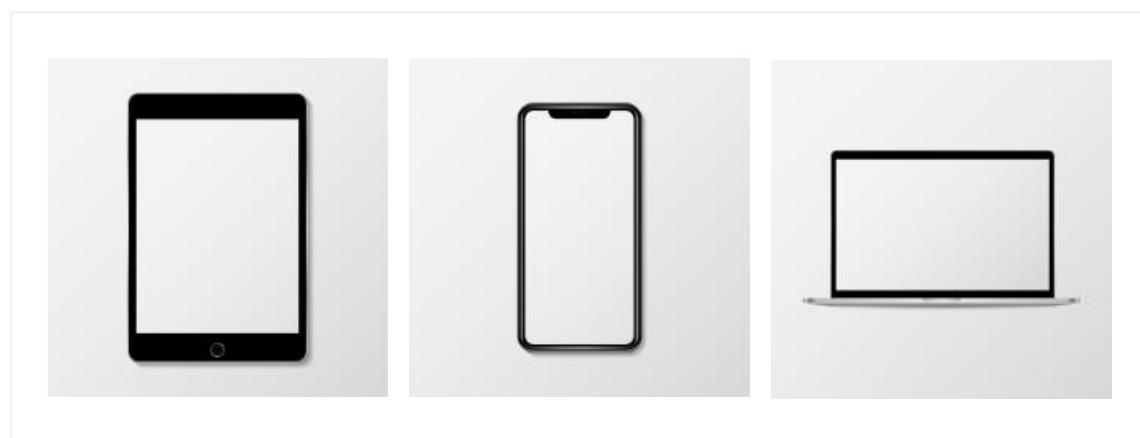


Figure 1.2.1 – Different types of mobile devices

Activity 1.2.1: Name mobile devices

1. To elicit prior knowledge and allow learners to make connections to their daily lives, start this unit with a brainstorming session.
2. Make sure you have a whiteboard ready to register everyone's inputs.
3. Inform the learners that there are no right / wrong answers because the idea is to share with the group what they already know, and to realize what they may not know. Possible questions:
 - a) What mobile devices do you use, or have you ever used?
 - b) What are the advantages of mobile devices?

In Unit 1, learners were taught about various operating systems software across computer types. Make sure they recall this prior knowledge. Work through this table with learners. Draw their attention to the fact that different types of devices will make use of different types of OSs. Point out that devices from the same **manufacturer** will use the same OS across their products.

| OS | Device | Logo |
|-----------|--|---|
| iOS | <ul style="list-style-type: none">• iPad (Apple tablet)• iPhone (Apple smartphone) |  |
| macOS | <ul style="list-style-type: none">• iMac (Apple desktop computer)• MacBook (Apple laptop) |  macOS® |
| Android | <ul style="list-style-type: none">• Most tablets• Most smartphones |  |
| Microsoft | <ul style="list-style-type: none">• Most desktop computers• Most laptops |  |

Mobile internet

Remind learners again that mobile means to be able to move quickly and easily. One of the most important aspects of any mobile device is its ability to connect to mobile internet.

Mobile internet is then internet that can be accessed on a mobile device from anywhere.

Explain to learners that there are two main ways that a mobile device can connect to mobile internet.

- **Mobile network:** If not using Wi-Fi, the mobile device will need to connect to the internet using cellular data through a mobile network. For this to work, the mobile device must have a **sim card**. This is a small smart card with a unique identification number that is inserted into the device to connect the mobile device to the mobile network. A mobile network makes use of towers that send and receive radio signals from the sender to the receiver. The mobile network signal icon appears on the device to show the strength of the signal it is receiving.



Figure 1.2.2 – Mobile network signal icon.

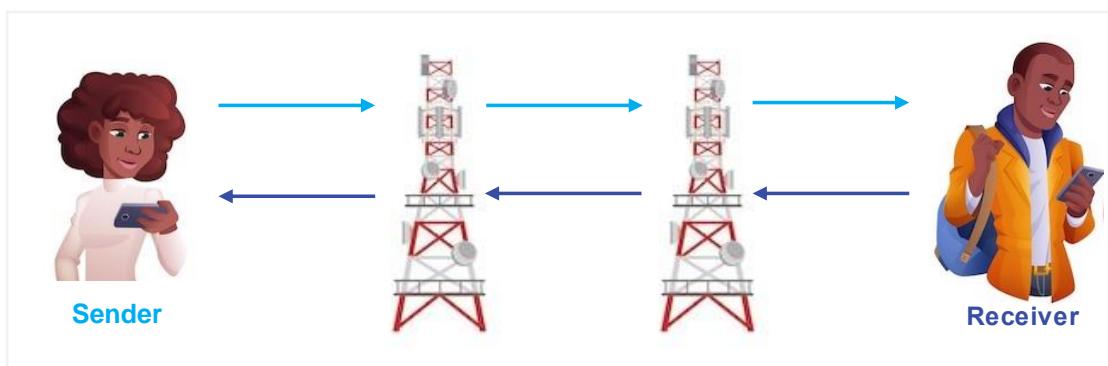


Figure 1.2.3 – Simplified example of how a mobile network works

- **Wi-Fi:** If not using a mobile network, the mobile device will need to connect to the internet using Wi-Fi. Wi-Fi is a wireless network that exists in a mall, local area like a house or an office building. A Wi-Fi network is created when a router connects to an internet service provider by wire or cable and then sends radio signals to nearby devices. To join a Wi-Fi network, the user will need to select a network that they have permission to use. There is usually a password that is entered to ensure only authorized devices are on the network. The Wi-Fi network signal icon appears on the device to show the strength of the signal it is receiving.



Figure 1.2.4 – Wi-Fi network signal icon

Take note:



- Not all Wi-Fi networks are safe, so only join networks that can be trusted.
- Criminals can use untrustworthy networks to steal your personal data.



Figure 1.2.5 – Simplified example of how a Wi-Fi network works

Activity 1.2.2: Access the internet via Wi-Fi

1. Show learners where to find network settings on their device.
2. Ask learners to join the network. Provide them with the name of the network and the password for the network.
3. Remind learners to be careful when typing in passwords to make sure they are right.

Smartphones and tablets

Smartphones and tablets are two examples of mobile devices. They are the most popular types of mobile devices. Clarify to learners that laptops are also considered mobile devices, but in this specific section, the focus will be only smartphones and tablets.

Smartphones and tablets function in almost the exact same way. Whilst a tablet is larger, it has many of the same features and functions as a smartphone. A smartphone is like a smaller tablet. Throughout this unit, when smartphones or tablets are discussed, assume that the same applies to the other, unless clearly stated otherwise.

Features

Discuss this list of key features of smartphones and tablets with learners:

- They use a battery, so they do not need to be connected to electricity to work. The battery will need to be charged using a power source but can go hours without needing to be charged.
- They are smaller than computers or laptops. This means users can put them in their pockets or a small bag and take them along without needing additional space or luggage.
- Tablets and smartphones use a sim card to connect to a mobile network provider.
- They can access the internet, either through cellular data (via a sim card) or through Wi-Fi.
- Their primary input comes from a touchscreen and virtual keyboard.
- They can download data from the internet.

Functions

Work through this table with learners to explain to them which functions are available on smartphones and tablets.

| Function | Tablet | Smartphone |
|--------------------------------|--------|------------|
| Making and receiving calls | ✓ | ✓ |
| Sending and receiving messages | ✓ | ✓ |

| | | |
|---|---|---|
| Connecting to the internet via cellular data, Wi-Fi or Bluetooth | ✓ | ✓ |
| Downloading data from the internet | ✓ | ✓ |
| Using apps specifically designed for the device | ✓ | ✓ |
| Connecting additional accessories | ✓ | ✓ |

Activity 1.2.3: Discuss various mobile devices

1. First, ask learners to break up into groups of no more than 10.
2. Then let learners discuss the answers to these questions in their group.

Possible questions:

- a) What are the differences between a smartphone and a tablet?
- b) What are the specific uses of each device?
3. Inform learners that there are no right/wrong answers because the idea is to share with their group what they already know/may not know.
4. Groups must now make a poster showcasing the answers to their questions
5. Each group presents their poster to the class.

Apps

As discussed in the previous lesson, one of the main functions of a mobile device is its ability to download data from the internet. Some of the most useful data that can be downloaded from the internet is in the form of apps. Apps is a shortened form of the word *applications*. Apps are types of software that do specific tasks. Apps work inside the OS to perform these tasks.

Take note:



- Some apps are completely free to use. These apps will have adverts that companies pay the app developer to put into the app. That is how they make money on free apps.
- Some apps are free to download but require a **subscription**. This is paid for once the app is downloaded to unlock all the features it has. Subscriptions can renew monthly or yearly.
- Some apps are free to download but make use of in-app purchases. This means that the user gets an app that has many basic functions but can purchase specific additional functions.
- Some apps cost money to download. The user will pay to download the app once-off and will then have access to all its features.
- Users must understand the type of apps being downloaded and the cost of those apps. Be careful not to sign-up for something that costs money accidentally.

Apps can be downloaded in two ways. Discuss each method with the learners and if possible, model this process for them.

1. Navigating to the **website** where the app can be downloaded and downloading it from there. This is risky because not all the apps available on the internet can be trusted.
2. Navigating to the **app store** that is on the device by default and downloading it from there. These apps must meet certain standards to be housed on the app store, so they are generally more trustworthy and safer for the device.



Figure 1.2.6 – Apps on a smartphone

Once an app has been downloaded, it will appear as an **icon** on the screen of the device. To launch the app, the user clicks on the icon. Some apps require the user to have an account. Explain to learners that in the next unit, they will be taught how to set up accounts on their device. For now, the focus is on understanding the variety of apps available and how to use them.

There are five main categories of apps. Work through each category with learners and discuss how to use the popular examples given.

Communications

Communication apps are used to communicate with others through calls, messages, emails, chats, and social media. Most devices have default phone, email, and text message apps specifically developed by the device manufacturer for that device. Additionally, users can

download other email apps, social media apps, and chat apps. Make sure learners understand that the examples given are not the only apps available in that category.

Explain to the learners that email apps are linked to the email address that the user has. Some popular email apps that can be downloaded, in addition to the default email apps on the device are:

Gmail for use with a Google email address.



Microsoft Outlook for use with a Microsoft email address.



Make sure learners understand what 'social media' means. Social media refers to a specific set of online communities that millions of people are part of every day. People create profiles online and then engage with people in their community, often using apps. Some popular social media apps that can be downloaded are:

Facebook for use with a Facebook account.



Instagram for use with an Instagram account.



Twitter for use with a Twitter account.



TikTok for use with a TikTok account.



Explain the difference between text message apps and chat apps. Chat apps use mobile data to send and text message apps have a cost set by the mobile network provider. Some popular chat apps that can be downloaded are:

WhatsApp for use with a phone number.



Telegram for use with a phone number.



Utilities

These are apps like alarm, camera, calculator, calendar, reminders, flashlight, weather and more. Most utility apps are installed on the device by default and additional ones can be downloaded as they are needed. Go through the utility apps available with learners on their provided devices.

Productivity

These are the apps used to complete specific, usually work-related tasks. Remind learners that they covered word processing, spreadsheet, and presentations software in Unit 1. There are apps for those specific types of software, and they fall into this category. Explain again that a lot of these apps are loaded by default, along with the OS.

Media

Media refers to apps like music players, **podcast** players, and photo and video galleries. Go through the media apps available with learners.

- **Music player:** allows the user to download music and listen to it on the device.
- **Podcast player:** allows the user to download podcasts and listen to them on the device.
- **Photo and video gallery:** stores the photos and videos the user took using the camera, as well as any others the user downloaded from the internet.

Games

Apps can also be a source of entertainment in the form of games. There are many games available for download, but many of them can drain the battery of the device quickly or cost a lot of money. There are different types, such as puzzles, strategy, multiplayer and action.

Activity 1.2.4: Investigate and use apps on a mobile device

1. Using their device, learners write a list of all the apps currently available on the device.
2. Learners then categorise each app according to the categories provided.
3. Show learners how to browse to the app store on their device.

4. Let them find one additional app for each category that they would like to download.
5. Pairs or groups now share their answer with the class or with other pairs or groups.

Settings

Explain to learners that all devices have basic settings that can be changed. Settings refer to the way that a user can change the way the app, software or hardware look or function to suit the user's preferences. There are many settings on a device, usually the user can change the settings of nearly every app or software loaded on the device. Explain to learners that this lesson will focus on two main categories of settings: **personalization**, and privacy and security.

Personalization

Begin this section by explaining the concept of personalization to learners. Personalization means making something meet an individual's specific requirements. With any device, the user can change certain settings to make it suit their needs or wants better. Guide learners to the settings menu of their device. Then work through this table with learners and explain the most common types of personalization settings to them.

| Personalization | Explanation | Example |
|--|---|--|
| Change the screensaver or lock screen | Screensavers or lock screens can have a picture of the user's choice on them. This is what the user will see when the screen is locked. The user must have the picture saved on the device and can then select it in the relevant menu in settings. |  |

| | | |
|---|---|---|
| <h3>Change the wallpaper</h3> | <p>Just like screensavers or lock screens, wallpapers are pictures of the user's choice. This is what the user will see when the device is unlocked. The user must have the picture saved on the device and can then select it in the relevant menu in settings.</p> |  |
| <h3>Change notifications</h3> | <p>Apps and software use notifications to alert the user of any important communication they receive. The user can change the settings for specific apps or for the whole device. This usually has three parts:</p> <ol style="list-style-type: none"> 1. A banner that pops up on the screen with a summary of the notification. 2. A badge that tells the user which app is sending the notification and which notifications have been missed. 3. A pop up on the home or lock screen of the actual message. |  |
| <h3>Change ringtones and alert tones</h3> | <p>Users can change the sound they hear when they receive a phone call, message, or notification from an app. Most devices have pre-loaded ringtones or alert tones, but on some devices, users can also upload their own sounds.</p> |  |

Privacy and security

Begin this section by explaining the concept of privacy and security to learners. Make sure they grasp the concept and its importance before moving on.

- **Privacy:** In this context, it means having the ability to choose how much of the user's personal information is shared by apps, software, and the device. It also means being able to decide what will be done with that personal information. With digital devices, and all the apps and software on them, the world is more connected than ever. However, that is not always a good thing. One danger is that personal information may be collected and sold without the user even being aware of it. Another danger is that personal information could be too easy to access and put people in danger.
- **Security:** As mentioned a few times in this unit, not all apps or software can be trusted. Most digital devices contain a lot of personal information that must be protected from potential **hackers**.

Activity 1.2.5: Discuss user privacy and security

1. Read the following paragraph to the class.

Platforms like Facebook, Instagram, Twitter and TikTok are free to use. But how do they make money as businesses? Easy. They allow advertisers to pay to run adverts on their platform. On Instagram, every fourth post is a sponsored post that has been paid for by the advertiser. But that isn't all. They also collect personal information from users, like what products they are looking up online, where they are planning to travel to and much more. They sell this information to companies who can then target their adverts to the people they believe are most likely to buy them.

2. Suggested questions for group debate.
 - a) Should companies be allowed to sell the personal information of their users?
 - b) How would you feel about your personal information being sold?
 - c) Would you like or dislike adverts that are very specific and targeted at you?

Work through this table with learners. Guide them to these settings on their devices and give them time to look through the settings carefully.

| Setting | Explanation |
|----------------------------|--|
| Locations services | This can be turned on or off depending on whether the user wants apps and software to be able to see where they are using it from. |
| Sharing information | This is the biggest category, and each app or software might have their own settings for this. Most apps request access to certain information. The user can choose whether to share this information or not. It can include contact lists, calendars, photo, and video gallery, saved files, camera, and microphone. |
| Passwords | Most devices have an option to include a password to make sure that only users with the password can access the device. On phones or tablets, this is often a numerical code. On laptops or desktop computers, this can be made up of letters, numbers, and symbols. Users must make sure the password is not too weak so that hackers will not be able to easily gain access to the device. |

Explain to learners that in the next unit, when they are given the opportunity to set up specific email, social media, or chat accounts, they will be shown how to control their privacy on those platforms.

Activity 1.2.6: Set the password on a mobile device

1. First, let learners break up into pairs or small groups of no more than 5.
2. Guide learners to the settings menu on their device.
3. Encourage learners to experiment by changing their lock screen and wallpaper to one of the pre-loaded pictures.

4. Ask learners to read through the privacy and security settings on the device. Give them enough time to understand each one and ask if they have specific questions.
5. On their own, ask learners to come up with a strong password. The password must contain:
 - a) one or more uppercase letter (ABCDEF...)
 - b) one or more lowercase letter (abcdef...)
 - c) one or more symbol (@#\$%&*)
 - d) one or more number
6. Explain to learners that they must keep this password safe and not share it with anyone.

Knowledge and skill checklist



I know about the different device types and operating systems.

| | |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |
|--------------------------|--------------------------|

I can use mobile internet.

| | |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |
|--------------------------|--------------------------|

I can use the basic functions of a smartphone or tablet.

| | |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |
|--------------------------|--------------------------|

I can use a variety of apps.

| | |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |
|--------------------------|--------------------------|

I understand the different settings on different mobile devices.

| | |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |
|--------------------------|--------------------------|

I understand security and privacy settings on different devices.

| | |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |
|--------------------------|--------------------------|

3

Introduction to the internet



| | | |
|--|--------------------------|---|
| | Duration | 4 hours |
| | Objectives | <ul style="list-style-type: none">• Connect a device to the internet.• Locate the browser icon on a device and find a website.• Understand mobile internet vs. Computer internet.• Understand the basic components of a website.• Set up an email account on different devices / platforms.• Set up a social media account on different devices / platforms.• Set up a chat account on different devices / platforms. |
| | Content | <ul style="list-style-type: none">• Introduction to the internet• Going online• Setting up accounts |
| | PowerPoint slides | Use this link to access the PowerPoint slides deck for this unit. |
| | Lesson Plan Guide | <ol style="list-style-type: none">1 Introduction to the internet (45 minutes)2 Going online (90 minutes)3 Setting up accounts (90 minutes)4 Consolidation (15 minutes)5 Knowledge and Skills Checklist |

Additional online resources

- What is the internet?
<https://edu.gcfglobal.org/en/internetbasics/what-is-the-internet/1/>
- What is the internet?
https://encrypted-vtbn0.gstatic.com/video?q=tbn:ANd9GcRTFNTu3KDdhf_AvSI5FdowLReFOzAhXDjB_g
- Google account set-up
<https://support.google.com/accounts/answer/27441?hl=en>
- Microsoft account set-up
<https://support.microsoft.com/en-us/account-billing/how-to-create-a-new-microsoft-account-a84675c3-3e9e-17cf-2911-3d56b15c0aaaf>
- Facebook account set-up steps
<https://www.facebook.com/help/mobile-basic/188157731232424>
- Instagram account set-up steps
<https://help.instagram.com/155940534568753>
- Twitter account set-up steps
<https://help.twitter.com/en/using-twitter/create-twitter-account#:~:text=Go%20to%20twitter.com%2Fsignup.&text=Click%20the%20sign%20up%20button.&text=A%20Create%20your%20account%20pop,phone%20number%20or%20email%20addresses.>
- TikTok account set-up steps
<https://support.tiktok.com/en/getting-started/creating-an-account>
- WhatsApp account set-up steps
<https://www.whatsapp.com/coronavirus/get-started>



Teaching notes

Introduction to the internet

Start this lesson by explaining to learners that they will be using a lot of what they have learnt already to take the next step. Explain to learners that they will now be learning to browse the internet. To ensure they feel equipped, remind them that they have already learnt how to do the following:

- use a computer
- identify hardware, like computer components and accessories
- understand software, like operating systems

- create and edit documents, spreadsheets and presentations using software
- use different internet-enabled mobile devices, like smartphones, tablets, and laptops
- use a variety of apps on mobile devices
- understand the different settings on mobile devices.

Mobile internet and computer internet

Remind learners about what they learnt in the previous lesson about mobile internet. Mobile internet is internet that can be accessed on a mobile device from anywhere. There are two main ways that a mobile device can connect to mobile internet, through Wi-Fi or a mobile network.

In this lesson, learners will compare mobile internet to computer internet. Computer internet is not mobile, meaning it cannot move as easily and freely. Work through this table with learners to explain the differences to them. Point out that laptops are a blend of the two and can use mobile internet and computer internet.

| Mobile internet | Computer internet |
|---|--|
| Laptop, tablet, and smartphone | Laptop, desktop computer |
| The device does not need to have a cable (or wire) to connect to the internet. It is wireless. | The device connects to the internet using a cable. It is wired. |
| The device connects using Wi-Fi or a mobile network. | The device connects using an ethernet port or a USB Wi-Fi adapter (a computer accessory). |
| Internet is available while the user is on the move, taking the device with them. | Internet is only available in the location where the device stays and where it connects to the cable. |
| The user connects to the internet by navigating to the network settings and joining a Wi-Fi network or activating mobile internet with their mobile network provider (for example, MTN, Airtel or Lyca Mobile). | The user connects to the internet by plugging the ethernet cable into the ethernet port on their device. |

An ethernet port is a place on the computer where the user can plug in a cable that is connected to the internet. This allows the computer to access the internet.



Figure 1.3.1 – Ethernet cables



Figure 1.3.2 – Ethernet port on a laptop

Connect a device

In the previous lesson, learners were taught how to join a Wi-Fi network. Remind them of the steps:

1. Navigate to network settings on the device.
2. Find the network.
3. Type in the password.
4. Go online!

Explain to them that when accessing the internet using an ethernet cable, there will be no need to find the network or enter the password since the device is physically connected to a network.

Activity 1.3.1: Connect a device to the internet using a cable

1. Show learners where to find the ethernet port on their device.
2. If one is available, show learners where to find the ethernet cable they will use.
3. If possible and a cable is available, guide them to plug it in carefully and safely. Remind them to not plug it out and in without reason.

Going online

Once learners have connected their devices to the relevant internet network, it will be time to go online and browse the internet. Remind learners what a mobile network is. A mobile network is a regional or national network that connects devices with sim cards to each other through cellular data using towers that send and receive radio signals from the sender to the receiver. These interconnected towers form a network.

Remind learners what a Wi-Fi network is. A Wi-Fi network is a wireless network that exists in a mall, local area like a house or an office building. A Wi-Fi network is created when a router connects to an internet service provider by wire or cable and then sends radio signals to nearby devices.

Now, explain to learners that the internet is a network of networks that connects millions of computers worldwide.



Figure 1.3.3 – The internet connecting the world

Browsers

If a user wants to browse the internet, they use a browser. A browser is an app or a type of software that allows the user to access the World Wide Web. The World Wide Web is the part of the internet that has websites and webpages. Almost all devices have a default browser installed as part of the operating system.

- Apple devices that use the iOS or MacOS operating system have the Safari browser.
- Devices that use the Microsoft operating system have the Microsoft Edge browser.

Two other popular browsers that can be downloaded to any device are Mozilla Firefox and Google Chrome. Just like other apps or software, there will be an icon on the device.



Figure 1.3.4 – Apple Safari, Microsoft Edge, Google Chrome, Mozilla Firefox icons

Websites

Before learners explore websites, make sure they understand these important concepts.

- **Website:** a group of connected webpages that all exist in one space
- **Webpage:** a separate place on the website with specific content.
- **Landing page:** the first webpage the user sees when going to a website.
- **Links:** it is also called a hyperlink and it is a word or buttons that sends the user to another place on the internet.

Now that learners understand the role of browsers, explain to them that when they open their browser, they will go to a website. For this lesson, use a very simple webpage like the Google landing page.

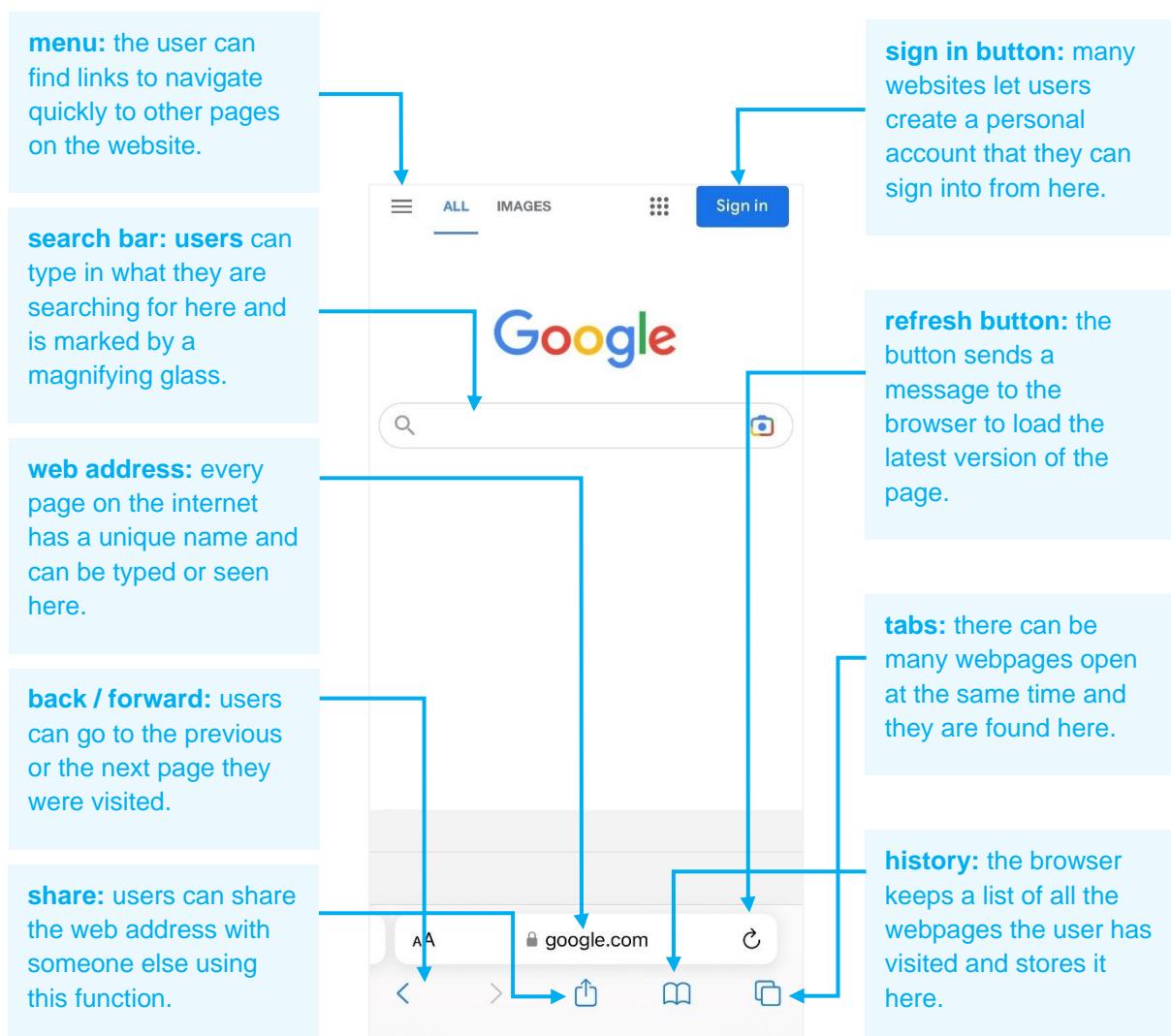


Figure 1.3.5 – The Google landing page on a mobile Safari browser

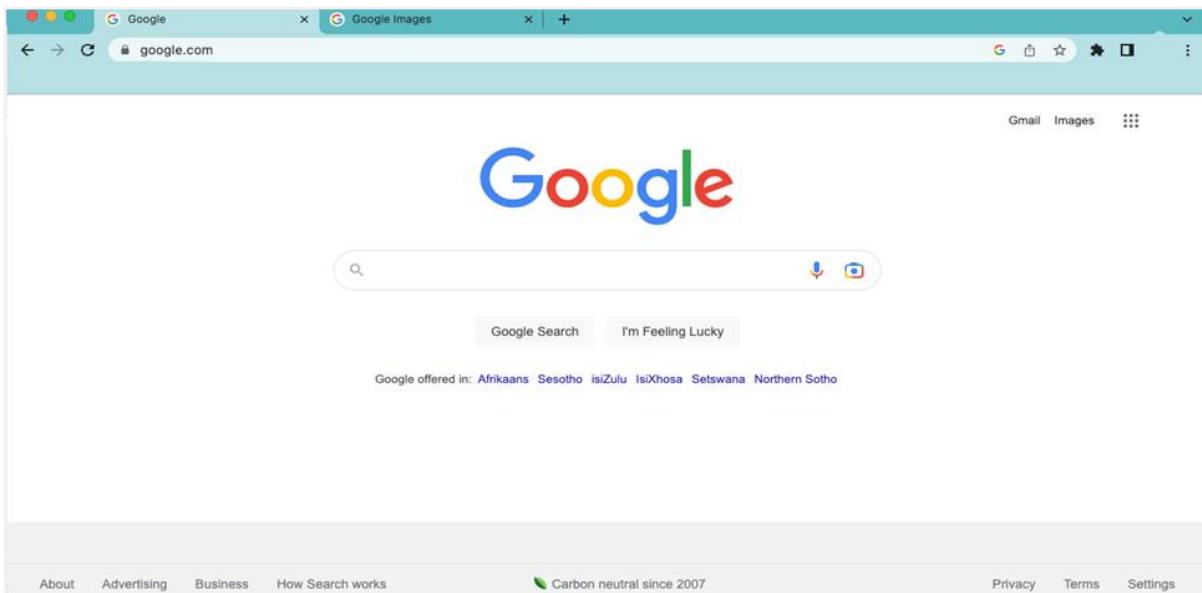


Figure 1.3.6 – The Google landing page on a computer Chrome browser

Take note:



- Web addresses start with www. This is short for world wide web.
- Web addresses have different endings. Sometimes they show which country the website is from, for example:

.ug is an Ugandan website

.org is used for non-profit organisations

Activity 1.3.2: Access a browser and navigate the webpage

1. First, ask learners to break up into groups of no more than ten. Make sure each group has at least two devices.
2. Show learners where to find the browser installed on their device.
3. Ask learners to open the browser and navigate to this website: www.unicef.org
4. Let them identify these features on the webpage: menu, search bar, web address, back / forward, share, history, tabs, and refresh button.

Setting up accounts

Remind learners about the sign in function they learnt about in the previous lesson. Many websites allow users to set up a personal account for their website. Today, many websites have an app or software equivalent for users to set up an account. Explain to learners that in this lesson, they will learn how to set up an email account, a social media account and a chat account. For each, learners will be shown how to do it on one or two of the most popular **platforms**. This will equip them to be able to transfer what they have learnt to other platforms.

Email

Begin by asking learners if they can remember which two popular email platforms they learnt about in the previous lesson. In this lesson, they will learn how to create an account. These are the basic steps:

1. **Go to the sign-up section of the email platform:** it can be on the app or software that is on the device or on the website.
2. **Complete personal details:** it will include names, some contact details and sometimes date of birth.
3. **Choose a username:** it will be the first part of the email address, for example in this email address john.smith@gmail.com, **john.smith** is the username.
4. **Choose a password:** it will keep the account safe and ensure only people with the password can sign into it.
5. **Confirm the password:** type in the same password again to make sure it is typed correctly.
6. **Read and agree to the Terms and Conditions:** these are the rules that the platform has for how the user must behave when using the platform as well as how the platform promises to treat the user.

Take note:

- When choosing a **username**, make sure it is:



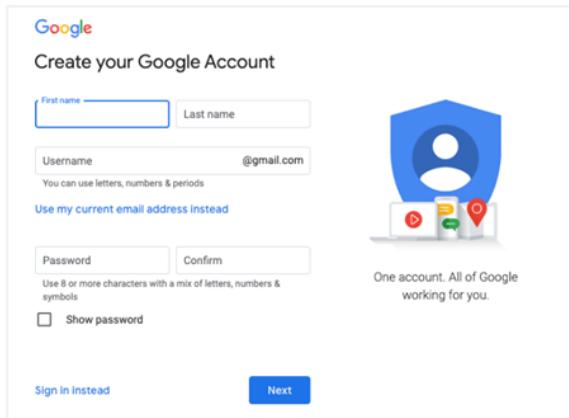
- Specific – it contains a name or a surname.
- Professional – it is appropriate to use in all aspects of life.
- Unique – it belongs only to the user and cannot be confused easily.

Take note:



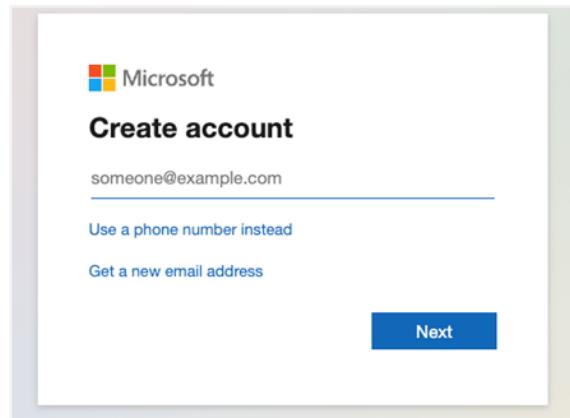
- When choosing a **password** make sure it is a strong password that contains:
 - one or more uppercase letter (ABCDEF...)
 - one or more lowercase letter (abcdef...)
 - one or more symbol (@#\$%&*)
 - one or more number.

Most email account platforms will provide very clear steps to the user throughout the process. Encourage learners to read carefully and follow the steps. The process is quick and easy.



The screenshot shows the Google 'Create your Google Account' sign-up page. It features fields for First name and Last name, a Username field (example: @gmail.com), and Password fields (Password and Confirm). Below these are links for 'Use my current email address instead' and 'Show password'. At the bottom are 'Sign in instead' and 'Next' buttons.

Figure 1.3.7 – Google sign-up page



The screenshot shows the Microsoft 'Create account' sign-up page. It has a single input field for an email address (someone@example.com), with options to 'Use a phone number instead' or 'Get a new email address'. A 'Next' button is at the bottom right.

Figure 1.3.8 – Microsoft sign-up page

Social media

Social media platform sign-ups function in much the same way as email platforms. Learners should be getting more confident in the sign-up process as they work through the different platforms. These are the basic steps:

1. Go to the sign-up section of the social media platform.
2. Complete personal details.
3. Choose a username.
4. Choose a password.
5. Confirm the password.
6. Read and agree to the Terms and Conditions.

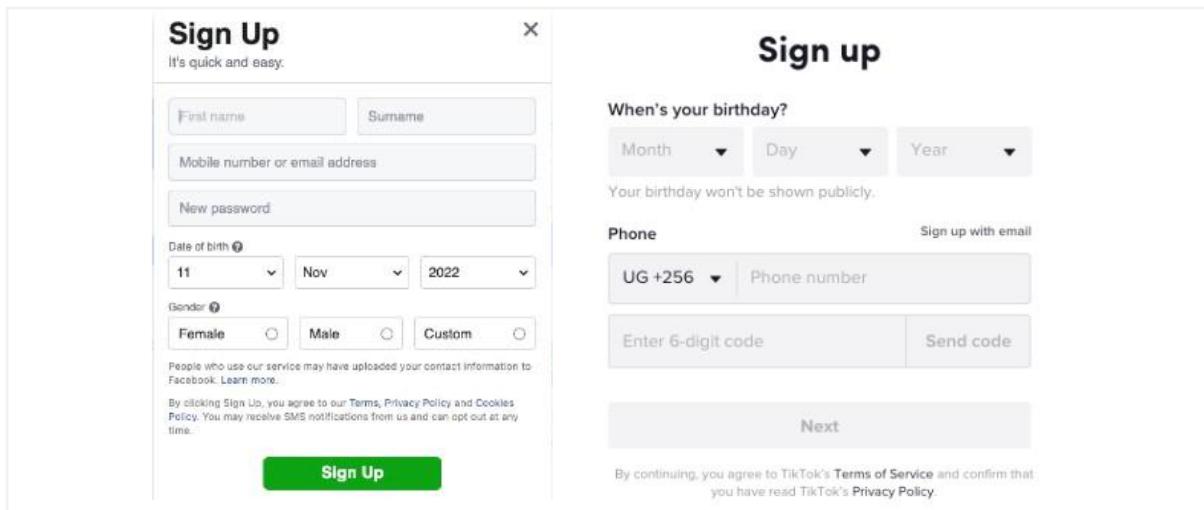


Figure 1.3.9 – Facebook and TikTok sign up pages

Chat

The primary difference between social media platforms and chat platforms is that chat platforms are mostly linked to the user's phone number so the process is slightly different. These are the basic steps:

1. Launch the chat app or software
2. Read and agree to the Terms and Conditions.
3. Enter the phone number.
4. A verification code will be sent from the app to the provided cell phone number.
5. Complete registration with the verification code.

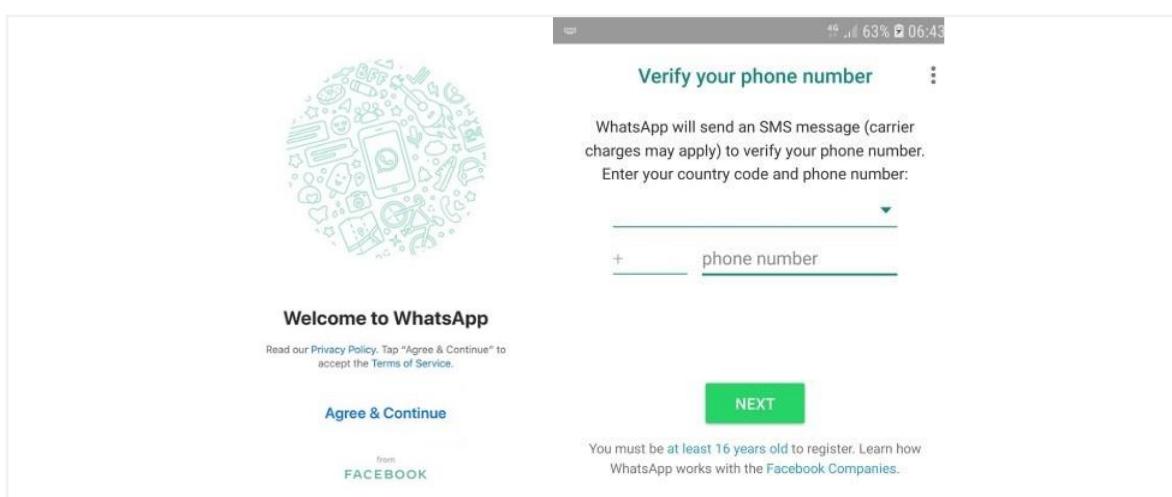


Figure 1.3.10 – The first two steps in the WhatsApp sign-up process

Once the accounts have been set up, explain to learners that there is much more they can do. Work through this table to give learners an idea of some of the other steps they can take in setting up their accounts.

| Optional set-up | Explanation |
|-----------------------------|---|
| Profile picture | It is a picture that can be seen by people on the platform that identifies the user. |
| Cover picture | It is the picture that forms a banner on the personal profile of the user, usually specific to social media profiles. |
| About / Intro / Bio | A short introduction to the user. |
| Personal information | Some users choose to include their birthdays, location, workplace, education, and relationships on their profile. |

Remind learners that they must be careful with what they share on the internet. It is nearly impossible to remove anything from the internet once posted. This could affect the reputation and future work prospects of the user. Make sure that the content being shared is appropriate.

It is a good idea to draw learners' attention once more to the security and privacy settings they learnt about in the previous unit. These are especially important on email, social media, and chat platforms. Encourage learners to review their settings to make sure they are happy with them.

Activity 1.3.3: Create an email account and join a social media platform

1. First, ask learners to break up into pairs or groups of no more than five.
2. Guide learners to the sign-up page of one email platform, one social media platform and one chat platform.
3. Let them set up an account for each of these platforms.
4. Guide them to review their privacy and security settings.

Knowledge and skill checklist



I can connect a device to the internet.

I can find the browser and go to a website.

I understand the difference between mobile and computer internet.

I understand the basic components of a website.

I can set up an email account.

I can set up a social media account.

I can set up a chat account.

Module 1 assessment guidance

Assist learners to set up where needed. Ensure that they know what they need to do and what is expected of them.



Materials needed

- Laptop or tablet with an internet connection
- Paper and pen.

Unit 1: Basics of a computer

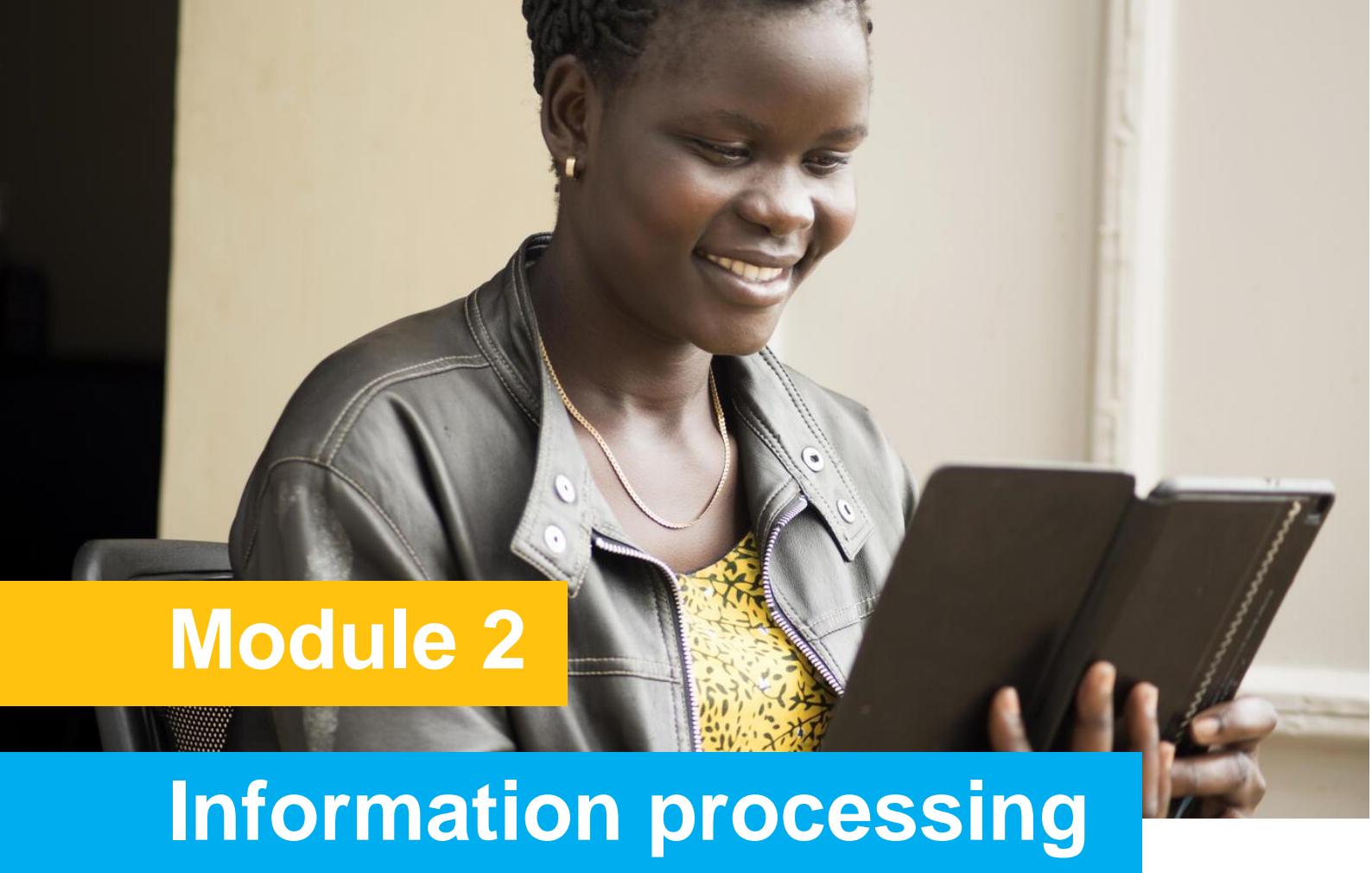
1. Learners demonstrate that they can start up their device and login.
2. Learners create a blank document using the word processing software on their device.
3. Give the learners these instructions. Assess their documents once they are done.
 - a) Find out what OS your device uses. Type the name of the Operating System (OS) in your document.
 - b) Type how you found out the OS used on your device.
 - c) Change the font type to Comic Sans and the font to 20pt.
 - d) Format it in bold.
4. Learners create a blank spreadsheet using the spreadsheet software on their device.
5. Give learners these instructions. Assess their spreadsheets once they are done.
 - a) Merge cells A1 to C1. Fill it with any shade of blue.
 - b) Type 753 in cell A2 and 951 in cell B2. Use the =SUM function to multiply the numbers.
 - c) Change the font colour of cell C2 to any shade of green.
 - d) Put a border around cells A2 to C2.

Unit 2: Basics on an internet-enabled mobile device

6. Learners create a blank presentation using the spreadsheet software on their device.
7. Give learners these instructions. Assess their spreadsheets once they are done.
 - a) Add a new slide.
 - b) Type your name in the *title* placeholder on the first slide.
 - c) List four computer components in a bulleted list in the *subtitle* placeholder. Make sure there is one component for each of these: input, output, processing, and storage. Right align the text.
 - d) Insert an image of a computer on the second slide.
1. Tell learners whether their devices use a mobile network or Wi-Fi to connect to the internet.
2. Learners find an app on their device for each of these categories. They should write these down or type them into a blank document.
 - a) Communications
 - b) Utilities
 - c) Productivity
 - d) Media
 - e) Games
3. Learners demonstrate that they can change one personalization setting on their device.
4. Learners demonstrate that they can navigate to the privacy and security settings.
5. Learners write down a strong password for you to assess.
(Note: This password should not be a real password that they are using! Explain that it is just to demonstrate that they understand the characteristics of a strong password.)

**Unit 3:
Introduction to
the internet**

1. Learners demonstrate that they can check that their device is connected to the internet. If not, they demonstrate that they can connect it.
2. Learners open the browser app on your device and go to www.google.com.
3. Give learners these instructions. They need to demonstrate to you that they can do the following:
 - a) Find the sign-in button and sign into the account you set up in class.
 - b) Click on the back button until you are back on the landing page.
 - c) Shut down your device.
4. Learners write down three sentences on this topic: How to set up a social media account. Assess their sentences.



Module 2

Information processing

This module will introduce learners to online searching procedures, focusing also on how to evaluate, store, retrieve, and use the information responsibly.

Please note that practical activities described in each unit might require the support of a facilitator. Although the information presented is written in a way that is easy to understand, some actions, adjacent to the information presented, may also necessitate supervision and support from a facilitator.

Additional activities have been provided for learners (these are called **Skills to practise**). These activities provide learners with opportunities to further explore and consolidate what they have learnt in class. Set aside a few minutes at the start of each lesson to discuss the learners' own independent practice of these skills and their findings.

This module includes the following units:

| | |
|---------------|---|
| Unit 1 | Browsing, searching and filtering data, information and digital content |
| Unit 2 | Evaluating data, information and digital content |
| Unit 3 | Managing data, information and digital content |

Learning outcomes

Learners should be able to:



- Articulate information needs.
- Search for data, information and content in digital environments, to access and navigate between them.
- Create personal search strategies.
- Update personal search strategies.

Resources



- Training manual
- Computer with internet access
- Flipchart papers
- Markers

Suggested teaching methods



- Presentation by facilitator
- Group exercise / Discussion / Debate
- Working in pairs / Small groups
- Presentation by learners



New terminology to explain

These are terms that learners may not be familiar with. They should be explained within the context that they may be used.

accessing

sourcing or finding

audio

voice

| | |
|-------------------------|--|
| blog | online journal where an individual, group, or company can present a record of activities, thoughts, or beliefs |
| browser | software that allows a computer user to use and view the internet |
| Clickbait | internet content whose main purpose is to attract attention and encourage visitors to click on a link to a particular web page |
| computer network | computers connected to each other |
| data | information |
| device | computing machines, e.g., smart phone, laptop, tablet, PC |
| e-banking | electronic or online banking |
| fake news | false or misleading information presented as news |
| hardware | devices or machines |
| interface | what you see on the screen and actions you complete to complete a task |
| news portal | websites that focus entirely on news |
| peer-reviewed | evaluation of scientific, academic, or professional work by others working in the same field |
| process | use |

| | |
|--------------------------|---|
| remote | working or learning away from colleagues, using the internet to connect |
| search engine | a software program that helps people find the information they are looking for online using keywords or phrases |
| search strategies | plans or tactics |
| search terms | key words |
| software | computer programs |
| TCP/IP protocols | Transmission Control Protocol/Internet Protocol and is a suite of communication protocols used to interconnect network devices on the internet. |
| transfer | communication or movement |
| URL | another word for website address |
| vlog | a personal website or social media account where a person regularly posts short videos. |
| webinar | seminar presented online: web + seminar |

1

Browsing, searching and filtering data, information and digital content



Duration

4.5 hours



Objectives

- Identify what information is needed.
- Look for information online through a simple search.
- Find how to access information and content sources.
- Navigate between information and content sources accessed.
- Identify simple search strategies.



Content

- Main concepts: IT, ICT, and internet
- Introduction to searching online
- How to start searching
- Search strategies



PowerPoint slides

Use [this link](#) to access the PowerPoint slides deck for this unit.



Lesson Plan Guide

- 1 Content: Main concepts IT, ICT, the internet (45 minutes)
- 2 Introduction to searching online (45 minutes)
- 3 How to start searching (30 minutes)
- 4 Search strategies (90 minutes)
- 5 Consolidation (15 minutes)
- 6 Knowledge and Skills Checklist

Additional online resources



- IT online training – <https://edu.gcfglobal.org/en/subjects/tech/>
- Tutorial “Using search engines” – <https://edu.gcfglobal.org/en/internetbasics/using-search-engines/1/>
- How to search the internet effectively (1) – https://mediasmarts.ca/sites/default/files/pdfs/tipsheet/TipSheet_How_Search_Internet_Effectively.pdf
- How to search the internet effectively (2) – https://mediasmarts.ca/sites/default/files/tip-sheet/tipsheet_we_are_broadcasters.pdf

Teaching notes

Main concepts: IT, ICT and internet

To introduce this unit, present these three main concepts:

1. Information Technology (IT)

The technology that we use to collect, **process**, protect and store information. It refers to hardware, software, and **computer networks**.

2. Information and Communication Technology (ICT)

The **transfer** and use of all kinds of information.

Lead a discussion with the learners about ICT is the foundation of economy and a driving force of social changes in the 21st century. Explain how distance is no longer a problem when it comes to **accessing** information; for example, working-from-home, distance learning, **e-banking**, and e-government are now possible from any place with an Internet connection and a computing device.

Take note:



ICT includes all technical means that are used for handling information and simplifying communication, including computers, network hardware, communication lines and all the necessary software.

In other words, ICT includes information technology, telephony, **electronic** media, and all types of process and transfer of **audio** and video signals, and all control and managing functions based on network technologies.

3. Internet

The internet ("network of all networks") is a global system made up of interconnected computers and computer networks, which communicate by means of using **TCP/IP protocols**.

Discuss with the learners that although the internet developed from the need for simple data exchange, today it affects all areas of society, for example:

- **Economy:** Internet banking (paying bills, transferring money, access to account, access to credit debt and so on), electronic trading (stocks, various goods and so on).
- **Socializing:** social networks, forums like Facebook or Twitter.
- **Information:** **news portals**, **blogs**, some blogs operate mainly as news filters, collecting various online sources and adding short comments and Internet links and so on.
- **Healthcare:** diagnosing disease, medical examinations (for people living in rural areas, some examinations, that require a specialist doctor, can be done **remotely**, making appointments for medical examinations, the exchange of medical **data** between hospitals and institutes, surgery, and remote surgery monitoring).
- **Education:** online universities with **webinars**, websites with tutorials, expert advice, online training and so on.

Highlight to the learners the many applications and huge social impact of the internet. Ask the learners to reflect on how the internet may affect them and their personal life.

Discuss the collaborative nature of the internet and how the sharing of information and ideas is fundamental to its impact. Introduce the next concept of searching online by asking learners how they would access all this information.

Introduction to searching online

The ability to search for information online is one of the most important digital literacy skills. It allows one to quickly find what you are looking for without having to sort through pages of useless results.

Show learners that the most important tool in this process is the search engine. Explain that search engine is a specialized website that searches for information across the internet. List the popular tools, such as Google, Yahoo!, and Bing, and explain that while each of them is useful, they can also produce different results.

Overall, Google is the most popular search engine. It is so popular, in fact, that it has become a common verb, like when someone says, "I'm googling the address right now".

Activity 2.1.1: Brainstorm search strategies

1. To introduce the subject of online searching but also to gather an idea of where learners are in terms of common knowledge, start this unit with a brainstorming session.
2. Make sure you have a whiteboard ready to register everyone's inputs.
3. Inform the learners that there are no right / wrong answers because the idea is to share with the group what they already know, and to realize what they may not know. Possible questions:
 - a) What is an online search?
 - b) How may this knowledge be helpful on our daily lives?
 - c) How does information end up on the internet?

How to start searching

Demonstrate to learners that to start a search, you will need to click on a **browser**. A browser is a software application that allows a computer user to find and view information on the Internet. There are different ones available to users. Internet Explorer, Mozilla's Firefox, and Chrome are just some of them and you can usually find them at the bottom line of your computer's desktop.



Figure 2.1.1 – Icons of some browsers.

Go to the search engine's homepage, for example www.google.com, and type the **search terms** into the text box. To see the results, show the learners that you need to press the Enter key, or they can click an icon, such as the Google Search button or a magnifying glass.



office supplies



Figure 2.1.2 – Google homepage.

Depending on the browser, learners may be able to conduct a search right from the browser's **interface**. For example, in Chrome, one can enter the search term directly into the address bar. In Google Chrome (pictured below), you can use either the address bar or the built-in search bar to start a search.

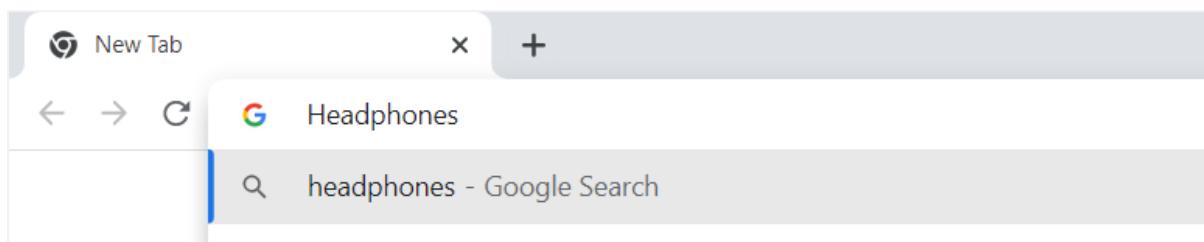


Figure 2.1.3 – Using the Chrome address bar to search

Activity 2.2.2: Use a search engine

1. Show learners one of these web browsers: Google Chrome, Safari, Mozilla Firefox, Edge, explaining these are software programmes to access the World Wide Web and navigate through different pages; show learners where they can find the browsers in a computer.
2. You can also use the following tutorial to introduce the topic of how to use a search engine: <https://edu.gcfglobal.org/en/internetbasics/using-search-engines/1/>
3. Ask the learners to search using the search term ‘house’.
4. Now, ask them to be more specific about the type of house they want information about. They can add descriptors, such as ‘red’, ‘brick’ or a location, such as ‘African’, ‘American’.
5. Inform learners that there are no right/wrong answers because the idea is to share with the group what we already know/may not know. Possible questions:
 - a) How many search results did you find?
 - b) Which results were most useful? Why?
 - c) Did you change your key words for the search? Why?
 - d) How did the information change when you adapted the key words in your search?
 - e) What have you learned from this exercise when it comes to search strategies and searching for information online?

Search strategies

Explain to the learners that with a few basic **search strategies**, you can usually find almost anything you want. It does not matter if you are using Google or any other search engine because these techniques are effective no matter where you search.

Highlight these three tips for searching:

- **Keep it simple:** Make searches brief by focusing on keywords. Keep the number of these keywords to a minimum. This ensures more relevant results.
- **Consider suggestions:** Search engines will suggest the most popular results involving the term as you type in your search terms. Advise learners to not be afraid to select one, as these suggestions often give plenty of new ideas.
- **Use natural language:** Search engines recognize the everyday language, you do not have to use complicated words or phrases to get results.



Figure 2.1.4 – Suggestions that appeared when the user typed in ‘headphones’.

If possible, show learners that depending on the search, the format of their results may vary based on what the search engine thinks will be most useful. This means the results could include maps, a portion of a Wikipedia article, lists, and more.

Search engines can find many other types of content in addition to webpages. With only a click or two, you can also search for images, videos, news, and many other types of content.

Activity 2.1.3: Explore a topic online

1. Have a list of different topics ready for learners to explore online. For example, mental health during the pandemic, the best recipes in the world, extreme sports, the importance of the bees, trees diseases, industrial revolution, robots in technology, healthy lifestyle, etc.

2. Ask learners to:
- search for relevant information across five different sources using simple search terms
 - select at least one pertinent fact, image, graphic, or video from each source visited
 - set up a short presentation (5 minutes long) ensuring they have used trustworthy sources.
3. Remind learners to keep a record of the websites and references they used as this will be assessed at the end.

Knowledge and skill checklist



I know what I would like to search.

I can search using one web browser (e.g., Google Chrome).

I can open the web browser and start my search and switch between search results of the same type.

I can select the type of search I want (all, or videos, or news, or images).

2

Evaluating data, information and digital content



| | | |
|--|--------------------------|--|
| | Duration | 4.5 hours |
| | Objectives | <ul style="list-style-type: none">• Understand that not all online information is reliable.• Detect the credibility and reliability of common sources of data, information, and their digital content. |
| | Content | <ul style="list-style-type: none">• Assess sources and information online• Evaluate your sources• Evaluate websites• Fact-check websites• Practical activities |
| | PowerPoint slides | Use this link to access the PowerPoint slides deck for this unit. |
| | Lesson Plan Guide | <ol style="list-style-type: none">1 Devices to save and retrieve information (30 minutes)2 Assess sources and information online (90 minutes)3 Evaluate your sources (75 minutes)4 Evaluate websites (60 minutes)5 Consolidation (15 minutes)6 Knowledge and Skills Checklist |

Additional online resources



- Reliability of sources:
<https://leeuniversity.libguides.com/DAL/reliability>
- How to determine credible sources:
<https://www.teachtci.com/blog/fun-strategies-for-teaching-students-how-to-determine-credible-sources/>
- How fake news is spread -
https://www.youtube.com/watch?v=cSKGa_7XJkg

Teaching notes

Assess sources and information online

By now, the learners should already have an idea of what information they can find online. In this unit, you need to show learners how to evaluate data, so they can look for reliable sources and add to sharing correct information online.

Explain that unlike information found in newspapers or on television, information available on the internet is not regulated or controlled for quality or accuracy. Therefore, it is very important for users to evaluate the source or information.

Remind learners that almost anyone can publish anything they wish to on the internet. It is often difficult to find out who wrote the content, so it is the user's responsibility to judge the accuracy of the source.

Advise learners to ask themselves these questions before using resources from the internet:

- Who is the author? Is the author qualified to write on the topic? In cases where it is an organization, is it credible? Have I heard of it?

Example: An article about how excellent skin whitener products are, written by a company who sells the product, is unreliable. An article about skin whitener products written by a well-known beautician who wishes to inform users, however, may be more reliable.

- What is the purpose of the site? Who is the intended audience?
- Is the content an information piece or an opinion piece aimed at influencing your opinion?
- Is the information and language objective, unbiased, and free of emotional expressions?
- Are the factual sources listed so information can be checked?

- Is information supported by evidence?
- How old is this information? When was the site last updated? If the site is about a war that ended 100 years ago, then it is acceptable if the article was written 10 years ago. But if the article is about the latest developments in technology, an article written three years ago would have outdated information.

Check your emotions!

Advise learners to be aware of when a small piece of writing has the power to change how they feel (e.g., “Facilitator assaults learner” as a headline). This is not only a very old method to draw your attention, but it has been used as a **clickbait** to spread **fake news**.

Human beings normally ignore the need to prove the accuracy of information when they feel strongly about the content, and researchers have found that content that causes strong emotions spreads the fastest through our social networks.



Figure 2.2.1 – An emotional response to fake news

Activity 2.2.1: Assess the reliability of information

To introduce the topic of how to assess the reliability of information we come across online, start with a quick True or False game. You will need to prepare some True/False cards and split learners into groups. You will present some statements related to a topic and each group will have to show the True or the False card, according to their answer. You may correct the answers and share information on the topics as you go along.

List of statements:

| | Statement | T/F (correct answers) |
|---|--|------------------------------|
| 1 | All information posted online is true. | False |
| 2 | Anyone can add information online, even on Wikipedia. | True |
| 3 | There are ways to check the credibility of information. | True |
| 4 | The more something is shared, more likely is to be truth. | False |
| 5 | Checking the date of the news is not something worth considering. | False |
| 6 | Personal values may influence if you believe information to be true. | True |
| 7 | It is usually very easy to identify a fake new. | False |
| 8 | There are fact-checking sites available. | True |

Evaluate your sources

Advise learners that as they search for information, they will need to evaluate the resources they find and select those most suitable. Explain that learners should examine each information source they find and assess sources using the following guidelines, also known as the TAARP method:

T – Timeliness

Resources need to be recent enough for your topic. A paper on a topic like Ebola research, needs the most recent information, but a topic such as the Ugandan Bush War could use information written in a longer time range.

A – Authority

Does the information come from an author or organization that has authority to write about the topic? Has the information been **peer-reviewed**? Do they list their qualifications? Is there enough documentation to help users determine whether the publication is reliable including footnotes, bibliographies, credits, or quotations.

A – Audience

Who are the intended readers and what is the publication's purpose? There is a difference between a magazine written for the public and a journal written for professors and experts in the field.

R – Relevance

Does the article relate to the topic? What connection can be made between the information that is presented and facts about your topic? An easy way to check for relevance is by reviewing the introduction of the article.

P – Perspective (point of view)

Biased sources can be helpful in creating and developing an argument, but make sure the sources help to understand the other side as well. Extremely biased sources will often misrepresent information and that can be ineffective if to present facts.

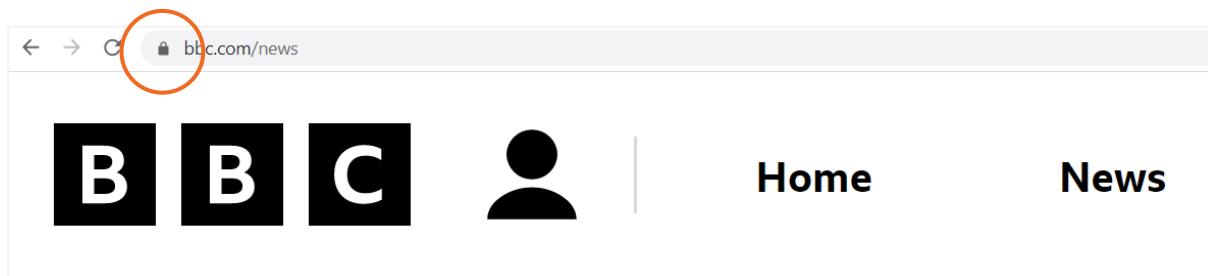


Figure 2.2.2 – A reliable and secure website will always have a lock before the URL

Activity 2.2.2: Discuss a source's reliability

Read this article to the class.

NEW DELHI: Indian scientists are studying garlic for treating Covid-19 (7 September 2021)

A research centre is researching natural garlic oil as a potential cure for Covid-19.

Garlic, a common spice for flavouring food, is also used in traditional medicine against common colds and influenza. The oil of garlic is known to possess compounds that show strong antioxidant properties.

The study may help uncover the benefits of garlic oil in treating Covid-19. "Characterization of garlic oil, including its density, was studied. End-use related studies for its educative use and consumption in management of covid-19 patients is underway," the official said.

Traditional practitioners claim that garlic is one of the most efficient natural antibiotics against viruses and bacteria.

An official said that compounds present in garlic are responsible for the immune-boosting effects of the spice. Hundreds of test patients said that they felt well after one week of garlic intake.

The daily intake of garlic may also decrease side-effects of drugs being used to treat the disease, she said.

The results suggested that garlic oil is a miracle cure, which contributes to preventing the invasion of coronavirus into the human body.

Similar studies are being done in the UK and China.

Source: <https://www.livemint.com>

Suggested questions for group debate:

en was this article published? What scientific information was available about treating
Covid-19 then?

you think this article contains accurate information?

at strategies can you use to check your beliefs?

Evaluate websites

Discuss how it is sometimes difficult to evaluate the credibility and usefulness of a website because no two websites are created the same way. Explain that the TAARP method can be used, but there are extra things to consider when looking at a website:

- **The look and feel of the website:** Reliable websites usually have a more professional look and feel than personal websites. They will not include adverts and will use formal language.
- **The URL of results:** Results with .com, .edu, .gov, .net, and .org –mean something and can help you to evaluate the quality and reliability of the website.
- **Are there advertisements on the site?** Advertisements can indicate that the information may be less reliable.
- **Check the links on the page:** Broken or incorrect links can mean that no one is taking care of the site and that other information on it may be out-of-date or unreliable.
- **Check when the page was last updated:** Dates when pages were last updated are valuable clues to its currency and accuracy.

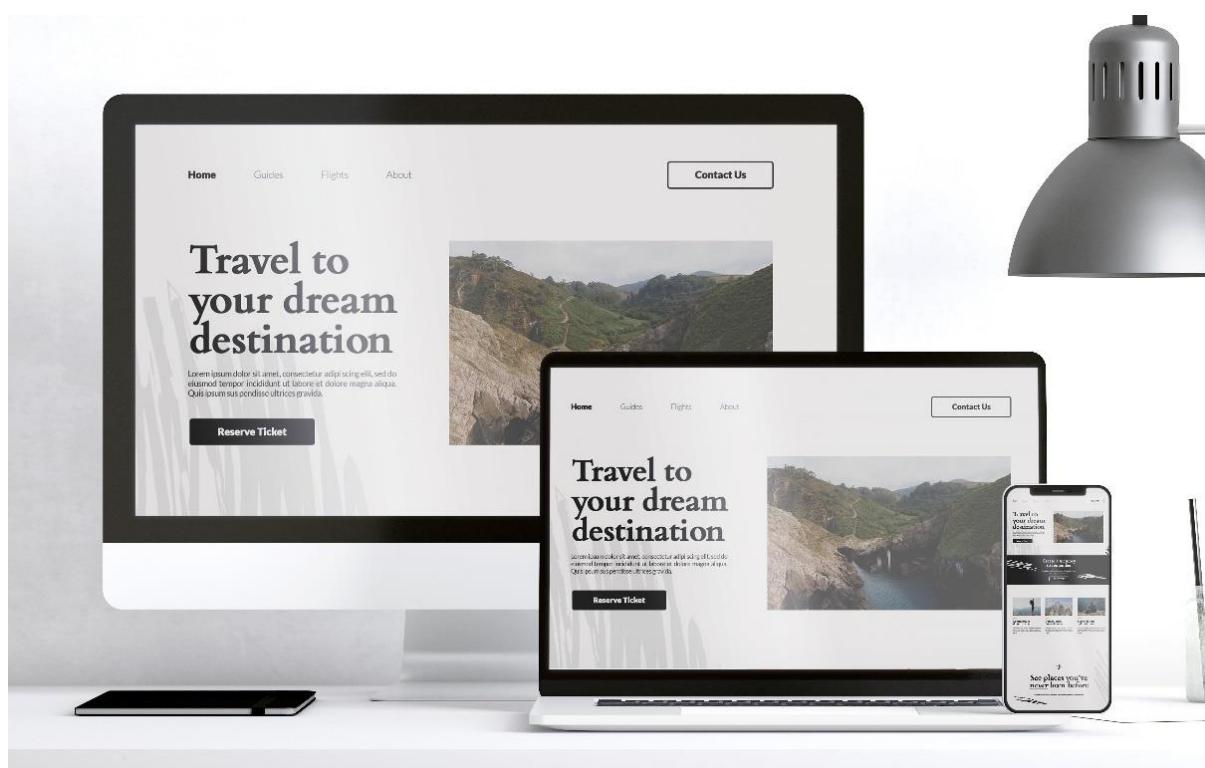


Figure 2.2.3 – The landing page of a website

Take note:

Informational resources mostly present correct information. These are usually sponsored by educational institutions or government agencies. These resources often end with .edu or .gov. Remember that Wikipedia is not considered a reliable source of information because the content can be edited by anyone.

Advocacy resources are those sponsored by an organisation that is trying to sell ideas or influence public opinion. These resources may end with .org. or .co.ug.



Business or marketing resources are sponsored by a business that is trying to sell products. These web pages are often very biased but can provide some useful information. You will usually find that these end with .com. or .co.ug.

News resources are those which provide extremely current information on news topics. Most of the time news sources are not as credible as academic journals, and newspapers differ in credibility from paper to paper. These often end with .com. or .co.ug.

Personal web pages and resources are sites including social media sites like blogs, Twitter pages, Facebook pages and so on. These sources can be helpful to determine what people are saying on a topic and what discussions are taking place. Be careful if trying to incorporate these sources directly into a factual report.

Activity 2.2.3: Review a website

Ask learners to review a website of their choosing against the following criteria:

- Look and feel
- URL
- Advertisements
- Links
- Last update

Learners can present back to the class how reliable they think the website is based on these criteria.

Knowledge and skill checklist

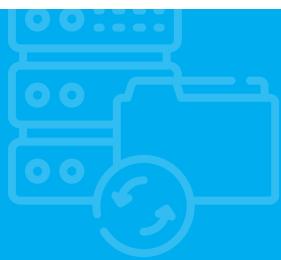


I understand that not all online information is reliable.

I can detect the credibility and reliability of common sources of data, information and their digital content.

3

Managing data, information and digital content



| | | |
|--|--------------------------|---|
| | Duration | 3.75 hours |
| | Objectives | <ul style="list-style-type: none">Save or store files or content (e.g., text, pictures, music, videos, web pages) and retrieve them once saved or stored.Recognize where to organize them in a simple way in a structured environment. |
| | Content | <ul style="list-style-type: none">Devices to save and retrieve informationPractical activities |
| | PowerPoint slides | Use this link to access the PowerPoint slides deck for this unit. |
| | Lesson Plan Guide | <ol style="list-style-type: none">1 Devices to save and retrieve information (30 minutes)2 Downloading from the internet (180 minutes)3 Consolidation (15 minutes)4 Knowledge and Skills Checklist |

Additional online resources



- Download a file from the internet:
<https://support.google.com/chrome/answer/95759?hl=en&co=GENIE.Platform%3DDesktop#:~:text=Most%20files%3A%20Click%20on%20the,file%20and%20choose%20Save%20as.>
- Save a file: <https://support.microsoft.com/en-us/office/video-save-a-word-document-fb0f9081-7c62-4fbf-954d-81b9707c0678>
- Backup files and cloud storage:
<https://www.dropbox.com/features/cloud-storage/file-backup>

Teaching notes

Devices to save and retrieve information

By now learners have learned how to use computer tools to navigate online, find different sources of information, and evaluate whether they are reliable.

Next, learners need to be shown the tools available to save their information, store and retrieve it whenever they wish.

Explain to the learners that in the same way they keep their clothing organized into drawers, there are many resources in a computer to store information. Discuss the following memory and storage devices with learners. Ideally have pictures available to show them, and ask the learners to contribute to the discussion by sharing which of these they are familiar with and what experiences they have had using them.



Figure 2.3.1 – Click on the disk icon to save a file

Memory and Storage Devices



Figure 2.3.2 – A computer ROM component

ROM (Read Only Memory)

a type of permanent, internal memory that is used solely for reading.



Figure 2.3.3 – A computer RAM component



Figure 2.3.4 – Memory cards for a camera



Figure 2.3.5 – A USB stick



Figure 2.3.6 – An internal hard drive

RAM (Random Access Memory)

a working memory in which analyzed data and programs are stored, while a computer runs. It allows reading and writing data and is deleted/cleared when the computer shuts down.

Memory card

a type of flash memory used to store data in digital cameras, smart phones, MP3 players, and so on.

USB stick

a data storage device. It is small, has a high storage capacity, is reliable and fast. It belongs to the type of flash memory that remembers data, even when not under voltage, i.e., they do not need electric power to maintain data integrity.

Internal hard drive

embedded in the computer case and is used to store data files.



Figure 2.3.7 – An external hard drive



Figure 2.3.8 – Cloud computing

External hard drive

unlike an internal drive, which is nestled firmly inside your computer, an external hard drive is a device that you plug into a computer port. An external hard drive gives you more storage space to keep your data.

Cloud Storage

a cloud computing model that stores data on the internet through a cloud computing provider who manages and operates data storage as a service.

Use external hard drives or cloud storage to backup or to copy files. This is done to protect information from being lost should the device be lost, destroyed, or stops working.

Downloading from the internet

Explain that when files are downloaded from the internet, they are automatically downloaded to the *Downloads* folder by default, unless a different location has been specified beforehand. Once downloaded, files should then be copied or moved to a folder on the hard drive that is used for similar files, for example, a folder called *Assignments* where the facilitator saves the learners' completed assignments.

Demonstrate how to create and manage folders using a file management program, such as File Explorer in Windows® 10.

Get learners to note that the local hard drive, the hard drive on the actual computer device, is always labelled (C:). This is where the operating system is stored, as well as program and user files.

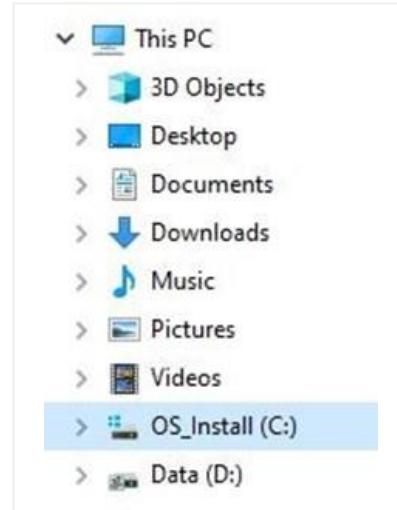


Figure 2.3.9 – A devices internal hard drive is always called (C:)

The File Explorer icon is on the bottom left-hand corner of your taskbar.



Figure 2.3.10 – File explorer

Advise learners to follow these guidelines when downloading from the internet.

- Experiment with creating, copying, and moving files and folders. Warn them not to delete or rename system files and folders.
- Ensure that learners know the difference between copying a file or folder and moving a file or folder. When a file or folder is moved, it no longer exists in its original location. Copying simply duplicates a file or folder, so that there are two files or folders that are the same.
- File names and folder names should describe the information they contain. A folder called 'Stuff' does not describe what kind of files it contains.
- Folder structures need to be logical and methodical so that finding specific files is easy. In other words, each file structure should be like the other file structures. When file structures don't follow a similar pattern, the user can waste time searching for files.

Example: If the Assignment folder in one file structure is called Tasks in another structure and Practical Activities in a third structure, the user will have difficulty finding the instructions for a specific assignment.

- Important files should always be backed up and kept in a different location. The easiest way to do this is to copy important folders directly onto an external drive or flash drive. There is also free cloud storage, such as Google® Drive and Microsoft® OneDrive that can be used as well. However, this depends on having consistent access to the Internet for uploading and downloading files and folders.
- Demonstrate using Google® Drive to store and retrieve files.
- Discuss the advantages and disadvantages of commonly used file formats. Include text (MS Word or PDF), audio (MP3), video (MP4) and image file (.png or .jpg) formats.
- Files downloaded from the internet can be huge, which can make downloading a slow process. Also, large files take up more storage (memory) space.

Example: High-resolution image files take up a lot of computer memory. If many files are being downloaded for use in an online presentation, choosing a lower resolution format, such as .png would serve the same purpose. Downloading text files is similar – a plain text file (.txt) takes up very little space, whereas a Word document or a PDF can be considerably larger than a plain text file, depending on the type of content.

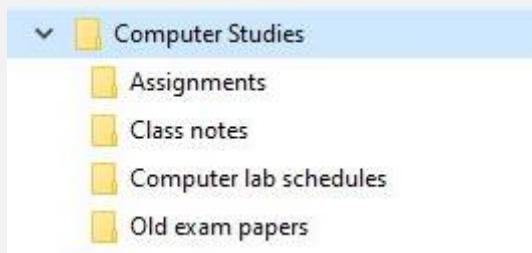
Activity 2.3.1: Download a file from the internet

1. Access a file that can be safely downloaded from the internet.
2. Create a new folder on the desktop called *My downloads*.
3. Move the file you downloaded from the Internet to *My downloads*.

Activity 2.3.2: Use a file management program

Create this file structure on the C: drive using a file management program.

Example:



Knowledge and skill checklist



I can save or store files or content (e.g., text, pictures, music, videos, web pages) and retrieve them once saved or stored.

I recognize where to organize them in a simple way in a structured environment.

Module 2 assessment guidance

Assist learners to set up where needed. Ensure that they know what they need to do and what is expected of them.



Materials needed

- Laptop or tablet with an internet connection
- Paper and pen.

Unit 1: Search engines

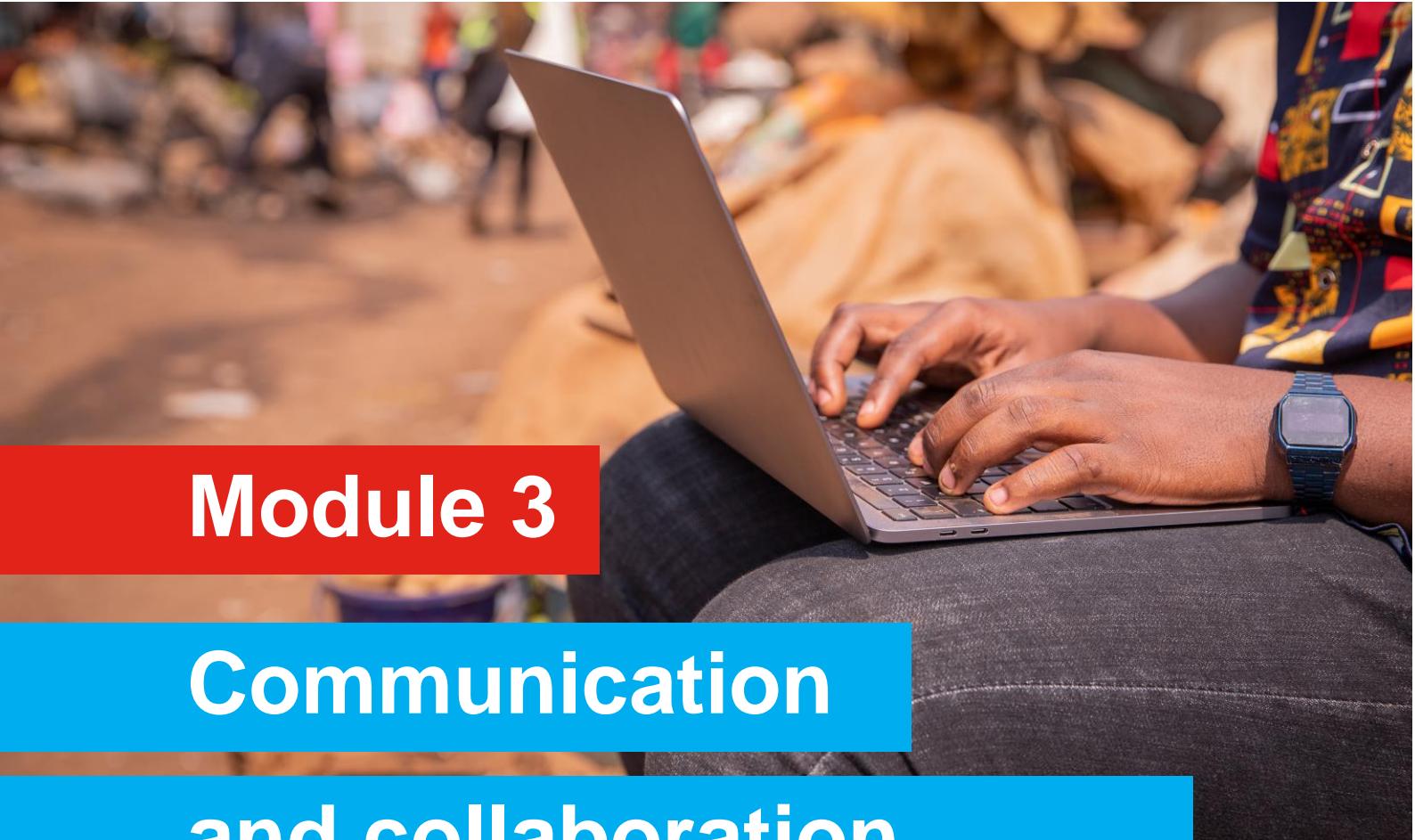
1. Learners open the search engine of their choice.
2. They choose the best key words to search for the following: How do I make Matooke?
3. They complete a search using one search engine with their chosen key words.
4. Learners should write down their key words.
5. They compare three search results and choose one website that provides the most useful information. They should write down the name of the website.
6. Learners write two strategies that they used to help their search for the correct information.

Unit 2: Evaluating data

1. Learners review their search results from the previous unit.
2. From their search results, learners write down one website that they found unreliable.

Unit 3: Saving information

1. Learners download a recipe for Matooke and save it on their device.
2. They download a photograph of Matooke and save it on their device.
3. They create a folder on their device and place the recipe and photograph in the folder.
4. Assess the folder that contains the two files.



Module 3

Communication and collaboration

This module contains information on collaborative platforms and describes subjects related to communication and interaction online.

Please note that practical activities described in each unit might require the support of an experienced trainer. Although the information presented in the manual is written in a way that is easy to understand, some actions, adjacent to the information presented, may also require the support of experienced people.

This module includes the following units:

| | |
|---------------|--|
| Unit 1 | Interacting through digital technologies |
| Unit 2 | Sharing through digital technologies |
| Unit 3 | Engaging in citizenship through digital technologies |
| Unit 4 | Collaborating through digital technologies |
| Unit 5 | Netiquette |
| Unit 6 | Digital emotional intelligence |
| Unit 7 | Managing digital identity |

Learning outcomes

Learners should be able to:

- Interact through a variety of digital technologies and to understand appropriate digital communication means for a given context.
- Share data, information and digital content with others through appropriate digital technologies.
- Act as an intermediary, to know about referencing and attribution practices.
- Participate in society using public and private digital services.
- Seek opportunities for self-empowerment and for participatory citizenship through appropriate digital technologies.
- Use digital tools and technologies for collaborative processes, and for co-construction and co-creation of data, resources, and knowledge.
- Be aware of behavioural norms and know-how while using digital technologies and interacting in digital environments.
- Adapt communication strategies to the specific audience and to be aware of cultural and generational diversity in digital environments.
- Recognize, navigate, and express emotions in intrapersonal and interpersonal digital interaction.
- Create and manage one or multiple digital identities, to be able to protect one's own reputation, to deal with the data that one produces through several digital tools, environments and services.



Resources



- Training manual
- Projector
- Computer with internet access
- Headphones
- Flipchart papers
- Markers

Suggested teaching methods



- Presentation by facilitator
- Group exercise / Discussion / Debate
- Working in pairs / Small groups
- Presentation by learners
- Media selection



New terminology to explain

These are terms that learners may not be familiar with. They should be explained within the context that they may be used.

cyberbullying

includes sending, posting, or sharing negative, harmful, false, or mean content about someone else

digital channel

an interface connected to the world wide web through which communication can be made

digital citizenship

the behaviour and the positive engagement individuals impose when entering the digital world

digital medium

a physical way of storing media or archiving it; holds data, graphics, audio, and video

environment

the place that is enabled by technology and digital devices, often transmitted over the internet or other digital means, e.g., mobile phone network

hack

to break into computer systems to do harm or use the information in a harmful way

malware malicious computer software that interferes with normal computer functions or sends personal data about the user to unauthorized parties over the internet

noise elements that can distort your communication

phishing a type of cyberattack that uses email, phone, or text to entice individuals into providing personal or sensitive information, ranging from passwords, credit card information, and social security numbers to details about a person or organization

thread on Twitter: a combination of tweets sent out one after the other and connected to form a chain (note: one tweet is limited to 280 characters)

1

Interacting through digital technologies



| | | |
|--|--------------------------|---|
| | Duration | 5 hours |
| | Objectives | <ul style="list-style-type: none">• Communicate with others using mobile phone, Voice over IP (e.g., Skype) e-mail or chat – using basic features (e.g., voice messaging, SMS, send and receive e-mails, text exchange).• Understand the importance of communicating securely. |
| | Content | <ul style="list-style-type: none">• The process of digital communication• Effective email communication• Social media training for beginners• Practical activities |
| | PowerPoint slides | Use this link to access the PowerPoint slides deck for this unit. |
| | Lesson Plan Guide | <ol style="list-style-type: none">1 The process of digital communication (90 minutes)2 Interacting with digital technologies (105 minutes)3 Secure digital communication (90 minutes)4 Consolidation (15 minutes)5 Knowledge and Skills Checklist |

Additional online resources



- Basic Email Tutorial:
<https://www.youtube.com/watch?v=cnxsl8h5qj4>
- Using digital tools to transform classrooms:
<https://www.youtube.com/watch?v=B99FXVamqMM>
- How to post on twitter: <https://recurpost.com/blog/how-to-post-on-twitter/>
- What your Digital Communication Style Says about you:
<https://www.webroot.com/us/en/resources/tips-articles/what-your-digital-communication-style-says-about-you>

Teaching notes

The process of digital communication

Simplify the process of digital communications for learners by breaking down the process of into a series of steps.

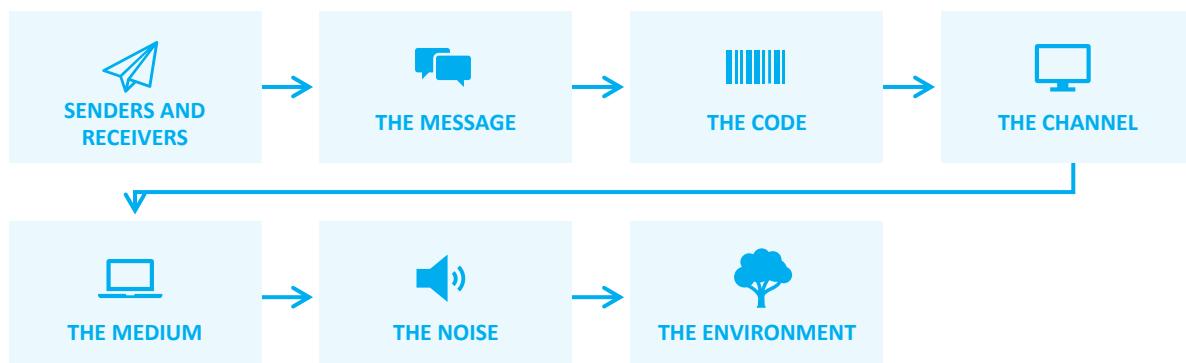


Figure 3.1.1 – The digital communication process

- **Senders and receivers:** The person doing the communication is the **sender**, and the person that the sender is communicating with is the **receiver**.
- **The message:** This is the information being sent. Remind learners that the information can be in different mediums (types).
- **The code:** All information sent digitally is encoded by the software or app that is being used when the message is sent. It is then decoded when received so that the receiver can see the message as intended.
- **The channel:** A **digital CHANNEL** is an interface connected to the world wide web through which communication can take place.

| Type of communication | Digital channel |
|------------------------|---------------------------------|
| on the web | websites |
| search | search results |
| communication | email and messaging apps |
| online events/webinars | online conference software |
| digital media | video streaming and music sites |
| games | virtual gaming sites |

- **The medium:** A **digital MEDIUM** is a physical way of storing media or archiving it, and can hold data, graphics, audio, and video.
- Digital mediums are well known as digital media, i.e., the form of media that can be created, viewed, modified, and distributed by electronic devices.
- **The noise:** These are elements that can distort your communication.
- **The environment:** The place that is enabled by technology and digital devices, often transmitted over the internet, or other digital means, e.g., mobile phone network.

Activity 3.1.1: Communication process

1. Introduce the communication process through a question-and-answer session.
2. Ask learners to create a message that they would like to send and then identify the:

| | | | |
|--------|----------|---------|------|
| sender | receiver | message | code |
|--------|----------|---------|------|

3. Ask learners what they consider as communication channels and ask them to provide some examples.
4. List the examples provided on the blackboard.
5. Present communication channels and mediums.
6. Ask the learners to categorize the channels as formal, informal, unofficial.

Interacting with digital technologies

Communication happens when one person (the sender) sends a clear message to another person (the recipient).

Communication is said to be **effective** when the recipient's response shows that they understood the message.

Communicate with others

Learners should understand that they should register an account that is secure and unique whenever they interact with an online service or social media platform. This makes it difficult for another person to **hack** into their account. Their username should not be their real name, and their password should be a strong password. Strong passwords contain a mixture of letters, numbers, and symbols, and should be at least eight characters.



Figure 3.1.2 – The most popular social media apps on a mobile phone

Show learners how to post content, such as messages, images, and videos on social media sites, such as Facebook, Twitter, Instagram, and TikTok.

Some content should **not** be posted on the internet.

Examples of content that learners should never post:

- Images and videos that are sexual, show religion in a poor light, insult others, expose others to unwanted attention, or are simply in poor taste.
- Comments that criticize, insult, judge, bully, or lie about someone.

Show learners how to upload content to a social media site from a computer or smartphone. To do this, they should be able to navigate the device's file system to find the correct content.

Example: Explain how to post an image on a smartphone to a Facebook page

1. When in Facebook, go to the page where you want to the image to appear.
2. Click on the Photos button to access the smartphone's gallery.
3. Select the picture you want to add.
4. Choose Share external from the drop-down menu at the top of the screen.
5. Click on Facebook's News Feed button.
6. Once the image appears on the page, add text or a caption explaining the image.
7. Click on the Post button, then select which people should be able to view the image.



Figure 3.1.3 – The Facebook app on a mobile

The steps explained above are the same for posting other content on other social media sites. The names of options might be different, but the process is the same.

Learners can post comments on a social media site, such as Twitter or Instagram.

Example: They should follow these steps to post a **thread** on Twitter:

1. Click on the tweet button to create a new tweet.
2. To add another tweet, select the plus icon.
3. To delete any of the tweets, choose the delete button.
4. Once all the tweets in the thread have been added, select the Tweet All button to post them.



Figure 3.1.4 – The Twitter app on a mobile

Activity 3.1.2: Digital tools

Introduce digital communication by stressing that for most mediums, you need to register or create an online account.

1. Introduce these terms: username, password, and online account.
2. Guide learners to google.com on their devices to create their online account.
3. The learners work in groups and each group will share an account.

4. Once learners have created their Google account, guide and show them Gmail and explain the format and the layout of this tool.
5. Ask learners to compose a message in the new message window.
6. Propose some debriefing questions:
 - a) Who would you email? What tone would they use and why?
 - b) What type of communications is email best for?
 - c) What sort of media or files can one attach to an email?

Activity 3.1.3: Communicate using WhatsApp voice message, WhatsApp text message, WhatsApp photo, WhatsApp video, SMS

Divide learners into small groups with at least two smartphones or tablets in each group.

Instruct each group to:

1. Download and install WhatsApp from the Play Store, if WhatsApp is not already installed.
2. Add the contact names and numbers to each smartphone or tablet in the group.
3. Create a WhatsApp group that includes all the smartphones or tablets in the group.
4. One learner uses the WhatsApp group to send the following messages to the group:
 - a) a simple text message
 - b) a voice note
 - c) an image.
 - d) Learners discuss how easy or difficult the activity was, giving reasons for tasks they found difficult.

Secure digital communication

Explain how the term '**security**' is used in the context of data sharing and digital communications. In this context, it refers to the threats that can cause information to be lost, stolen or corrupted (made unusable). It also refers to access to information over a network by an unauthorized user who might steal or tamper with the information.



Figure 3.1.5 – Digital security is very important to all users

Examples of information that is routinely secured by organizations and individuals include:

- confidential information, such as medical records and legal documents
- personal information, such as a person's name, address, contact details and identity number
- financial information, such as bank account details of clients, accounting records of a company, staff salaries, credit records, and tax information.

When information is made secure, it is hidden from the public in such a way that no unauthorized user can find it, no matter how good they are at hacking systems.

Security in digital communication means keeping information hidden (private) when it is being transferred across a network (usually the internet) to another user or system. This communication could be:

- an email
- an instant message

- a file transfer via services, such as Dropbox and WeTransfer
- a video conference using software, such as Skype, Microsoft® Teams, or Zoom
- a Voice over IP (VoIP) audio call
- various users collaborating on a shared document that is stored on a cloud computing website, such as IBM® Cloud, Google® Workspace or Amazon® Web Services
- filling in an online registration form to subscribe to an online service or to purchase a product online
- electronic funds transfer (EFT) to pay bills online
- downloading images and other content from websites
- uploading content to online storage, such as Microsoft® OneDrive and Google® Drive
- individual and group messaging on a data line, such as WhatsApp and Telegram
- streaming content, such as videos and audio files
- posting images, videos, audio, and text content on social media sites, such as Facebook, Instagram, Twitter, or TikTok
- creating a blog site using free online applications, such as WordPress, Wix, and Jimdo.

If information and the routes that it travels across a network are not secure, that information is at risk of being lost, stolen or corrupted.

The most common ways of securing data are:

- using hardware to form a physical barrier (firewall) between the internal servers and the public servers, or firewall software
- installing anti-virus software and web protection software
- encrypting all data that is sent over a public network
- using a virtual private network (VPN) to create a one-to-one channel across the Internet so that information cannot be intercepted.

Activity 3.1.4: Importance of communicating securely

Hold a class discussion based on questions about secure communication that you consider important.

Examples:

- You have emailed a friend to tell him your new mobile phone number. What can happen to that information if your email system is not secure?
- What is an unauthorized user?
- Name three ways that data can be secure when sent over the internet.

Knowledge and skill checklist

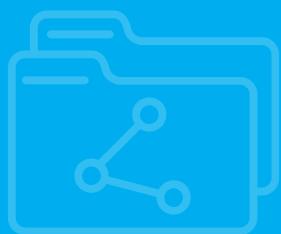


I can communicate with others using mobile phone, Voice over IP (e.g., Skype) e-mail or chat – using basic features (e.g., voice messaging, SMS, send and receive e-mails, text exchange).

I understand the importance of communicating securely.

2

Sharing through digital technologies

**Duration**

3 hours

**Objectives**

- Share files and content using simple tools.

**Content**

- Sharing through Digital Technologies
- Set up a shared file on a platform
- Use comments or make changes to a shared file
- Practical activities

**PowerPoint slides**

Use [this link](#) to access the PowerPoint slides deck for this unit.

**Lesson Plan Guide**

- 1 Simple file-sharing tools (30 minutes)
- 2 Sharing through digital technologies (135 minutes)
- 3 Consolidation (15 minutes)
- 4 Knowledge and Skills Checklist

Additional online resources



- Best lessons to share lesson notes digitally:
<http://blog.whooosreading.org/digital-notes/>
- Digitally share and Comment:
<https://applieddigitalskills.withgoogle.com/c/middle-and-high-school/en/create-a-presentation-all-about-a-topic/create-a-presentation-all-about-a-topic/digitally-share-and-comment.html>

Teaching notes

In this unit, you will introduce learners to simple tools they can use to share files and content.

Simple file-sharing tools

The simplest way to share a file using a laptop or tablet is to add the file to an email message.

Send an email

1. If learners do not already have a Gmail account, show them how to create one.
2. Ask the learners to open their Gmail account and click **Compose**.
3. Tell the learners to select who they would like to email and enter the **subject** of the message.
4. Then, they write a short message describing what is attached.
5. Show the learners that they can either drag and drop the attachment or click on the paperclip and select the file they would like to **attach**.

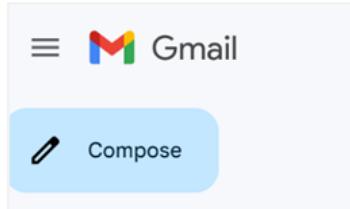


Figure 3.2.1 – Click on compose to write a new email

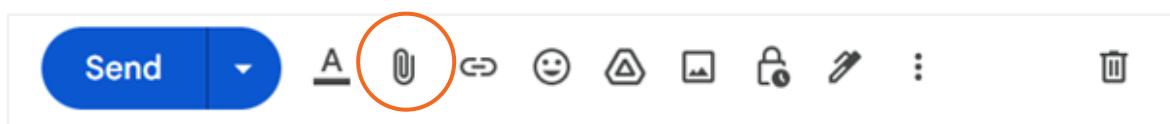


Figure 3.2.2 – Attach a file by clicking on the paperclip

6. When the message is complete and the file attached, click **Send**.
7. All email apps – whether on a laptop, tablet, or smartphone – work in a similar way, although the prompts may look a little different.

Send a WhatsApp message

WhatsApp allows for file sharing.

Assist learners with sending files via WhatsApp:

1. Open WhatsApp on your tablet or smartphone.
2. Select who you would like to message.
3. Write a message describing the attached file.
4. Tap on the '+' sign at the bottom of the screen.
5. Select 'photo & video library' or 'document' and attach the file.
6. Press Send.

Sharing through digital technologies

Digital technologies are tools, systems, devices, and resources that generate, store or process data. Some of the most common digital technologies include social media, online games, multimedia, and mobile devices.

Many people now refer to digital technologies that are present online as 'the cloud'. It is important that learners understand what 'the cloud' is. Like the internet, the cloud is a collection of servers and networks that host programs and storage facilities online. Anyone with a computer and access to the internet can use the free services available in the cloud.

The cloud has two distinct components:

- **Cloud computing**, in which the online service provider hosts applications that users can run on their own computers without having to install those applications on their local computer. In other words, users can create documents, spreadsheets, presentations, and so on without having to download and install the software on their own device. Give learners an example. Explain to learners how this works by using an example that they will understand. For example, when a user opens Word, the application opens a window in the user's internet browser for the user to work on. Cloud computing saves space on the user's computer, the applications are always up to date, and the user can run the applications from any device using their registered account.
- **Cloud storage**, in which the user's files are stored in a secure and private location online. This forms a reliable backup of information that is always up to date. If the user's computer malfunctions, their files are not lost forever and can be retrieved when the device is repaired or when a new device is purchased. In addition, cloud storage allows users to share files. This allows a group of collaborators to work on the same document at the same time. Cloud storage is updated with the latest files on the user's computer if the user is online. This is known as synchronization.

There are two cloud computing sites with free services that are commonly used for safe, easy, and reliable collaboration, file sharing, applications, and storage:

- Microsoft® 365, which hosts Microsoft® Word, Microsoft® Excel, Microsoft® PowerPoint, as well as a storage space called Microsoft® OneDrive.
- Google® Workspace, which hosts Google® Docs, Google® Sheets, Google® Slides, as well as a storage space called Google® Drive.

Both Microsoft® 365 and Google® Workspace host many other applications that can be used to streamline collaborative projects, such as calendars for scheduling, groups, podcasts, forms, and so on.

Work in Google® Drive

Help learners to access Google apps in the Gmail window, click on the **Apps** button to the left of your profile icon.

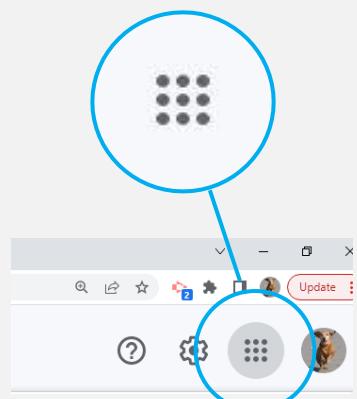


Figure 3.2.3 – the Apps button

This displays a gallery of Google apps.

Point out that the button for accessing Google® Drive is on the bottom right.

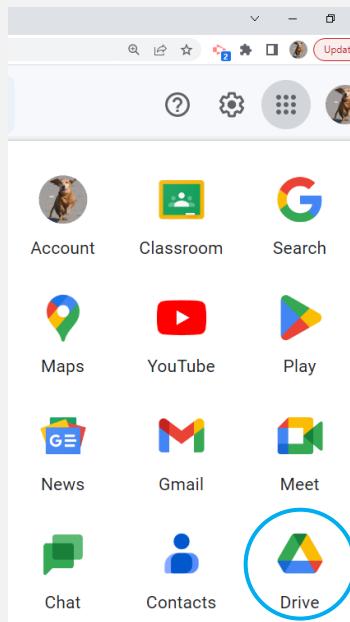


Figure 3.2.4 – Select the Drive button

Learners can then select whether to create, upload, share or find a shared document.

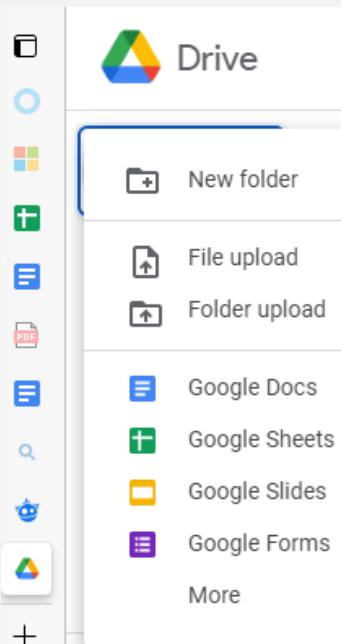


Figure 3.2.5 – The landing page of Google drive

Activity 3.2.1: Files that can be shared

1. Introduce to learners the concept of sharing files and also provide them with its definition.
2. Ask these questions:
 - a) What type of information do you usually share?
 - b) How do you share this information?
 - c) Which digital tools or platforms could be used to share this information?

Activity 3.2.2: Create a file to share

1. Introduce simple digital tools such as Word, Notes, or Paint, which can be used to create content.
2. Ask learners to select one of the demonstrated apps to create specific content, either word based, or picture based.
3. Once all learners have created their files, ask them to save the file on their device.
4. Present the most common platform to share content by email.

Activity 3.2.3: Share a file

1. Set up a shared Google® Drive folder specifically for this activity.
2. Ask learners to add their name to the file they created in Activity 2.
3. Ask learners to upload their file from their device to the Drive folder.
4. When all the learners have uploaded their files, show them the contents of the shared folder.

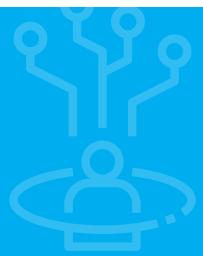
Knowledge and skill checklist



I can share files and content using simple tools.

3

Engaging in citizenship through digital technologies

**Duration**

3 hours

**Objectives**

- Use digital technologies to interact with services (as school or education).

**Content**

- Basic concepts of digital citizenship
- Online training and e-learning
- Practical activities

**PowerPoint slides**

Use [this link](#) to access the PowerPoint slides deck for this unit.

**Lesson Plan Guide**

- 1 Basic concepts of digital citizenship (90 minutes)
- 2 Online training and e-learning (75 minutes)
- 3 Consolidation (15 minutes)
- 4 Knowledge and Skills Checklist

Additional online resources



- Free-to-use typing tutors: KeyBlaze (<https://keyblaze-free-typing-tutor.en.softonic.com/>), Klavaro Touch Typing Tutor (<https://klavaro-touch-typing-tutor.en.softonic.com/>)
- Online learning services: <https://www.create-learn.us/blog/best-free-online-classes-for-kids/>
- <https://www.open.edu/openlearn/education-development/learning/childrens-university-free-online-courses>

Teaching notes

Basic concepts of digital citizenship

Digital citizenship refers to how users behave when they collaborate and engage online. A digital citizen is a person who has the knowledge and skills to effectively use digital technologies to communicate with others, participate in society, and create and consume content through digital tools.

A good digital citizen understands that all internet users leave digital footprints. They attempt to limit their footprint, or at least for it to be as positive as possible. Digital footprints or digital trails are records of what an individual searches, visits, creates, shares, posts, and installs through digital tools on a mobile device or on a computer station.



SAFETY



REPUTATION



RELATIONSHIPS



ETHICS

E-Safety

This concept has become a major topic in the digital world and includes an individual's knowledge about internet privacy and how an individual's behaviour can contribute towards healthy interactions when using the internet.

Common dangers: **phishing**, **malware**, **cyberbullying**, accessing, and posting private information.

Reputation



Society is moving along from the Age of Information to the Age of Reputation.



A person's digital reputation is how we are perceived online. It is shaped and figured by the way an individual presents themselves and the information other individuals post about them.



A person's digital reputation is more permanent than ever before because individuals place more trust in search results than any other source.

Relationships

Digital relationships involve using technologies to interact.

These technologies can contribute both positively and negatively to relationships, specifically in personal relationships. However, it does depend on how individuals use technology. In some cases, technology can create problems, potentially stirring conflict and dissatisfaction in the relationship.



OR



Figure 3.3.1 – Digital relationships can be direct and interactive or very complex

Ethics

Digital ethics refers to how people or organizations behave and conduct themselves while online. Ethical behaviour refers to behaviour that does not cause harm or offence.

Here are some examples of ethical behaviour.

- An individual or organization asks for permission to collect and store data about users.
- An individual or organization asks permission to sell any personal data that has been stored.
- An individual or organization understands that users have the right to request that data about them to be deleted and follows through on such requests.

The rights and responsibilities of a digital citizen

A digital citizen is entitled to enjoy the rights of Privacy, Security, Assess and Inclusion and Freedom of expression. However, as a citizen with these rights the digital citizen has certain responsibilities, such as ethics and empathy, and other responsibilities to guarantee a safe and responsible digital environment for all digital citizens.

| A good citizen | A good digital citizen |
|---|--|
| Advocates for equal human rights | Advocates for equal digital rights for all |
| Treats others with respect | Seeks to understand all perspectives |
| Does not steal or damage others' property | Respects digital privacy, intellectual property, and other rights of people online |
| Communicates clearly respectfully and with empathy | Communicates and acts with empathy for others' humanity via digital channels |
| Speaks honestly and does not repeat unsubstantiated rumours | Applies critical thinking to all online sources, including fake news |
| Protects self and others from harm | Is mindful of physical, emotional, and mental health while using digital tools. |
| Projects a positive self-image | Understands the permanence of the digital world and proactively manages their digital identity |

Activity 3.3.1: What is digital citizenship?

1. Learners use their devices and watch this video, which explains why Digital Citizenship is important.
https://www.youtube.com/watch?v=HII6YjE2ds&ab_channel=JamieVelazquez
2. Discuss with the learners what understand the term ‘Digital Citizenship’ to mean.
3. Discuss the threats and risks that users may face if they do not use secure websites. Also discuss how to manage threats and risks associated with using social media.

Activity 3.3.2: Safe, responsible and respectful digital behaviour

1. Introduce the basic concepts of Digital Citizenship.
2. Provide examples to learners in an effort to help them become ‘internet alert’.
3. Encourage learners to exchange ideas that demonstrate awareness of online dangers and provide examples.
4. Give two examples and discuss the key points of each example.
5. Once the two examples have been discussed, create a three-column chart on the board with the terms “Safe”, “Responsible”, and “Respectful” written at the top of each column.
6. Invite learners to provide words or phrases that describe how people can act safely, responsibly, and respectfully online. Write the learners’ suggestions in the appropriate column.

Online training and e-learning

To use a computer with the confidence they need to become truly computer literate, all learners need to be able to:

- use a **mouse** to interact with the graphic user interface (GUI) as well as open and work in applications

- find and use **control keys**, such as Alt, Ctrl and Esc, on a computer keyboard
- do **touch typing** so that they need not look at their hands when entering data but can concentrate on what they are typing on the screen.



Figure 3.3.2 – Online courses are often free

Introduce learner to free online learning courses in IT-related subjects, such as Computer Science, Coding, Mathematics, Science, Engineering and Art. Examples of institutions that offer these types of courses are:

- Create and Learn (<https://www.create-learn.us/>)
- Khan Academy (<https://www.khanacademy.org/>)
- National Geographic Kids (<https://kids.nationalgeographic.com/>)
- iRobot Education (<https://edu.irobot.com/>)

International outreach and government resources

- There are international outreach programmes, such as the UN Refugee Agency that supported continued access to education during the Covid-19 pandemic and beyond. (See page 4 of this downloadable article for information on their work in Uganda: <https://www.unhcr.org/5ea7eb134.pdf>)
- The UNICEF outreach programme in Uganda works with the Ugandan government in support of the rights of children. This includes educational needs, such as building schools, providing resources and making schools accessible, affordable and safe. For more information, access this website: <https://www.unicef.org/uganda/what-we-do/education>

- The Kentalis International Foundation in Holland, which supports inclusive education for secondary learners in Uganda who are deaf. They do this by training teachers to work with deaf learners so that they can enroll in mainstream schools.

Closer to home, the Ministry of Education and Sports website supplies information that older learners will find useful, such as where to get learner loans and grants, as well as job opportunities within the ministry.

Activity 3.3.3: e-Learning

1. Download a simple typing tutor program that learners can use to practise typing. Give them a sheet of typing exercises to complete.

Note: You can use an online typing tutor that includes lessons and exercises. Example: <https://www.typing.academy/typing-tutor/lessons>

2. Register with one of the institutions that offer online training for beginners, such as Create and Learn or Khan Academy. Choose a suitable lesson for learners to do in class. Once the lesson has been completed, learners discuss (in groups) their experiences, especially whether they found it easy to learn online.

Knowledge and skill checklist



I can use digital technologies to interact with services (as school or education).

4

Collaborating through digital technologies



| | | |
|--|---------------------------|---|
| | Duration | 3 hours |
| | Objectives | <ul style="list-style-type: none">Am aware of a limited range of social networking sites and online collaboration tools for sharing information. |
| | Content | <ul style="list-style-type: none">Main concepts of digital collaborationPractical activities |
| | PowerPoint slides | Use this link to access the PowerPoint slides deck for this unit. |
| | Lesson Plan Guide* | <ol style="list-style-type: none">1 Main concepts of digital collaboration (75 minutes)2 Practical activities (90 minutes)3 Consolidation (15 minutes)4 Knowledge and Skills Checklist |

Additional online resources



- 30 Of The Best Digital Collaboration Tools For Learners - <https://www.teachthought.com/technology/12-tech-tools-for-learner-to-learner-digital-collaboration/>
- Importance of Teamwork & Collaboration in a Digital World - <https://blog.bit.ai/importance-of-teamwork-and-collaboration/>
- Digital Collaboration Tool: <https://www.youtube.com/watch?v=TSz2CxnuGkQ>
- <https://ec.europa.eu/jrc/en/digcomp/digital-competence-framework>
- <https://zapier.com/blog/dropbox-vs-google-drive/>
- <https://support.google.com/a/users/answer/9302892?hl=en>
- <https://kissflow.com/project/best-project-management-tools/>

Teaching notes

Main concepts of digital collaboration

The aim of this unit is to introduce learners to what it means to collaborate through digital technologies, to know the most common tools to collaborate online, and to be able to identify the right tool for a particular need.

Definition of collaborating through digital technologies

Collaborating through digital technologies means: “to use digital tools and technologies for collaborative processes and for co-construction and co-creation of resources and knowledge”. Bring the learners’ attention to the words ‘co-construction’ and ‘co-creation’ – these imply that some degree of working together with others is necessary. This is collaboration, which is enhanced or improved by using digital technologies in specific ways.

The importance of collaboration through digital technologies

Currently we use digital technologies more often than before in our private and working lives to interact with others.

Exchanging documents, photos, information, or using the online environment to organize work or study has become increasingly important, especially since the Covid 19 pandemic forced many people to live, work and study at home. There are numerous tools that allow for the exchanging of information in the online environment, in a quick and easy way.

Especially in a work environment, it has become essential to be able to interact with co-workers or other people online, exchange documents and information, and to be able to manage tasks, organize meetings and so on. Digital tools help people to manage work (not only remotely), speed up the exchange of information, and increase team productivity.



Figure 3.4.1 – We can collaborate using different devices and platforms

Activity 3.4.1: About digital technologies

1. Name three messaging apps that you know about or have used.
2. Name three types of files you can send to someone using a messaging app.
3. Name three advantages of digital communication tools.

What are the most useful tools for collaborating in an online environment?

There are many tools that help us to collaborate online with others. Share and recommend the following to the learners. You can also add your own recommendations if they are not listed here.

Conferencing and online meeting tools

- Skype
- GoToMeeting
- Zoom Meetings
- Google® Meet
- Microsoft® Teams

All these tools are Web Conferencing and Online Meeting Tools that allow people to organize meetings remotely or easily see each other when people are far away. You can also share your screen and show presentations and files to the other people in the call.

| | | |
|---------------------------------|---|--|
| Saving and sharing files | <ul style="list-style-type: none"> • Google Drive • Dropbox • WeTransfer | <p>With these apps, you can save files and store them in an online space, separate from your devices. This is useful because you can recover the file even if your devices have some problems, assuming you have archived them correctly and using the app. These tools enable people to work and collaborate with other people by having the possibility to share their space or documents with colleagues, friends, or family members.</p> |
| Schedules and calendars | <ul style="list-style-type: none"> • Google Calendar • Teamup | <p>These are apps designed as an agenda. They look like a calendar that you can organize and personalize. The interface is very simple in both, and users can decide to display a single day, a week, or even longer time intervals. Users can mark appointments, schedules meeting, and even share these with other people.</p> |
| Project management | <ul style="list-style-type: none"> • Trello • Redbooth • Asana | <p>These are project management tools that help people to keep track of projects and plan for deadlines and deliverables. Users can create lists, assign tasks to other members of their team who share the same space, set deadlines, and customize everything as efficiently as possible.</p> |
| Testing opinion | <ul style="list-style-type: none"> • Google Form | <p>This Google application allows users to create surveys free of charge and very easily. Users can customize surveys and use different ways of asking questions: multiple answers, open answers, satisfaction scores, and so on.</p> |

Activity 3.4.2: The jar of tools

1. Write the name of the tool on a piece of paper and insert it in the jar.
2. List several tools that could be proposed to the learners.
3. Insert at least one per learner. We suggest the following: Google Drive, Trello, Dropbox, Google Calendar Google Form and so on).
4. One at a time learners take a piece of paper from the jar and say aloud the name of the tool that they have found.
5. Ask these questions:
 - a) What is this tool used for?
 - b) Have you ever used this tool?
 - c) Do you know how it works?
 - d) Do you know other tools that work in the same way?
 - e) Do you think this tool is useful to foster collaboration?
6. Lead the discussion but try to stimulate the conversation among the learners.
7. When all the notes in the jar are finished, write all the names of the tools that have come out and explain how they work on a blackboard.



Activity 3.4.3: Let's try it!

This activity is practical and serves to put into practice the more theoretical knowledge acquired during the first part.

1. Learners will now practise how to schedule a meeting in their calendar, send a meeting invite, accept the invite, and join an online meeting.
2. At the end of the activity, ask these questions:
 - a) Did you find the tools you tried useful?
 - b) Did you already know them?
 - c) Do you think they are useful in the work context and beyond?
 - d) What would you use them for?

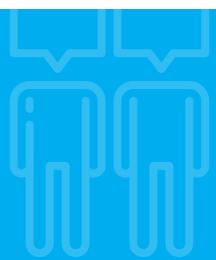
Knowledge and skill checklist



I am aware of a limited range of social networking sites and online collaboration tools for sharing information.

5

Netiquette



| | | |
|--|--------------------------|--|
| | Duration | 3 hours |
| | Objectives | <ul style="list-style-type: none">Understand that when using digital tools, certain communication rules apply (e.g., when commenting, sharing personal information).Adjust language online appropriately.Take steps to make sure that any content posted will not embarrass other people or get them into trouble. |
| | Content | <ul style="list-style-type: none">What does netiquette mean?What to avoid when applying netiquettePractical activities |
| | PowerPoint slides | Use this link to access the PowerPoint slides deck for this unit. |
| | Lesson Plan Guide | <ol style="list-style-type: none">1 What does netiquette mean? (75 minutes)2 What to avoid when applying netiquette (90 minutes)3 Consolidation (15 minutes)4 Knowledge and Skills Checklist |

Additional online resources

- Netiquette meaning, definition & explanation -
<https://www.youtube.com/watch?v=7-HopTAFUm0>
- Examples of bad netiquette - <https://www.cybersmile.org/what-we-do/advice-help/netiquette/examples-of-bad-netiquette>
- Examples of good netiquette -
<https://www.cybersmile.org/advice-help/category/examples-of-good-netiquette>
- <https://ec.europa.eu/jrc/en/digcomp/digital-competence-framework>
- <https://www.cybersmile.org/what-we-do/advice-help/netiquette/examples-of-bad-netiquette>
- https://slangit.com/meaning/keyboard_warrior



Teaching notes

What does ‘netiquette’ mean?

The aim of this unit is to encourage appropriate behaviour in the online environment. Explain to learners that respecting others and the places where we are is as important in the physical environment as it is in the online one. This is very important, especially because people tend to behave differently when they are online; some people may become more aggressive, or they say things that they would not say if they were not online. There are many examples of bad online behaviour: cyberbullying and body-shaming are just a few examples of behaviours that we witness daily on the web, not to mention racism and hate towards minorities, in general. It is important that you emphasize how critical it is to respect others – both online and offline!

Definition of netiquette

The definition of netiquette is: “To be aware of behavioural norms and know-how while using digital technologies and interacting in digital environments. To adapt communication strategies to the specific audience and to be aware of cultural and generational diversity in digital environments”. In other words, netiquette is the online equivalent of etiquette. It is a way of behaving that respects and upholds the dignity and humanity of the people you are interacting with online. Explain it to learners by using the example of table manners (or any other social setting where certain behaviour is expected). Discuss the reasons that there is a certain standard of behaviour in that scenario, and even talk through some of them. Then, apply that to online behaviour, and explain that netiquette helps people to feel safer and more comfortable when using the internet.

What to avoid when applying netiquette

In general, we can consider bad examples of netiquette all those online behaviours that are disrespectful towards others. These attitudes can differ.

| | |
|--|--|
| Disrespecting intellectual property | <p>Sharing content, photos, materials of others without citing the source is considered wrong and an example of bad netiquette. This is in addition to this simply being illegal, which we will not discuss here.</p> <p>Encourage learners to always check where they are getting content from. They should check whether it is open source, or if there are certain restrictions imposed on sharing it without acknowledgement or compensation.</p> |
| Not respecting other people's opinions | <p>Not respecting other people's opinions and therefore adopting hostile and insulting attitudes towards these people is an example of bad netiquette. It is important to always try to establish a dialogue with others without using words or tones that are inappropriate or that may cause offense.</p> |
| Expressing ourselves in a disrespectful way | <p>When writing a message, an email or a post, learners must be aware of how they write and how they express ourselves and their ideas. Remind learners that people on the other side do not see their expressions or hear tone of voice. This can lead to misunderstandings.</p> <p>Using unclear or hostile language, using capital letters (which implies shouting), not signing off on a message or email, and not contextualizing the content of your message are just a few examples of bad netiquette.</p> <p>Remind learners also to use formal or informal language depending on the person they are dealing with, whether they are a friend, an acquaintance, a colleague, or a stranger. For example, a message or email to you (the facilitator) would differ in tone and language to a message or email they might send to a friend or sibling.</p> |
| Disrespecting the privacy of others | <p>Many people share photographs or private information about themselves on social networks. This is their choice. However, it is important to emphasize the importance of respecting other people's privacy. It is considered bad netiquette to share people's sensitive data (or photographs, videos, other information) without the other person's permission.</p> |

Activity 3.5.1: Which one doesn't belong?

1. Write different online behaviours having to do with netiquette, some positive and some negative examples in random order on the board.
2. Learners show which elements are examples of good and bad netiquette.
3. The purpose of the exercise is to identify the bad behaviours.
4. Correct the answers given by the learners.

Activity 3.5.2: The Netiquette Manifesto

1. Divide the learners into groups and ask them to write a "Netiquette manifesto", i.e., all the positive behaviours they think should be kept online.
2. They must present the manifesto as a text document with pictures.

Knowledge and skill checklist



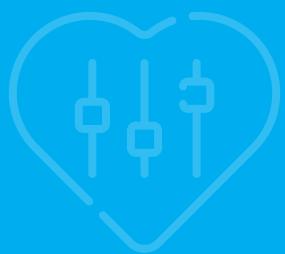
I understand that when using digital tools, certain communication rules apply (e.g., when commenting, sharing personal information).

I can adjust language online appropriately.

I can take steps to make sure that any content posted will not embarrass other people or get them into trouble.

6

Digital emotional intelligence



| | | |
|--|--------------------------|--|
| | Duration | 3 hours |
| | Objectives | <ul style="list-style-type: none">• Understand I should show respect to the others on the internet.• Understand how to express myself in a way that makes a good impression on others online.• Aware of the meaning of non-verbal messages (e.g., smiley face, emoji) when using digital technologies.• Able to express my feelings freely on the internet using online communications. |
| | Content | <ul style="list-style-type: none">• What is digital emotional intelligence?• Communication styles• Interpersonal digital interaction• Practical activities |
| | PowerPoint slides | Use this link to access the PowerPoint slides deck for this unit. |
| | Lesson Plan Guide | <ol style="list-style-type: none">1 What is digital emotional intelligence? (45 minutes)2 Communication styles (45 minutes)3 Interpersonal digital interaction (75 minutes)4 Consolidation (15 minutes)5 Knowledge and Skills Checklist |

Additional online resources



- DQ101: <https://www.sait.ca/news/2022/01/dq101-digital-emotional-intelligence>
- Role of DQ in digital transformation: <https://www.cloudcredential.org/blog/the-role-of-emotional-intelligence-in-digital-transformation/>
- The digital transformation of emotional intelligence: <https://www.youtube.com/watch?v=cgAZvCIRI1Q>

Teaching notes

What is digital emotional intelligence?

Help learners to understand that we are emotional beings and how we feel affects the way that we navigate the digital world. Participating on social media and other digital platforms brings us together, but if we don't communicate well, it can also divide us and do harm.

When we are with people, it is easy to judge their mood and their intentions by watching body language and listening for their tone of voice. When we communicate digitally, we don't have this information; we can only interpret what we see on the screen of our device.

Emphasize that digital actions have real-world consequences.

Example: Ask learners to think of how a person feels when they receive unkind or hateful messages and the negative impact this can have on their life. Now, ask learners to think about how receiving positive messages makes them feel – most people will say that it can easily make you feel good about yourself.

We need to develop awareness and skills that help us navigate the digital world so that we can manage the positive and negative impacts of interacting digitally. These skills are our digital emotional intelligence.

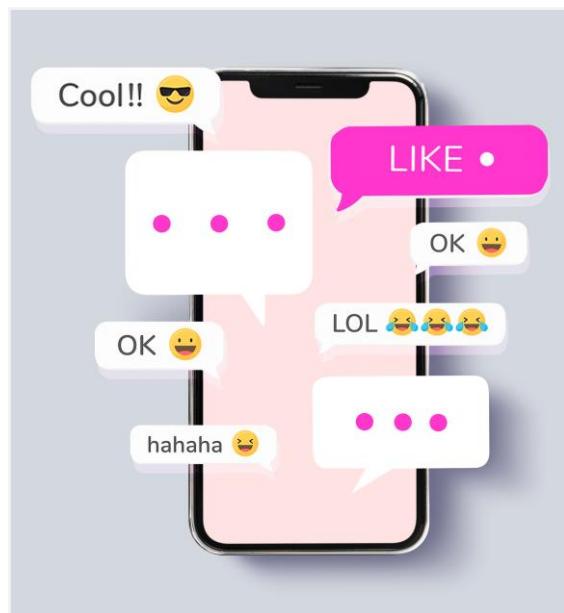


Figure 3.6.1 – It is important to have emotional intelligence when engaging online

Physical versus digital emotion indicators and tools

Learners need to learn how to interpret or read digital emotions. This table compares digital emotion indicators to physical ones.

| Digital | Physical |
|--|--|
| likes/shares/ratings | eye contact |
| emotions/emojis | smile |
| emotions/emojis | facial expression |
| device (mobile phone, tv, laptop, tablet, social media platform or channel) | body language |
| views | touch |
| CAPS/stickers/abbreviations | tone of voice |
| language/image used | language used |
| silence/no reply | silence |
| questions | questions |
| journey (geolocation, website, social media, apps visited) device (mobile phone, tv, laptop, tablet) time (hour, day, week, month, season, year) | journey (where/how/when) |
| pattern disruption (unusual behaviour) | pattern disruption (unusual behaviour) |

Digital emotions are more contagious

Digital emotions are more ‘contagious’ than physical emotion because of the speed of digital communications. Online communities are bigger and broader, so messages travel farther and faster across generations, time, space, and culture than they do in the purely physical world. Explain to learners that updating their Facebook status, and liking or posting an Instagram photo, can prompt an emotional response in networks of people thousands of kilometres away.

Digital Emotion Communication Tools

Here are some emojis used to communicate digitally.

| | |
|---|--|
|  | Emoticons and emojis represent facial expressions and feelings. |
|  | Hand signals or actions, such as digital gestures (poking, nudging by clicking), can represent intimate interpersonal/emotional actions face-to-face. |
|  | Labels that evaluate, liking, loving, disliking, on sites such as Facebook and Instagram show approval or disapproval. |
|  | Text, the number of words used, the use of punctuation, as well as things like a delay in responding, all carry meaning. |
|  | Strong language or using CAPS refers to stating how you are feeling. We don't do this very much in day-to-day communication, but we seem to do it more digitally to compensate for a lack of non-verbal cues, such as body language, to clarify emotional meaning and to strengthen feelings. |
|  | Voice and video tools like GIFS convey emotions that replace body language. |
|  | Emojis and GIFS can send virtual emotions, like hearts, to replace in-person emotional communication. |

Communication styles

Remind learners that the tone we use when communicating can affect the way others respond to us. This is true of face-to-face communication, as well as digital communication.

What type of communicator are you?

- **Passive:** Passive communicators often act indifferent and fail to express their feelings or needs, which can allow others to take advantage of them.
"It really doesn't matter that much."
- **Aggressive:** Aggressive communicators often express themselves in a "loud" way and tend to issue commands, ask questions in a rude manner and fail to listen to others.
"I'm right and you're wrong."
- **Passive-aggressive:** These communicators most likely communicate with body language and appear to be aware of their needs, but at times they struggle to voice them.
"That's fine with me, but don't be surprised if someone else gets mad."
- **Assertive:** Assertive communicators can express their own needs, desires, ideas, and feelings while also considering the needs of others.
"I respect the rights of others."

Interpersonal digital interaction

By now, learners should be understanding netiquette in a broad sense. Remind them that respecting others trying to make a good impression when communicating on the internet include many of the aspects of netiquette. Give learners these basic guidelines for interacting positively online:

- Whatever you write or post online, whether in a WhatsApp chat, email or on social media, can be found by others. This includes messages and photographs that have been deleted, and even websites you've visited. (Here, remind learners about the concept of their 'digital footprint'.)
- Being consistently polite shows respect. And respect is something you get when you give it.
- Being grateful for compliments, help or advice by saying a simple "Thank you" shows respect. The same goes for saying "Please" when you ask for help or advice.



Figure 3.6.2 – Your digital footprint is larger than you

- Following this rule shows respect for others, not only the person you're communicating with: If you have nothing good to say about a person, then say nothing. In other words, avoid gossip!
- Instead of using long words and complicated sentences, write clear, simple sentences that are easy for anyone to read and understand. Encourage learners to make sure that their writing is so clear that no one can misunderstand them.
- Don't swear, gossip, criticize, judge or condemn anyone online. Not only is this rude, but it is also traceable as part of a person's digital footprint.
- Encourage learners to only use emoticons when they know exactly what they mean and only when they know a person well. Emoticons can be misleading.

Example: Show the learners this example of frog emoticons. Tell them that, if they don't know what they are using the emoticon for, or if they use one randomly, they could risk being misunderstood or offending someone without realizing it. For example, an emoticon might tell a person you think they are a frog, that they are green with jealousy, that you are green with jealousy, or that they should hop off somewhere!



Figure 3.6.3 – Simple netiquette rules allow open communication

Activity 3.6.1: Making a good impression

In pairs, learners discuss the following questions as honestly and sincerely as possible:

1. How would you like to be treated by people you don't know when they communicate with you online?
2. Would you be able to express yourself freely with someone who treated you the way you want to be treated?

Activity 3.6.2: What do they mean?

On their own, learners pick five emoticons. For each emoticon, they write down how it can be interpreted in a good way and how it can be interpreted in a bad way.

Knowledge and skill checklist



I understand I should show respect to the others on the internet.

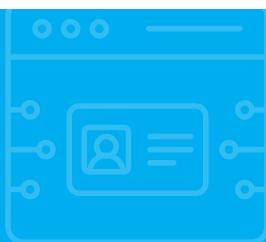
I understand how to express myself in a way that makes a good impression on others online.

I am aware of the meaning of non-verbal messages (e.g., smiley face, emoji) when using digital technologies.

I can express my feelings freely on the internet using online communications.

7

Managing digital identity

**Duration**

4 hours

**Objectives**

- Identify a digital identity.
- Describe simple ways to protect one's reputation online.
- Recognize simple data produced through digital tools, environments, or services.

**Content**

- Definitions and protecting identity
- Practical activities

**PowerPoint slides**

Use [this link](#) to access the PowerPoint slides deck for this unit.

**Lesson Plan Guide***

- 1 Definitions and protecting identity (45 minutes)
- 2 Practical activities (120 minutes)
- 3 Consolidation (15 minutes)
- 4 Knowledge and Skills Checklist

Additional online resources

- Passwords: How to protect your digital assets -
<https://www.funeralwise.com/learn/digitallegacy/how-to-manage-passwords/>
- The Digital Identity: What It Is + Why It's Valuable -
<https://learn.g2.com/digital-identity>
- What is Digital Identity and How Does it Work -
<https://www.techfunnel.com/information-technology/what-is-digital-identity/>
- <https://ec.europa.eu/jrc/en/digcomp/digital-competence-framework>
- <https://www.zdnet.com/article/identity-management-101-how-digital-identity-works/>
- <https://www.techrepublic.com/article/how-to-protect-yourself-and-your-organization-against-digital-identity-fraud/>
- <https://www.imperva.com/learn/application-security/phishing-attack-scam/#:~:text=Phishing%20is%20a%20type%20of,instant%20message%2C%20or%20text%20message>



Teaching notes

Definitions and protecting identity

This unit aims to make learners aware of the information they leave online. Explain that digital identity is something that relates to who they are online and how they identify themselves online. For example, when a person uses a username and password to authenticate themselves on a website, they are using their digital identity.

More and more services require us to log in from devices, both private and public. E-commerce, banking, health services, tax services are just a few examples. Explain to learners that every time they register their digital identity or do certain actions online, their private data are taken and recorded. Explain that this happens often without the user even realizing it (i.e., it may not be obvious that it is happening). Therefore, they need to be aware and learn how to best manage their digital identity online.

Definition of managing digital identity

Managing digital identity means: “To create and manage one or multiple digital identities, to be able to protect one's own reputation, to deal with the data that one produces through different digital tools, environments and services”. In other words, being able to control how you present yourself online from choosing an appropriate username to the things that you share when using that username.

Why do we have to worry about our data?

Remind learners that every time they consent to a privacy policy to access a site, download an app, answer surveys on social media, or enter a site using our information, they are generating data. This data is relevant to many companies because it reveals consumer behaviour – in other words, the things that people like and click on, etc.

Emphasize, however, that it is not just that they are leaving traces of what they like and do not like as consumers, they also leave very important private information that can be very damaging to us if used maliciously by others. For example, their bank account details or social accounts with photographs and personal information.



Figure 3.7.1 – Your digital identity can be stolen by hackers

Identity theft

Explain that cybercriminals are people who specialize in online theft by hacking into people's digital identity and stealing their personal or financial data. Cybercriminals hack into systems or use tricks to steal identities, and then money, information, and more.

You can give the example of some influencers (very famous people on social media) who have had their identity stolen by hackers, who lock them out of their own social media accounts and then demand a ransom to give them back their online identity.

How to defend ourselves against cybercriminals

Explain that there are ways that learners can protect themselves and their identities. Firstly, encourage them to be aware. Knowing how cybercriminals operate is key to preventing being targeted.

Another piece of advice for learners is that they should always exercise caution when they are online. For example, they should never open suspicious e-mails or messages. Often, cybercriminals pretend to be organizations that the victim recognizes (e.g., a bank). It is, therefore, very important that learners can recognize whether the information they receive is true.

Tell them to ask themselves these questions:

- Is it written correctly in your language?
- Are there any strange signs?
- Does it talk about operations of which you are not aware?

Encourage learners to trust their instincts. If they have the slightest suspicion that something is not right, they should not click on, or download anything. Learners may ask what they should do if they are not sure whether something is right or not. An example is a message from their bank. In this case, they could call their bank branch and ask for an explanation or to confirm that the message is indeed from them.

Explain that the method of sending an email from a ‘familiar’ source with a link that must be clicked, is called a phishing attack.



Figure 3.7.2 – There are ways of protecting your digital identity

Ways to protect our digital identity

Give learners these tips for protecting themselves online:

- **Use two-factor authentication:** Two-factor authentication means that verifying a user's identity is not only done through one step (e.g., password), but also through additional steps, such as entering a code or authorization via the telephone.
- **Change and diversify passwords:** Encourage learners to not use the same passwords for all their accounts, and to try to change them often.
- **Avoid sharing sensitive information:** Learners must be very careful about the kind of data they share online. An example of data that is considered too sensitive to share online is a person's home address (be careful of geolocation on photos you post on social networks!).

Activity 3.7.1: The private-eye game

1. Ask learners to imagine that they are talking to a friend who tells them that they have met a classmate of theirs from school.
2. Ask them whether they are curious to know more about that person with whom they were so close when they were younger.
3. Ask the learners to search their first and last name on the internet and then expand the research (they can also do the research on themselves or on a person they know). Ask the learners:
 - a) What did you find out about that person?
 - b) Which tools did you use to help you in your research?
 - c) Which platforms did you consult?
4. Try to answer the following questions:
 - a) What city do they live in?
 - b) Are they married?
 - c) What did they study?
 - d) What is their job?
5. At the end of the activity, the educator invites learners to carefully reflect on what information we share online.

Activity 3.7.2: How secure is your password?

In this activity, you will teach learners the importance of having a secure password on their accounts.

1. Ask learners to imagine having to prepare passwords for one of the following people:



Achen Apio

Born: 25 June 1998

Lives in: Kampala

Married

She has three children



Kaikara Mbabazi

Born: 11 March 2001

Lives in: Lira

Single

He loves motorbikes



Masiko Okello

Born: 1 December 2013

Born in: Entebbe

Single

She has a dog called Spot

- a) Write a different password for each person playing with words (at least 5). Think of a different password depending on the account you need to create it for (i.e., bank; Facebook; private email; work email, e-commerce and so on).
 - b) Now test the security level of your password online (there are several platforms that you can use for example <https://howsecureismypassword.net/>).
2. At the end of the activity, invite learners to carefully reflect how to create a good password to guarantee a security level online.

Ask these questions:

- How do you create your passwords? Do you always use the same one for all sites or do you have different ones?
- Do you think there are sites where you need a higher level of password security than others?
- What tricks should be used to create secure online passwords?
- How often should passwords be changed?
- Do you know how cybercriminals can steal your passwords?

Knowledge and skill checklist



I can display a variety of specific digital identities.

I can discuss specific ways to protect my reputation online.

I can manipulate data I produce through digital tools, environments, or services.

Module 3 assessment guidance

Assist learners to set up where needed. Ensure that they know what they need to do and what is expected of them.



Materials needed

- Laptop or tablet with an Internet connection
- Paper and pen.

Before the assessments begin, learners should switch on their devices and log in.

Unit 1: Interacting through digital technologies

1. Learners open the email program.
2. Learners write a new email to a friend, inviting them to their home.
3. Learners' emails must include a subject line and email address.

Unit 2: Sharing through citizenship through digital technologies

1. Learners open the email they drafted for the previous unit.
2. They demonstrate that they can attach a file or photo to the email.

Unit 3: Engaging in citizenship through digital technologies

1. Learners will research 'cyber security risks'.
2. They find a possible online website where you can learn more about the topic.
3. Learners write down the name of the website.

| | |
|---|--|
| Unit 4: Collaborating through digital technologies | <ol style="list-style-type: none"> 1. Learners demonstrate that they can open Facebook in their browser. 2. They find the page for the National Government of Uganda on Facebook. 3. They demonstrate that they can share a post from the page that they like or agree with. |
| Unit 5: Netiquette | <ol style="list-style-type: none"> 1. Learners write down three rules to follow that show good netiquette. 2. Learners write down how they would reply to the following message: "I DIDN'T LIKE WHAT YOU SAID!!! Everyone knows that you're STUPID!". |
| Unit 6: Digital emotional intelligence | <ol style="list-style-type: none"> 1. Read out this chat message to the learners: "I am having a great day. I was hoping to see you later. Please don't tell me you have changed your mind about meeting me for lunch." 2. Learners retype this message twice, which you then assess. <ul style="list-style-type: none"> a) First, they can use emoticons, capital letters and punctuation to change it into a happy message. b) Then, change it to an angry message. |
| Unit 7: Managing digital identity | <ol style="list-style-type: none"> 1. Write text message on the board (Note: Write it exactly as you see it here, as the formatting is also important): "Text-- birthday! and your full name! to +256 555 222999 now to win Ush5 000 000... from Uganda Banks" 2. Learners write down the hints in the message that tell you it is a scam. 3. Learners write down three sentences about how they could protect themselves online. |



Module 4

Content

This module focuses on content creation for the digitally competent citizen. We aim to create a shared understanding of what it means to be a digitally competent citizen, as well as developing and testing materials, which create a clear pathway to upskilling learners in the main relevant digital areas.

This module will outline how to create and edit digital content to improve and integrate information into an existing body of materials, while also highlighting the important issues around copyrighting and licensing in the digital sphere. It will also briefly touch on the programming aspects of how to utilize computer systems.

Please note that practical activities described might require the support of an experienced facilitator. Although the information presented in this guide is written in a way that is easy to understand, some actions, adjacent to the information presented, may also require the support of experienced people.

This module includes the following units:

| | |
|---------------|---|
| Unit 1 | Developing digital content |
| Unit 2 | Integrating and editing digital content |
| Unit 3 | Copyright and licenses |
| Unit 4 | Programming |

Learning outcomes

Learners should be able to:



- Create and edit digital content in different formats, to express oneself through digital means.
- Modify, refine, improve, and integrate information and content into an existing body of knowledge to create new, original, and relevant content and knowledge.
- Understand how copyright and licenses apply to data, digital information, and content.
- Plan and develop a sequence of understandable instructions for a computing system to solve a given problem or perform a specific task.

Resources



- Training manual
- Computer with internet access
- Flipchart papers
- Markers

Suggested teaching methods



The following teaching methods are suggested:

- Presentation by facilitator
- Group exercise / Discussion / Debate
- Working in pairs / Small groups
- Presentation by participants
- Media selection



New terminology to explain

These are terms that learners may not be familiar with. They should be explained within the context that they may be used.

| | |
|------------------|--|
| copyright | copyright ownership gives the creator (owner) the exclusive right to use the work. |
|------------------|--|

| | |
|------------------|--|
| copyright | the exclusive and assignable legal right, given to the originator for a fixed number of years, to print, publish, perform, film, or record literary, artistic, or musical material |
|------------------|--|

| | |
|------------------------|--|
| default setting | a setting that is automatically given to a software application, computer program, or device |
|------------------------|--|

| | |
|-----------------------|---|
| domain hosting | provides unique domain names for websites |
|-----------------------|---|

| | |
|---------------------------------|--|
| domain name server (DNS) | translates IP addresses into everyday language |
|---------------------------------|--|

| | |
|-------------------|---|
| plagiarism | using someone else's work without giving them proper credit |
|-------------------|---|

| | |
|---|--|
| search engine optimization (SEO) | the process of improving your site to increase its visibility when people search for products or services related to your business |
|---|--|

| | |
|-------------|---|
| vlog | a combination of the words 'blog' and 'video' |
|-------------|---|

| | |
|--------------------|---|
| web hosting | a service that provides content storage, such as a website with all its text and other content on a server in the cloud |
|--------------------|---|

1



Developing digital content



Duration

2.5 hours



Objectives

- Produce simple digital content (e.g., text, tables, images, audio files) in at least one format using digital tools.



Content

- Developing digital content
- Common types of online digital content
- Practical activities



PowerPoint slides

Use [this link](#) to access the PowerPoint slides deck.



Lesson Plan Guide

- | | |
|---|---|
| 1 | Developing digital content (90 minutes) |
| 2 | Common types of online digital content (45 minutes) |
| 3 | Consolidation (15 minutes) |
| 4 | Knowledge and Skills Checklist |

Additional online resources

- How to start a blog: https://www.bluehost.com/how-to-start-a-blog?irpid=101&clickid=P61C101S570N0B5578A2D4499E0000V105&gclid=CjwKCAjwkaSaBhA4EiwALBqQaMjW1r8iWI9DzPWzC7MHz-j_Oq05jf2avhd5hvUQUbGOHeALLnhB3BoC36UQAvD_BwE&gclid=src=aw.ds
- <https://wordpress.com/>
- How to write long form content: https://webflow.com/blog/the-modern-web-design-process-putting-content-first?utm_source=google&utm_medium=search&utm_campaign=Google-Search-Dynamic-Search-Ads-Core-BBSS&utm_term=dsa-45211625058_548501651919_ss_paid-bb&qclid=CjwKCAjwkaSaBhA4EiwALBqQaIqhkWAfHPFUf4Iyzp0GdRufRiJyr5RRdWtBOm8izhZOC2GCZxU12BoC894QAvD_BwE
- How to create an infographic: <https://piktochart.com/blog/how-to-create-an-infographic-and-other-visual-projects-in-5-minutes/>
- <https://www.visme.co/>
- <https://venngage.com/>
- How to create a video: https://vimeo.com/create/video-maker-online?vcid=42496&utm_medium=cpc&utm_source=google&utm_campaign=seat_plan&utm_term=nonbrand&qclid=CjwKCAjwkaSaBhA4EiwALBqQaCsJz8fozq1M5XGCa90r0LAXKCrYia9oyGFz1a-oOPZNuHZEleYIFxoCecQQAvD_BwE&gclid=src=aw.ds
- How to create a podcast: [https://restream.io/blog/best-podcast-recording-and-editing-software/?from=ppc_blogtest&utm_source=google&utm_medium=cpc&utm_campaign=Search / How to / Tier 1-7_v1_\(AL\)&utm_campaignid=18292822955&utm_adgroup=Podcast_software:_how_to_choose_and_which_are_the_best&utm_adgroupid=146763447771&utm_content=620791896423&utm_term=how%20to%20create%20a%20podcast&utm_device=c&utm_adposition=&from=cpc-google&qclid=CjwKCAjwkaSaBhA4EiwALBqQaIDsaNssSeO2c90IT9muNVTfEyOWH3N16ieRusOrNe-rELBDG5OsIBoCRJkQAvD_BwE](https://restream.io/blog/best-podcast-recording-and-editing-software/?from=ppc_blogtest&utm_source=google&utm_medium=cpc&utm_campaign=Search / How to / Tier 1-7_v1_(AL)&utm_campaignid=18292822955&utm_adgroup=Podcast_software:_how_to_choose_and_which_are_the_best&utm_adgroupid=146763447771&utm_content=620791896423&utm_term=how%20to%20create%20a%20podcast&utm_device=c&utm_adposition=&from=cpc-google&qclid=CjwKCAjwkaSaBhA4EiwALBqQaIDsaNssSeO2c90IT9muNVTfEyOWH3N16ieRusOrNe-rELBDG5OsIBoCRJkQAvD_BwE)



Teaching notes

Developing digital content

Digital content is any content that has been created on a computer, tablet, or mobile phone. The content can be text, sound (audio) that is recorded using a microphone, or videos created using a tablet or smartphone.



Take note:

- Video files have a file extension .mp4
- Audio files have a file extension .mp3

Many people think that digital content is created for online use only. Much digital content is shared with others online, such as social media posts, group messaging chats, videos on YouTube, and music on Spotify. However, some digital content is created solely for the user and is not shared online.

Share these examples of digital content that is not shared online:

- A to-do list created in a plain text editor, such as Windows® Notepad
- Notes, research, and website addresses in a Microsoft® Word or Google® Docs document, which a learner uses to write an assignment
- A personal budget created on an electronic spreadsheet, such as Microsoft® Excel or Google® Sheets
- A photo taken on smartphone
- A drawing created with graphics software, such as Adobe® Illustrator
- A voice note recorded on a smartphone
- A video of children playing recorded on a camcorder.

Even though many of these examples could be uploaded to the internet, that was not necessarily the user's original intention.



Figure 4.1.1 – Tablets and smartphones can be used to record videos or sound clips that are inserted into documents or presentations.

Learners should be able to do the following:

- Take a photograph
- Record a voice message
- Create a simple document in a plain text editor or word processor
- Create a table in a document
- Copy web addresses into a document while doing research on the internet
- Record a simple video using a smartphone or tablet.

If learners can't perform all of these tasks, demonstrate each of them and allow the learners to practice until they can complete all the skills without assistance.

Activity 4.1.1: Write a report

1. For this group activity, ask learners to write a report about a recent school event, such as a variety concert, a fête, or a sports day.
2. Some learners will take photographs, while others will write sections of the report. One learner compiles all the input into one document.
3. Learners must include the following in their report:
 - a) A simple two-column, five-row table containing data about the event, such as:
 - b) The types of acts presented at the concert and the number of learners who participated in each act.
 - c) The names of the stalls at the fête and the number of people who were attending at each one.
 - d) The names of the athletics events and the winners of those events.
 - e) Three photographs taken at the event.
 - f) A short audio file of a sound effect that suits the event. This can be an audio recording on a smartphone or downloaded from a Creative Commons website, such as <https://freesound.org/>
4. When the groups have completed the activity, they save their documents.

Guidelines to follow when teaching online digital content

Review the five common types of online digital content explained later in this unit and demonstrate how to access and use each type. Then demonstrate how to design and plan a page of digital content that includes multimedia. If required, demonstrate how to:

- layout and design in a document
- create graphs and charts in a spreadsheet program, or in a document
- download free-to-use clipart, photos, diagrams, and illustrations for use in a digital document.

Demonstrate how to create a blog using WordPress or any of the free site builders mentioned in this article: <https://themeisle.com/blog/best-free-blogging-sites/>

Give learners the time and opportunity to outline, design, and create the content, and build a single-page informative and attractive website or blog. Ask learners to select text, image, audio, and video content in the best possible format for users to download.



Figure 4.1.2 – Demonstrate how to use templates

Common types of online digital content

Blogging

Blog posts are a basic way of creating engaging content. Many people enjoy reading well written and insightful blogs or articles. For many people, accessing and reading these is a daily ritual.

Blogging allows people and organizations to share lots of information in an informal way. It is often used to create a connection with readers, hooking them in to come back for more. It can be time consuming to maintain a successful blog, as followers expect regular episodes. Share with learners that most successful bloggers plan their posts carefully, and most create a bank of materials before they kick it all off.

Encourage learners who are interested in blogging to create a plan with ideas for the first two to three months of blog content. They should also then implement a schedule for uploading new episodes. This keeps posts consistent, and readers engaged with the content.



Figure 4.1.3 – Plan your strategy and content well ahead of time



By GUILLAUME DECUGIS published JULY 13, 2016
Content Marketing Strategy / Content Marketing Tools and Technology / SEO

7 Ways Technology Can Make You a Smarter Content Marketer

Marketers have high expectations of technology's effect. We recently surveyed 300 marketers and at least two-thirds said it's likely or very likely that technology will make content marketing significantly more efficient in the various tasks of the life cycle.

They're right. When used appropriately, technology can bring more efficiencies — a tactical benefit. However, I prefer to emphasize that when used strategically, technology helps



Figure 4.1.4 – An example of an attractive blog design

Additional online resources



- Share this link with learners who are interested in starting their own blog:
https://www.wix.com/blog/2021/02/how-to-start-a-blog/?utm_source=google&utm_medium=cpc&utm_campaign=9852964004^122617225367&experiment_id=^b^504114447774^DSA&qclid=CjwKCAjwh5qLBhALEiwAiods-cylXXhYEWcT_ZrqTbAelxDqSkTV_pdKfnoxlptSsbI02lw87MxOC6dwQAvD_BwE

Longform content

In the instant world we live in, creating and sharing longform content can be a bit of a gamble. Most people like to receive their information in short, bite sized chunks. However, the definition of longform is adapting to reflect this. Some experts define longform content as articles longer than 700 words, while others believe that an article must exceed 1,800 words to be considered longform. These types of longform content articles can appeal to enthusiastic readers; it engages them and provides them with an escape. Some organizations and news outlets also use it to properly unpack a current issue or news item in more detail. For example, *The Guardian* newspaper (in the UK) has a weekly longform article called *The Guardian Long Read*, which is very popular.

This type of content can work particularly well if there is a focus on **Search Engine Optimization** (SEO), including key word optimization. By pinpointing words that can be used often in a natural way, and which will be of interest to your target audience, a writer can ensure that the content lands on the readers' screens.



Figure 4.1.5 – Long form articles need detailed planning



Additional online resources

- Share these tips for making content readable and valuable with learners:
<https://medium.com/swlh/10-tips-to-make-long-form-content-readable-and-valuable-5b6e117965ae>

Activity 4.1.2: Upload a report

- Ask learners to upload the reports written in the previous activity on a shared folder in on the school network, Microsoft® OneDrive or Google® Drive, or the school's website, which will be created later in this unit.
- Learners can also share their work on the school's social media site.

Knowledge and skill checklist



I can produce simple digital content (e.g., text, tables, images, audio files) in at least one format using digital tools.

2

Integrating and re-elaborating digital content



| | | |
|--|--------------------------|---|
| | Duration | 4 hours |
| | Objectives | <ul style="list-style-type: none">• Make basic editing to content produced by others. |
| | Content | <ul style="list-style-type: none">• Content creation and integration• Storing content• Practical activities |
| | PowerPoint slides | Use this link to access the PowerPoint slides deck. |
| | Lesson Plan Guide | <ol style="list-style-type: none">1 Content creation (135 minutes)2 Storing content (90 minutes)3 Consolidation (15 minutes)4 Knowledge and Skills Checklist |

Additional online resources



- Insert footnotes: https://www.youtube.com/watch?v=r9_dw_CxG6w
- Insert charts: <https://www.youtube.com/watch?v=bOMKI2RPzrA>
- Macros: <https://support.microsoft.com/en-us/office/create-or-run-a-macro-c6b99036-905c-49a6-818a-dfb98b7c3c9c#:~:text=In%20Word%2C%20you%20can%20automate,to%20accomplish%20a%20task%20automatically.>
- <https://www.customguide.com/word/how-to-create-a-macro-in-word>
- <https://www.youtube.com/watch?v=D33xcH1ZpI>
- Mail merge: <https://www.youtube.com/watch?v=9oeuE8nqliQ>
- Merge documents: <https://www.youtube.com/watch?v=zLNIRlvaU2w>
- Use formulas: <https://www.youtube.com/watch?v=Jl0Qk63z2ZY>

Teaching notes

Content creation and integration

Content creation and integration is to modify, refine, and integrate new information and content with an existing body of knowledge and resources to create new, original, and relevant content and knowledge.

To create highly engaging content for your audience, encourage learners to bear the context and to constantly ask themselves: Who am I trying to reach?

Learners should use their strengths to reach the target group. They can start by carrying out some market research to ensure they are making the right choices. While you are showing them how to integrate their content into already existing resources, you will show them how to use productivity software and apps to achieve this in an efficient and useful manner.

Using tools that already exist means that they will expend less time and energy, while still achieving the end goal: to create content that is highly engaging, meets their needs, and the needs of their target audience.

YouTube has a massive bank of publicly available materials, which can be extremely useful. Podcast content on this topic is also freely available and can help to supplement the resources you are sharing.

Storing content

When learners have created and integrated their digital content, it is vitally important that they have the skills and knowledge to know where to safely save this content for ease of access but also security.

Cloud file sharing can be a useful platform, providing users with the ability to access their content from any device. This flexibility means that they are not tied to a physical PC, which is important in a dynamic and ever-changing world. Encourage learners to try Dropbox, Google Drive, and One Drive and change the way they share materials.

Guidelines to follow when teaching content creation and integration

As the facilitator, you may find these guidelines useful:

- Use the Home tab in Word to explain and demonstrate what basic text formatting is and how it can enhance readability in terms of:
 - fonts that are easy to read and increasing font sizes to create headings
 - text styles, such as bold and italic, to emphasize words or phrases
 - text colour and highlighting
 - text alignment and paragraph settings, such as interline spacing
 - built-in styles for headings, body text, lists, quotations and references



Figure 4.2.1 – Show learners the home tab and demonstrate how to use it.

- Use the Insert tab to explain and demonstrate inserting the following:
 - the Pages group to create new pages and page breaks
 - the Tables group
 - the Illustrations group where images from elsewhere (pictures) are inserted and shapes, SmartArt, charts and screenshots can be created/inserted
 - the Header & Footer group to insert headers, footers and page numbers.



Figure 4.2.2 – Show learners the insert tab and demonstrate how to use it.

- Use the Design tab to explain and demonstrate using built-in themes and effects.
- Use the Layout tab to explain and demonstrate how to set up a page sizes, orientation, and margins.

Activity 4.2.1: Review and edit someone else's content

1. Learners work in groups. Each member of the group gives the other members access to the blog of a school or community event that they created in the previous activity.
2. Group members give the following feedback on each report:
 - a) What they found attractive and easy to read
 - b) Ways to improve on the style, colours, and quality
 - c) Corrections to spelling or grammar errors
 - d) Suggestions of information that could be added about an upcoming event that is similar to the event in the report.
3. Each learner implements the review on their report. In cases where the learner does not implement a suggestion or correction, they give reasons for not doing so.
4. Each article is saved on the school or community network.

Knowledge and skill checklist



I can make basic editing changes to content produced by others.

3

Copyright and licenses



| | | |
|--|--------------------------|---|
| | Duration | 4.5 hours |
| | Objectives | <ul style="list-style-type: none">• Know that content can be covered by copyright. |
| | Content | <ul style="list-style-type: none">• What is copyright?• Using a copyright-protected work without infringing• Copyright Law• Copyright law and the internet• Practical activities |
| | PowerPoint slides | Use this link to access the PowerPoint slides deck. |
| | Lesson Plan Guide | <ol style="list-style-type: none">1 What is copyright? (45 minutes)2 Using a copyright-protected work without infringing (75 minutes)3 Copyright Law (45 minutes)4 Copyright law and the internet (90 minutes)5 Consolidation (15 minutes)6 Knowledge and Skills Checklist |

Additional online resources



- Creative Commons: <https://creativecommons.org/>
- How to cite sources online:
<https://blog.hubspot.com/blog/tabid/6307/bid/33098/how-not-to-steal-people-s-content-on-the-web.aspx>
- How to copyright material in Uganda:
<https://ursb.go.ug/intellectual-property>

Teaching notes

What is copyright?

Copyright ownership gives the owner the exclusive right to use the work, with some exceptions. When a person creates an original work, fixed in a physical form (electronic or hardcopy), they automatically own copyright to the work. Many types of works qualify for copyright protection, for example:

- Audiovisual works, such as TV programmes, films, and online videos
- Sound recordings and musical compositions
- Written works, such as lectures, articles, books, and musical compositions
- Visual works, such as paintings, posters, and advertisements
- Video games and computer software
- Dramatic works, such as plays and musicals.



Figure 4.3.1 – Copyright covers all areas of content that is created.

Using a copyright-protected work without infringing

In some circumstances, it is possible to use a copyright-protected work without infringing on the owner's copyright. Some content creators choose to make their work available for reuse with certain requirements. For more about this, encourage learners to read up about *Creative Commons licenses*.

There are six Creative Commons (CC) licenses. These CC licenses indicate the use restrictions that have been granted by the content creator. The content creator still owns the copyright to that content but, through the selected CC license, the creator is granting people and organizations the right to reuse it under specified restrictions.

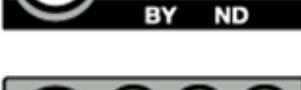
| LICENSES | TERMS |
|---|--|
|  |  Attribution Others can copy, distribute, display, perform and remix your work if they credit your name as requested by you |
|  |  No Derivative Works Others can only copy, distribute, display or perform verbatim copies of your work |
|  |  Share Alike Others can distribute your work only under a license identical to the one you have chosen for your work |
|  |  Non-Commercial Others can copy, distribute, display, perform or remix your work but for non-commercial purposes only. |
|  | |
|  | |

Figure 4.3.2 – Creative Commons content may be licensed in different categories

Copyright Law

Copyright law exists in all countries. Work created in a country is subject to the copyright laws of that country and the copyright laws of the country in which it may be used. For example, if you live in Uganda and would like to use work created in Germany, not only must you adhere to the copyright laws of Uganda, but also those of Germany.



Figure 4.3.3 – Copyright law gives the creator legal protection

Copyright law and the internet

Access to the internet makes it very easy to copy other people's work directly into your own document. However easy it may be, it is illegal if you do not acknowledge the person who created it. The creator is the owner of that content, so copying it and letting people think it is your own work is **plagiarism**, which is a form of theft. This applies to all types of content, such as written content, images, videos, and audio recordings.

Make sure that learners understand that they can reuse any content they like, provided they don't sell it for profit and if they write a reference to the owner below it or next to it.

Learners may ask questions about how people get caught out stealing other people's text content. The test for plagiarism is very easy for facilitators, lecturers, editors, publishers, and other professionals to do. Because so much content is online, plagiarism 'hunters' can simply copy and paste suspicious content into a search engine.

Give the learners an example of a learner who writes an assignment on the latest advances in computer technology. The lecturer notices that the text content and style are too professional for this learner to have written it. The learner is interested in computers and is brilliant at programming, but typically they do not express themselves well. So, the facilitator copies and pastes the following line of text into Google:

“There are 11 top emerging technology trends to watch”

And this popped up at the top of the results:

A screenshot of a search results page from a web browser. The search query is "There are 11 top emerging technology trends to watch". The results page includes a navigation bar with "All", "News", "Images", "Videos", "Books", "More", and "Tools" buttons. Below the navigation bar, it says "About 406 000 000 results (0,61 seconds)". A link to a blog post titled "11 Top Emerging Technology Trends to Watch in 2022" is shown, along with a snippet of the first bullet point: "1. Cloud-Native Platforms · 2. Decision Intelligence · 3. Cryptocurrency And Bitcoins · 4. Artificial".

Figure 4.3.4 – Show learners the webpage. scroll to the bottom

If the learner had scrolled to the bottom of the landing page or any other page, they would have seen that the material on the site is subject to copyright, which they have now infringed.

Copyright 2022 Clarion. All Rights Reserved.

Figure 4.3.5 – Highlight the copyright at the bottom of the site

The learner could have used the information in the article quite legally by adding this as a footnote:

Adapted from: *11 Top Emerging Technology Trends to Watch in 2022* on <https://www.clariontech.com/blog/>. Information accessed on 13 March 2023.

Online plagiarism checkers

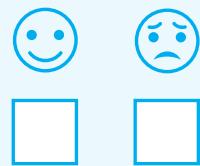
There are free plagiarism checker apps online that allow people to upload suspicious content for checking. These checkers compare the suspicious content with content in hundreds of similar or related documents. It is very difficult to get past these checkers as they are powered by computers that can check and compare word for word and line by line.

Activity 4.3.1: Know when content is copyrighted

1. Give learners links to three online articles.
2. Ask the learners to find out whether the articles are subject to copyright. They should also tell you how they know.
3. Hold a class discussion on plagiarism and why it is generally frowned upon.

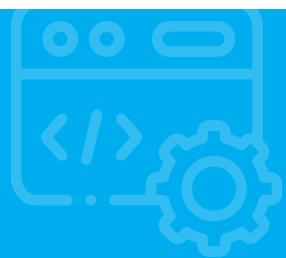
Knowledge and skill checklist

I know that content can be covered by copyright.



4

Programming



| | |
|-------------------|---|
| Duration | 4 hours |
| Objectives | <ul style="list-style-type: none">Apply and modify simple functions and settings of software and applications (e.g., change default settings). |
| Content | <ul style="list-style-type: none">Default settingsProgramming and coding basicsTips to help you learn a new programming languagePractical activities |
| PowerPoint slides | Use this link to access the PowerPoint slides deck. |
| Lesson Plan Guide | <ol style="list-style-type: none">1 Default settings (165 minutes)2 Consolidation (15 minutes)3 Knowledge and Skills Checklist |

Additional online resources

- How to modify functions and settings:
<https://answers.microsoft.com/en-us/windows/forum/all/how-do-i-change-the-function-key-settings/e542b094-ebf5-441f-93da-80367ac15b07>
- <https://blogs.helsinki.fi/learners-digital-skills/1-introduction-to-the-use-of-computers/1-1-computer-functionality/operating-system-settings/>
- Programming languages:
<https://www.simplilearn.com/tutorials/python-tutorial/python-variables>
- <https://futurecoder.io/>
- <https://www.simplilearn.com/best-programming-languages-start-learning-today-article>
- Python: <https://ca.indeed.com/career-advice/career-development/beginner-projects-for-python>
- Java: <https://ca.indeed.com/career-advice/career-development/popular-java-applications>
- Javascript: <https://ca.indeed.com/career-advice/career-development/what-is-javascript>
- C and C++: <https://ca.indeed.com/career-advice/career-development/c-sharp-vs-c-plus-plus>



Teaching notes

Default settings

What are default settings?

All devices, whether a laptop, tablet or smartphone have specific software installed when they are manufactured. Likewise, the software has basic **default settings** pre-configured so that the device works effectively when purchased.

Changing default settings

A default setting can be as simple as the ringtone on a smartphone. There is no harm in a user changing the ringtone to a sound that they would prefer. Other default settings are more complex and can affect the functioning of the device. Emphasize that learners should never change a default setting if they do not understand or know how it will affect the device's functioning.

Explain that the most-used icon to indicate the settings on any device is a cogwheel or gear. Show learners where to find it and how to recognize it and explain that this is this icon to click or tap if they want to open the Settings feature.

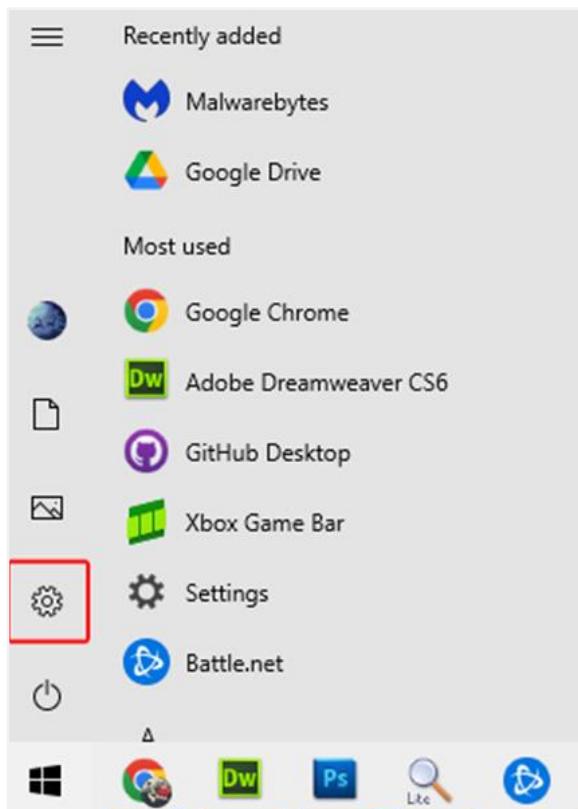


Figure 4.4.1 – The settings key on a laptop

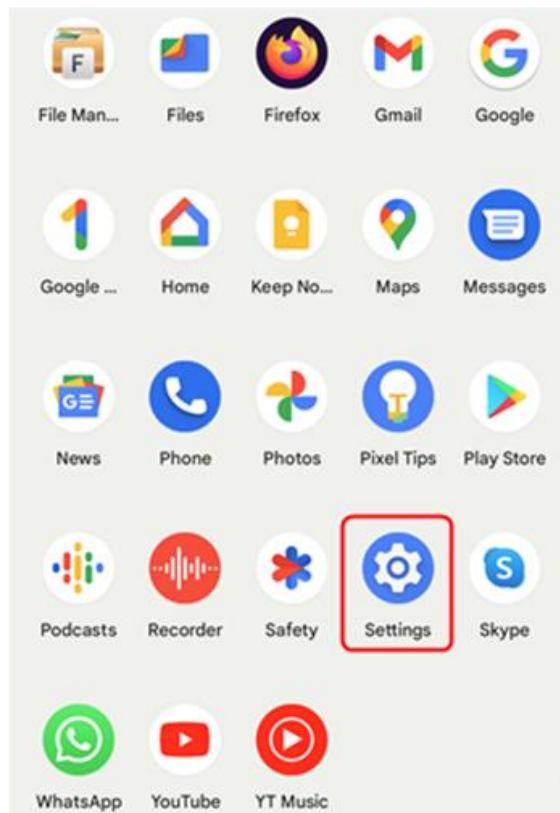


Figure 4.4.2 – The settings app on a tablet or smartphone

Guidelines to follow when teaching default setting changes

As the facilitator, you may find these guidelines useful:

- Inform learners that all devices and applications have settings that the user can change. Any settings that relate directly to the operating system should **not** be changed under any circumstances.

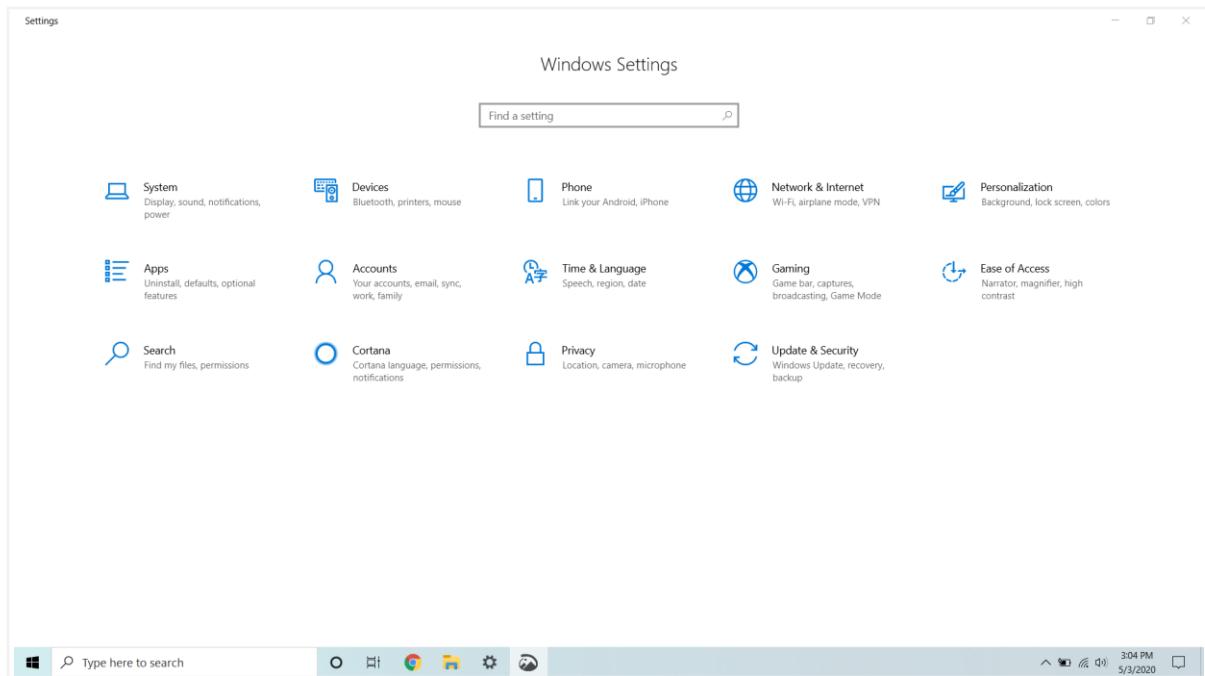


Figure 4.4.3 – The settings page of a laptop

- In this Windows settings dialogue box, the settings that are safe for a basic user to change are Personalization, Apps, and some of the settings in System, such as Display and Sound. The rest should be changed by an advanced or expert user.
- Demonstrate how to change a default app, in this case the web browser.



Figure 4.4.4– Demonstrate how to change the default app of a browser

Activity 4.4.1: Change a default setting

This group activity requires a laptop, tablet, or smartphone per group.

1. Instruct the learners to find the settings listed below and to test each change they make to the default settings.
 - a) Increase the brightness in the Display settings
 - b) Decrease the volume in the Sound settings
 - c) Change the background in the Personalize settings
 - d) Lock the taskbar in the Personalize settings
 - e) Choose a different default browser in the Apps settings
2. Groups share their experience with another group.

Knowledge and skill checklist

I can apply and modify simple functions and settings of software and applications that I use (e.g., change default settings).



Module 4 assessment guidelines

Assist learners to set up where needed. Ensure that they know what they need to do and what is expected of them.

Materials needed



- Before the assessment, learners should prepare photographs to show a day in their life
- Laptop or tablet with an internet connection
- Paper and pen.

Unit 1: Developing digital content

1. Learners prepare a post for Instagram. The post must be about a day in their life.
2. Learners write down four sentences that you will post.
3. They use four photos about their day to match each sentence.
4. Learners type their sentences and upload their photos as a post.

Unit 2: Integrating and re- elaborating digital content

1. The learners should work in pairs for some of this assessment but explain that they should complete each step individually.
2. Learners create a document on their online storage drive.
3. Learners insert two lists on their document:
 - a) List A – your five favourite foods
 - b) List B – the main ingredients in the foods.
4. Learners share their document with their partner.
5. Each learner should open their partner's document and edit their list.

| | |
|---|---|
| | <ol style="list-style-type: none"> 6. Give the learners these instructions. Assess the work once they are done. 7. Change the font type and size to any of your choice. 8. Change the font colour to any shade of purple. |
| Unit 3: Copyright and licenses | <ol style="list-style-type: none"> 1. Learners demonstrate that they can navigate to Google images. 2. They search <i>Copyright Uganda artwork</i>. 3. Learners find an image they like that is protected by copyright. 4. Learners write down who created the artwork and who is the copyright holder. |
| Unit 4: Programming | <ol style="list-style-type: none"> 1. Learners change the wallpaper of their device to a picture of their choice. Assess their changes. 2. Learners change the screensaver of their device to any of their choice. Assess their changes. |



Module 5

Safety and security

This module focuses on online safety and aims at drawing learners' attention to this issue and informing them on how to reduce risks and keep safe online.

During this module, you will teach learners about security measures used to protect computer networks and devices. As these lessons will most likely take place in a computer classroom at a school or community centre, we strongly advise that no learner be allowed to install or uninstall security software or make changes to the settings on any device, as this may compromise the integrity of the cybersecurity of the computer centre.

Please note that practical activities described in each unit might require the support of an experienced trainer. Although the information presented in the manual is written in a way that is easy to understand, some actions, adjacent to the information presented, may also require the support of experienced people.

This module includes the following units:

| | |
|---------------|---|
| Unit 1 | Protecting devices |
| Unit 2 | Protecting personal data and privacy |
| Unit 3 | Protecting health, well-being and building digital resilience |
| Unit 4 | Protecting the environment |

Learning outcomes

Learners should be able to:



- Protect devices and digital content, and to understand risks and threats in digital environments.
- Know about safety and security measures and to have a due regard to reliability and privacy.
- Protect personal data and privacy in digital environments.
- Understand how to use and share personally identifiable information while being able to protect oneself and others from damages.
- Understand how to use and share personally identifiable information while being able to protect oneself and others from damages.
- Avoid health-risks and threats to physical and psychological well-being while using digital technologies.
- Protect oneself and others from possible dangers and risks in digital environments (e.g., cyberbullying).
- Get clear recourse and help if risks or dangers happen.
- Be aware of the environmental impact of digital technologies and their use.

Resources



- Training manual
- Computer with internet access
- Flipchart papers
- Markers
- Editing programme

Suggested teaching methods



- Presentation by facilitator
- Group exercise / Discussion / Debate
- Working in pairs / Small groups
- Presentation by participants
- Media selection



New terminology to explain

These are terms that learners may not be familiar with. They should be explained within the context that they may be used.

| | |
|--------------------------------------|--|
| connections | friends, family, acquaintances |
| cookies | cookies are text files with small pieces of data, like a username and password, that are used to identify your computer as you use a computer network |
| malicious | harmful or damaging |
| malware | software that is specifically designed to disrupt, damage, or gain unauthorized access to a computer system |
| post | share |
| pushed | installed |
| Virtual Private Network (VPN) | a service that protects your internet connection and privacy online by creating an encrypted tunnel for your data, protecting your online identity by hiding your IP address, and allowing you to use public Wi-Fi hotspots safely |

1

Protecting devices

**Duration**

6 hours

**Objectives**

- Take basic steps to protect devices (e.g., using antivirus and passwords).
- Understand that not all online information is reliable.

**Content**

- Security and passwords
- Protecting devices
- Software updates
- Increasing security
- Malicious code

**PowerPoint slides**

Use [this link](#) to access the PowerPoint slides deck.

**Lesson Plan Guide**

- | | |
|---|--------------------------------------|
| 1 | Security and passwords (165 minutes) |
| 2 | Protecting devices (180 minutes) |
| 3 | Consolidation (15 minutes) |
| 4 | Knowledge and Skills Checklist |

Additional online resources

- What is an antivirus program? – <https://www.computerhope.com/jargon/a/antiviru.htm>
- Top 10 antivirus programmes – https://www.googleadservices.com/pagead/aclk?sa=L&ai=DChcSEwjSIJz-s9_6AhVQ0-OKHaXMC6MYABACGgJkZw&ohost=www.google.com&cid=CAESa-D2GuuZok_tO55XxVDMv-e0TAmw4gaz_M0ujYecvqOn-hFmJvoNBxGCfnawy-QxyPk_dSSvLZlo41NUf3RIFMeNE5vuMr6k7ujCKcMixANc5q8pSUO8JD_LadsEkncDAMa53PtY7nG9dtAQ&sig=AOD64_2Td2aGEDBFomP0DAUAWoinp3wYtg&q&adurl&ved=2ahUKEwi6tpX-s9_6AhUfTEEAHftmBJkQ0Qx6BAgHEAE
- Firewalls – <https://www.checkpoint.com/cyber-hub/network-security/what-is-firewall/#:~:text=A%20Firewall%20is%20a%20network,network%20and%20the%20public%20Internet.>



Teaching notes

Security and passwords

Change default log-in passwords and usernames

Most network devices come with default passwords to make them easier to setup. These default passwords are not secure – they may be available on the internet or may even be physically labelled on the device itself. Remind learners that if they leave these unchanged, they create opportunities for cybercriminals to gain unauthorized access to information, install malicious software, and cause other problems.



Figure 5.1.1 – It is very hard to identify cybercriminals

Use strong and unique passwords

Encourage learners to choose strong passwords to help secure their devices. Remind them that they should not use the same password with multiple accounts. This way, if one account is attacked, the attacker will not be able to access any other accounts.

Why do you need strong passwords?

Discuss the use of personal identification numbers (PINs), passwords, or passphrases that learners use every day. For example, using an ATM or debit card in a shop, or logging in to an email account. Tracking all the number, letter, and word combinations may be difficult, but remind learners of why these protections are so important. Explain that hackers and cybercriminals are a real threat to their information.

Often, an attack is not specifically about a person's account, but about using the access to information to launch a larger attack. Explain that if someone has access to a person's password, they can use this access to pretend to be the victim.



Figure 5.1.3 – Strong passwords include a mix of letters, numbers, characters and CAPS



Figure 5.1.2 – strong, unique passwords are an important step in protecting your devices

One of the best ways to protect information or physical property is to ensure that only authorized people have access to it. Checking that those requesting access are the people they claim to be is the next step. This process is more important and more difficult in the cyberworld.

Passwords are the most common means of authentication, but only work if they are complex and private. Many systems and services have been successfully breached because of non-secure and inadequate passwords. Once a system is in danger, it is open to abuse by other unwanted sources.

Avoid common mistakes

Most people use passwords that are based on personal information and are easy to remember. However, that also makes it easier for an attacker to crack them. Ask learners to consider one of their four-digit PINs.

Ask the learners:

- Is it a combination of the month, day, or year of your birthday?
- Does it contain your address or phone number?

- Think about how easy it is to find someone's birthday or similar information.
- What about your email password – is it a word that can be found in the dictionary?

If so, it may be vulnerable to so-called 'dictionary attacks', which attempt to guess passwords based on common words or phrases.

Although intentionally misspelling a word ("daytt" instead of "date") may offer some protection against dictionary attacks, an even better method is to rely on a series of words and use memory techniques to help remember how to decode it. For example, instead of the password "hoops," use "ILTpbB" for "I like to play basketball." Using both lowercase and capital letters adds another layer of secrecy. Changing the example to "lI!2pBb." creates a password that is very different from any dictionary word.

Length and complexity

Explain to learners that they should consider using a password or passphrase longer than the minimum allowed characters, but that they may not want it to be too long if they must continually type in this password.

An example of a long password based on a phrase is:
 "Pattern2baseball#4mYmiemale!". This is a strong password because it has 28 characters and includes upper and lowercase letters, numbers, and special characters.

Encourage learners to try different variations of a passphrase – for example, some applications limit the length of passwords, and some do not accept spaces or certain special characters. Emphasize that learners should not include common phrases, famous quotations, and song lyrics.

Dos and don'ts

Remind learners that once they have come up with a strong password, it can be tempting to reuse it. However, this is a terrible mistake. Reusing a password – even a strong one – endangers a user's accounts just as much as using a weak password. If attackers guess the password, they could access the user's other accounts that use that same password.

Password

.....

show password

Password must contain numbers
 Password must contain uppercase letters
 Password must have at least one special characters
 Length must be greater than 8 characters
 Password should not contain strings
 Password must not contain repetitions

Figure 5.1.4 – Some apps provide guidelines on how to create a strong password

Share these techniques with learners to assist them with developing unique passwords for each of their accounts:

- | | |
|---|--|
|  | Use different passwords on different systems and accounts. |
|  | Use a password or passphrase longer than the minimum allowed password. |
|  | Develop ways to remember complex passwords. |
|  | Consider using a password manager program to keep track of your passwords. (See more information below.) |
|  | Do not use passwords that are based on personal information that can be easily accessed or guessed. |
|  | Do not use words that can be found in any dictionary of any language. |

Protect your passwords

After choosing a password that is easy to remember but difficult for others to guess, learners should not write it down and leave it somewhere where others can find it. Remind learners that writing down a password and leaving it in their desk, next to their computer, or, worse, taped to their computer, makes it easily accessible for someone with physical access to your workspace. They should also never tell anyone what their passwords are and encourage them to be alert and to watch for attackers trying to trick them through phone calls or email messages requesting that they reveal their passwords. Tell learners that if they must write it down, they must ensure they keep it in a safe, and preferably secret, place.



Figure 5.1.5 – Be careful where you store your login and password details

Programmes called password managers offer the option of creating randomly generated passwords for a user's accounts. The user then accesses those strong passwords with a master password. Remind learners that, should they use a password manager, they must remember to use a strong master password.

Explain to learners that password problems can happen from the web browsers' ability to save passwords and the online sessions that have been saved to memory. Depending on their web browsers' settings, anyone with access to the computer may be able to discover their passwords and gain access to their information. They should, therefore, always remember to log out when they are using a public computer (at the library, an internet cafe, or even a shared computer at the school). Emphasize that they should avoid using public computers and public Wi-Fi to access sensitive accounts, such as banking and email.

There is no guarantee that these techniques will prevent an attacker from learning their password, but they will make it more difficult.

Take note:

Remind learners of these security basics



- Keep your operating system, browser, and other software up to date.
- Use and maintain antivirus software and a firewall.
- Regularly scan your computer for spyware. (Some antivirus programs incorporate spyware detection.)
- Use caution with email attachments and untrusted links.

Activity 5.1.1: Set up a password for a site

1. Help learners to set up a password for an online site. If they do not have a Facebook account, assist them with setting one up now. If they already have a Facebook account, choose a suitable site (such as Skype, or a newsletter that requires a password) for them to join and set up a password. Note that, in some cases, it is necessary to verify the email address, so learners should ideally have access to their emails during this process.
2. Remind learners of these guidelines:
 - a) Do not choose an obvious name or number that is connected to you.
 - b) Do not choose a word that is in the dictionary.

- c) Include upper- and lower-case letters and at least one number and special character.
 - d) Either write down your password in a safe place or make sure that you remember it.
3. Once they have set up their password, they log out of the site and then log back in using the new password.

Protecting devices

The importance of computer security

Computers play an important role in our lives. We also view and upload (add) personally identifiable information on them. Therefore, it is vital to implement and maintain computer security. Strong computer security ensures safe processing and storage of our information.

Improving computer security

Share the following steps with learners for how to make a computer more secure. While no individual step will remove all risk, when used together, these defence in-depth practices will strengthen a computer's security and help minimize threats.

Secure your home network

Remind learners that, when they connect a computer to the internet, it is also connected to millions of other computers – a connection that could allow attackers access to your computer.

Although cable modems, digital subscriber lines (DSLs), and internet service providers (ISPs) have security monitoring, it's crucial



Figure 5.1.6 – We leave data as we use digital devices, this is called our digital footprint



Figure 5.1.7 – Computers are connected via the internet

for users to secure their router, which is the first device that receives information from the internet.

Encourage learners to ensure that they secure their router before connecting it to the internet, as this will strengthen the computer's security.

Home network security

Home network security refers to the protection of a network that connects devices – such as routers, computers, smartphones, home appliances, Wi-Fi-enabled baby monitors, cameras – to each other and to the internet within a home.

Many home users share two common false impressions about the security of their networks:

- Their home network is too small to be at risk of a cyberattack.
- Their devices are “secure enough” right out of the box.

Most attacks are not personal in nature and can occur on any type of network – big or small, home or business. If a network connects to the internet, it is inherently more vulnerable and open to outside threats.

By following simple but effective techniques, learners can meaningfully reduce the attack surface of their home network and make it more difficult for a **malicious** cybercriminal to launch a successful attack.



Figure 5.1.8 – Our devices are open to cyberattacks if they are not properly protected

Threats can be from viruses or from a specific person hacking into a system. A reliable antivirus software application is an important protective measure against known malicious threats. It can automatically detect, quarantine, and remove malware, such as viruses, worms, and ransomware.

Regular software updates

Explain that regular software updates are one of the most effective steps learners can take to improve the overall cybersecurity position of their home networks and systems. Besides adding new features and functions, software updates often include critical patches and security fixes for newly discovered threats and weaknesses.

Remind learners that it is important to keep software updated, including their browser.

Most modern software applications (apps) will automatically check for newly released updates. If automated updates are not available, learners should consider purchasing a software program that identifies and centrally manages all installed software updates.



Figure 5.1.9 – Antivirus software protects our computers from cyberattacks

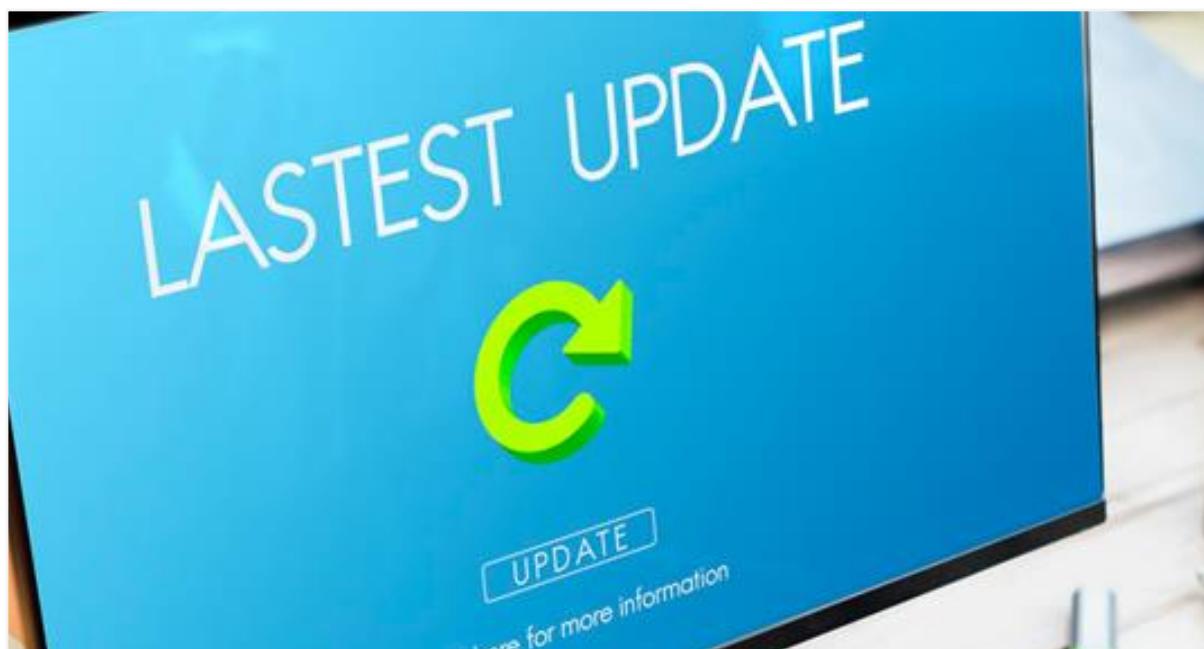


Figure 5.1.10 – Make sure that all antivirus software is updated regularly

What are patches?

Patches are software and operating system (OS) updates that address security weaknesses within a program or product. Software suppliers may choose to release updates to fix performance faults, as well as to provide enhanced security features.

Activity 5.1.2: Understand that not all online information is reliable

1. As a class, discuss how information gets onto the internet. Is there a process where information is checked, or can anyone create a page and post information? Do the learners think some people might mistakenly post incorrect information? What about those who post fake information on purpose?
2. Direct the learners to this website: <https://www.science.org/>
3. Ask them to answer these questions:
 - a) Do you think the information on this site is likely to be correct?
 - b) Why or why not?
4. Direct them to this website:
https://www.tfes.org/?fbclid=IwAR2TkQRifvPQTXM-iqeJByEzN2p_1LAyVveejEt3K7ytX--fKAN63gERdE
5. Ask them to answer these questions:
 - a) Do you think the information on this site is likely to be correct?
 - b) Why or why not?
6. Learners should now consider what they have learned and what kinds of sites have more credible information.

Remind learners to always think carefully about the source of information on the internet. Some websites post fake news and use logos of real news sites that they change slightly. Show them https://en.wikipedia.org/wiki/List_of_fake_news_websites. They can scroll quickly through the list of sites to see that there are many sites that do

Knowledge and skill checklist



I can take basic steps to protect my devices (e.g., using antivirus and passwords).

I understand that not all online information is reliable.

2

Protecting personal data and privacy



Duration

7.5 hours



Objectives

- Aware that credentials (username and password) can be stolen.
- Know not to reveal private information online.
- Understand the basics of personal digital security.
- Understand information that should and shouldn't be shared online.
- Take basic steps to protect one's data and privacy.
- Understand the need to protect the privacy of others.
- Understand the basics of what to do if something happens to one's private information.
- Understand where to get help and who from if something happens to one's private information.



Content

- Protecting yourself online
- Guidelines for sharing personal information



PowerPoint slides

Use [this link](#) to access the PowerPoint slides deck for this unit.



Lesson Plan Guide

- | | |
|---|---|
| 1 | Protecting yourself online (165 minutes) |
| 2 | Guidelines for sharing personal information (180 minutes) |
| 3 | Consolidation (15 minutes) |
| 4 | Knowledge and Skills Checklist |

Additional online resources

- Protect yourself online: <https://staysafeonline.org/online-safety-privacy-basics/5-easy-online-safety-tips/>
- Sharing personal information: <https://blog.gwi.com/trends/how-to-make-personal-information-sharing-work/>
- Reduce email threats: <https://www.sisainfosec.com/blogs/ways-to-reduce-rising-email-based-threats-and-uphold-better-data-security/>
- Indicators of phishing attempts:
<https://inspiredelearning.com/blog/common-indicators-of-a-phishing-attempt/>
- Privacy policies: <https://www.privacypolicies.com/blog/what-is-privacy-policy/>
- Data protection laws:
<https://www.dataguidance.com/notes/uganda-data-protection-overview>



Teaching notes

Protecting yourself online

How can you protect yourself?

Limit sharing personal information

Lead a discussion with learners about the importance of not **posting** information that would make them vulnerable, such as their address or information about their schedule or routine. Warn them to keep an eye on what their **connections** post; they should not tolerate a connection sharing more information than they would be comfortable with strangers knowing. Likewise, advise learners to be careful when posting information, including photos, about your connections.

The internet is a public resource

Emphasize that learners should only post information they are comfortable with anyone seeing. This includes information and photos in their profile and in blogs and other forums. Remind them that, once they have posted information online, they cannot retract it. Even if they remove the information from a site, saved or cached versions may still exist on other people's machines.

Be wary of strangers

The internet makes it easy for people to fake their identities and motives. Encourage learners to consider limiting the people who are allowed to contact them on these sites. If they interact with people they don't know, they should be cautious about the amount of information they reveal. Warn learners to exercise extreme caution when agreeing to meet a stranger in person.

Be skeptical

Warn learners to never believe everything they read online. People may post false or misleading information about topics, including their own identities. This is not necessarily done with malicious intent; it could be unintentional, an exaggeration, or a joke.

Encourage learners to take the proper precautions and to try to confirm the truthfulness of any information before acting on it.

Evaluate settings

Encourage learners to take advantage of a site's privacy settings. Explain that the default settings for some sites may allow anyone to see their profile, but they can customize their settings to restrict access to only certain people. There is still a risk that private information could be exposed despite these restrictions, so encourage learners not to post anything that they wouldn't want the public to see.

Sites may change their options from time to time, so learners should be checking their security and privacy settings regularly to make sure that they are still comfortable.



Figure 5.2.1 – Check your privacy settings and set them to a higher security level

Be wary of third-party applications

Explain to learners that, while third-party applications may provide entertainment or functionality, they should be careful when deciding which applications to enable. Encourage learners to avoid applications that seem suspicious and to modify their settings to limit the amount of information the applications can access.

Check privacy policies

Some sites may share information, such as email addresses or user preferences, with other companies. This may lead to an increase in spam. Also, it is important for users to try to locate the policy for handling referrals to make sure that they do not unintentionally sign up their friends for spam. Explain that some sites will continue to send email messages to anyone that has been referred to them until the person who was referred joins – this may not be because they wanted to join in the first place. Explain that it is discourteous to sign up a person for a mailing list or to refer them without their consent or approval.



Figure 5.2.2 –Remind learners that what they post is available to all unless they set privacy settings

The threats that social networking sites present

Although many of these sites have age restrictions, children may misrepresent their ages so that they can join. Emphasize the importance of being aware of internet safety. Learners must be aware that not everyone is the age and the person they are pretending to be. Explain that learners should be careful in their online habits, to become safe and responsible internet users.



Figure 5.2.3 – There are many different levels of privacy setting for different applications and sites

Activity 5.2.1: Sharing (or not sharing) personal information

Read these scenarios to the class, and allow the learners to briefly discuss their responses:

1. A friend offers to keep your passwords safe for you. Do you hand over your passwords to the person, even if they are your friend?
2. An email arrives saying that a software update is due, and you need to update your details and password by clicking on a link. Do you click on this link? Why or why not?
3. You get a friend request from someone on Facebook that you do not know, but they seem to know a friend of yours. You accept the friend request, but then they start asking for personal information, like your address. What do you do?

Activity 5.2.2: List examples of personal information

1. Discuss what information the learners would be comfortable sharing online (you can ask them to imagine a group of strangers with ill intentions reading this information, rather than their friends). Also discuss what information they should not share online.
2. Learners write or type the information they should not share as a list. (Remind them that they do not need to write their actual information. They should just write 'address', 'telephone number', etc.)

Guidelines for sharing personal information

View the internet as a novel, not a diary

It is important for learners to understand just how public the internet is. Encourage them to ensure that they are comfortable with anyone seeing the information they put on blogs, social networking sites, and personal websites. Explain that they should write all their content with the expectation that it is available to the public and that people they have never met will find their page. Although some sites use passwords or other security restrictions to protect the information, these methods are not used for most websites. If learners want the information to be private or restricted to a small, select group of people, the internet is not the best place to share it.

Share a limited amount of personal information

Explain that learners should not post information that could make them vulnerable, such as their address, phone number, email, or information about their schedule or routine. Explain that even sharing their email address may increase the amount of spam they receive (see Reducing Spam for more information). Learners may think that they are sharing harmless details about their lives, but even providing details about hobbies, their job, their family and friends, or their past may give attackers enough information to perform a successful social engineering attack (see Avoiding Social Engineering and Phishing Attacks and Staying Safe on Social Networking Sites for more information).

Realize that you cannot take it back

By now, learners should be understanding that everything they publish online is available to other people and to search engines. Explain that they can change or remove information after something has been published, but it is possible that someone has already seen the original version. Even if they try to remove the page(s) or posts from the internet, someone may have saved a copy of the page or used excerpts in another source. Some search engines 'cache' copies of webpages; these cached copies may be available after a webpage has been deleted or altered. Some web browsers may also maintain a cache of the webpages a user has visited, so the original version may be stored in a temporary file on the user's computer. Think about these possible results before publishing information.

Emphasize to learners again: once something is out there, they cannot guarantee that it can be completely removed.

Encourage learners to let common sense guide their decisions about what to post online as a general practice. Tell them that, before they publish something to the internet, they should determine what value it provides and consider the implications of having the information available to the public. Remind them that identity theft is an increasing problem, and the more information an attacker can gather about a person, the easier it is to pretend to be that person.

How anonymous are you?

Explain to learners that they may think that they are anonymous as they browse websites, but pieces of information about them are always left behind. Explain that they can reduce the amount of information revealed about them by visiting legitimate sites, checking privacy policies, and providing as little personal information online as possible.

What information is collected?

When a person visits a website, a certain amount of information is automatically sent to the site. This information may include the following:

- **IP address**

Each computer on the internet is assigned a specific, unique Internet Protocol (IP) address. Explain that a computer may have a static IP address or a dynamic IP address. If a person has a static IP address, it never changes. However, some ISPs own a block of addresses and assign an open one each time a person connects to the internet – this is a dynamic IP address. Show learners how they can check their computer's IP address any time by visiting www.showmyip.com.

- **Domain name**

Explain that the internet is divided into domains, and every user's account is associated with one of those domains. Show learners how they can identify the domain by looking at the end of the URL. Show them these examples: .edu indicates an educational institution, .gov indicates a government agency, .org refers to organization, and .com is for commercial use. Many countries also have specific domain names (Uganda is .co.ug). The list of active domain names is available from the Internet Assigned Numbers Authority (IANA).

- **Software details**

It may be possible for an organization to determine which browser, including the version, a user used to access its site. The organization may also be able to determine what operating system the visitor's computer is running.

- **Page visits**

Explain to learners that the information about which pages they visited, how long they stayed on a given page, and whether they came to the site from a search engine is often available to the organization operating the website.

If a website uses **cookies**, the organization may be able to collect even more information, such as the visitor's browsing patterns, which include other sites visited. Warn learners that, if the site they are visiting is malicious, files on their computer, as well as passwords stored in the temporary memory, may be at risk.

Activity 5.2.3: Knowing what and when to share

1. Read this scenario to the class:
2. You receive an email from someone who says they are a friend of your aunt, and they lost contact. They ask you to please send her details as they would love to reconnect with her.
3. Learners discuss their responses:
 - a) Do you send your aunt's personal details to the person?
 - b) Do you ask your aunt later in case she does know the person and it is a legitimate request?

Remind learners that some requests and contacts may look very real, and they may even have information about you or your aunt that makes it seem believable. This may indeed be an old friend of your aunts, but it is sadly more likely in the online environment of today that they are not.

Activity 5.2.4: Protect your privacy

1. Allow learners to research online what the basic steps for protecting privacy online.
2. Learners write or type these as a short, bulleted list.

Activity 5.2.5: Say what to do when something goes wrong

1. Read this scenario to the learners:
2. You were busy researching something online when a survey popped up.

You thought the survey was part of the legitimate site that you were on and filled in some details. The survey asked for personal details, including a password of yours. You were distracted and filled this information in and sent the survey off. You then realized what you had done, and that you had compromised your password.
3. Learners discuss these questions in groups:
 - a) What can you immediately do?
 - b) Who would you go to for help or advice?

Knowledge and skill checklist



I am aware that my credentials (username and password) can be stolen.

I know I should not reveal private information online.

I understand the basics of personal digital security.

I understand what information I should and shouldn't share online.

I can take basic steps to protect my data and privacy.

I understand that I need to protect the privacy of others.

I understand the basics of what to do if something happens to my private information.

I understand where to get help and who from if something happens to my private information.

3

Protecting health, well-being and building digital resilience



| | | | | | | | | | | |
|---|---|--|---|---|---|-----------------------------|---|----------------------------|---|--------------------------------|
| | Duration | 4 hours | | | | | | | | |
| | Objectives | <ul style="list-style-type: none">• Know that using digital technology too extensively can affect one's health.• Understand that there are risks with being online (e.g., cyberbullying).• Take basic steps to protect oneself from these risks.• Take basic steps to not put others at risk.• Understand the basics of what to do if something happens online (e.g., cyberbullying).• Understand where to get help and who from if something happens online. | | | | | | | | |
| | Content | <ul style="list-style-type: none">• Negative effects of technology: what to know• Cyberbullying | | | | | | | | |
| | PowerPoint slides | Use this link to access the PowerPoint slides deck for this unit. | | | | | | | | |
| | Lesson Plan Guide | <table><tr><td>1</td><td>Negative effects of technology: what to know (105 minutes)</td></tr><tr><td>2</td><td>Cyberbullying (120 minutes)</td></tr><tr><td>3</td><td>Consolidation (15 minutes)</td></tr><tr><td>4</td><td>Knowledge and Skills Checklist</td></tr></table> | 1 | Negative effects of technology: what to know (105 minutes) | 2 | Cyberbullying (120 minutes) | 3 | Consolidation (15 minutes) | 4 | Knowledge and Skills Checklist |
| 1 | Negative effects of technology: what to know (105 minutes) | | | | | | | | | |
| 2 | Cyberbullying (120 minutes) | | | | | | | | | |
| 3 | Consolidation (15 minutes) | | | | | | | | | |
| 4 | Knowledge and Skills Checklist | | | | | | | | | |



Additional online resources

- Negative effects of technology:
<https://www.kaspersky.com/resource-center/preemptive-safety/impacts-of-technology-on-health>
- Cyberbullying: <https://www.verywellfamily.com/what-are-the-effects-of-cyberbullying-460558>

Teaching notes

Negative effects of technology: what to know

People are more connected than ever, thanks in large part to rapid advancements in technology.

While some forms of technology may have made positive changes in the world, there is also evidence for the negative effects of technology and its overuse.

Social media and mobile devices may lead to psychological and physical issues, such as eyestrain and difficulty focusing on important tasks. They may also contribute to more serious health conditions, such as depression.



Figure 5.3.1 – Connected to the world but disconnected from each other

Physical health effects

Technology use may also increase the risk of physical issues.

Eyestrain

Technologies, such as handheld tablets, smartphones, and computers, can hold a person's attention for long periods. This may lead to eyestrain.



Figure 5.3.2– Looking at screens for many hours can cause eyestrain

Symptoms of digital eyestrain can include blurred vision and dry eyes. Eyestrain may also lead to pains in other areas of the body, such as the head, neck, or shoulders. Several technological factors may lead to eyestrain, such as:

- screen time
- screen glare
- screen brightness
- viewing too close or too far away
- poor sitting posture
- underlying vision issues.

Taking regular breaks away from the screen may reduce the likelihood of eyestrain. Anyone regularly experiencing these symptoms should see an optometrist.

The 20-20-20 rule for digital viewing

When using any form of digital screen for longer periods of time, it is recommended to use the 20-20-20 rule. Explain to learners how to use this rule: after every 20 minutes of screen

time, take a 20-second break to look at something at least 20 metres away. Doing this may help reduce the strain on the eyes from staring at a screen for a continuous period.

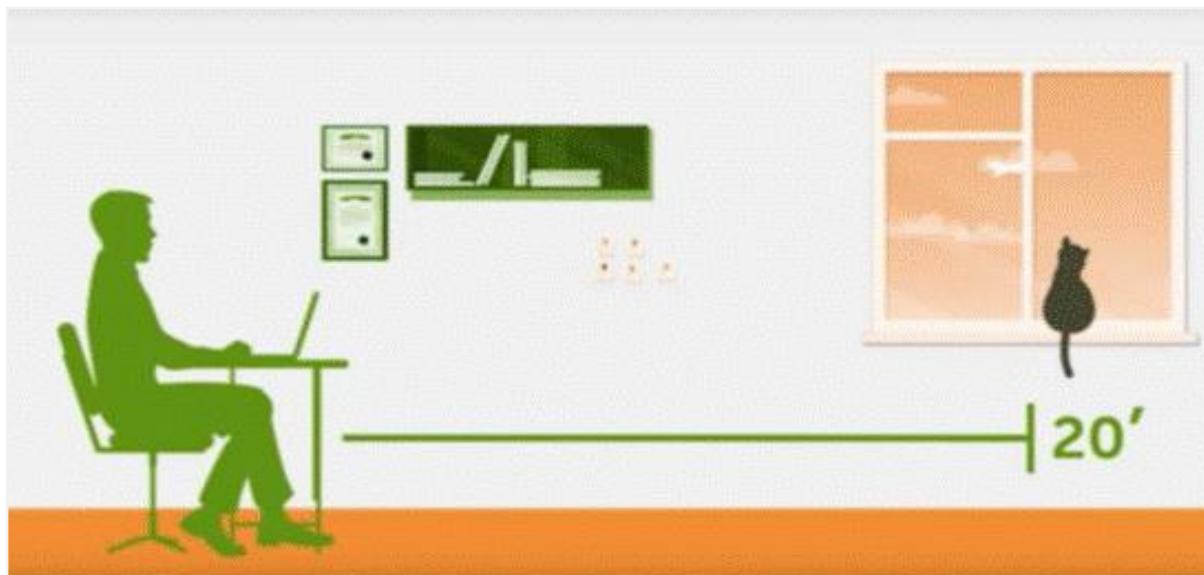


Figure 5.3.3 – The 20-20-20 rule

Activity 5.3.1: Protect from eye strain

1. Provide learners with a text document that has two paragraphs: one in a very small font and one in a very long font. Discuss the difference between reading these two texts.
2. Learners select the text and change the font back to the smallest size available. Ask them to notice how they feel reading the text, and whether they have a feeling of eye strain or forcing the eye to read when reading a text with a very small size font.
3. Select the text again and change the font to the smallest size available. Notice how you feel reading the text, and whether you have a feeling of eye strain or forcing the eye to read when reading a text with a very small size font.
4. To fully observe those two differences, allow learners to do this exercise several times.

Now, ask them to imagine spending five hours (or more) a day in front of a computer. Explain that whether they have work to do, whether they are watching a movie or looking at photos, at all times the eyes will try to adapt as much as possible, even if that information is harder to see. This way of forcing the eye can lead to vision problems over time.

For this reason, there are different ways to maintain eye health. It is important to regularly rest the eyes and focus into the distance, or to close the eyes for a short time.

5. An extension in Google Chrome can be added called 'eyeCare – Protect your vision'.
 - a) Encourage learners to search for it using keywords such as "Eye Care Chrome". It is also available at this link:
<https://chrome.google.com/webstore/detail/eyecare-protect-your-visi/eeningnfkaonkonalpcicgemnijhn>
 - b) Next to the 'eyeCare – Protect your vision' extension, click the "Add to Chrome" button
 - c) In the newly opened window, click the Add extension button
 - d) This extension is a reminder for the 20-20-20 rule (every 20 minutes, take your eyes off your computer and look at something 20 feet away for at least 20 seconds). In this way, the eye is set to look at a different distance from the monitor (20 feet away), thus contributing to eye health.

Poor posture

The way many people use mobile devices and computers may also cause incorrect posture. Over time, this may lead to musculoskeletal issues. Often computer users have a "down and forward" position, meaning the person is hunched forward and looking down at the screen.



Figure 5.3.4 – Correct posture while working is vital for health

This can put an unnecessary amount of pressure on the neck and spine and can cause neck and shoulder pain or stiffness.

Correcting posture problems while using technology can lead to an overall improvement in posture and strength in the core, neck and back. Show learners how to sit correctly in front of a computer screen. Show them how it is also very important to face the computer/device directly – i.e., they should not sit at an angle or diagonal to the screen. A slight shift off-centre will not be felt initially, but can cause ongoing problems and pain, especially in the upper back.

Remind learners of the importance of regular breaks and movement to change positions. If a person finds themselves sitting in the same position for hours at a time, such as sitting at a desk while working, regularly standing, or stretching, helps reduce strain on the body. Also, taking short breaks, such as walking for a few minutes every hour, may also help keep the muscles loose and avoid tension and incorrect posture.

Sleep problems

Using technology too close to bedtime may cause issues with sleep. This effect has to do with the fact that blue light, such as the light from cell phones, tablets, and computers, stimulates the brain. This could make it harder to fall asleep or lead to a person feeling less alert the next day. To avoid the impact of blue light on the brain, people can stop using electronic devices that emit blue light in the hour or two before bedtime. Gentle activities to wind down with instead, such as reading a book, doing gentle stretches, or taking a bath, are alternatives.



Figure 5.3.5 – Good sleep is important

Reduced physical activity

Using devices for long time periods leads to a less active lifestyle, which is known to have negative health effects, such as contributing to:

- obesity
- cardiovascular disease
- type 2 diabetes
- premature death.

Finding ways to take breaks from inactive technologies may help promote a more active lifestyle.

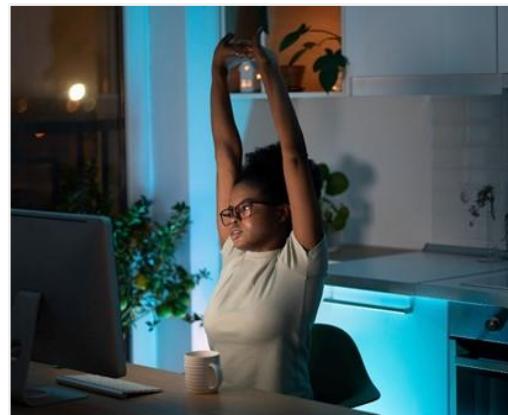


Figure 5.3.6 – Stretch regularly at your computer, and recheck your posture

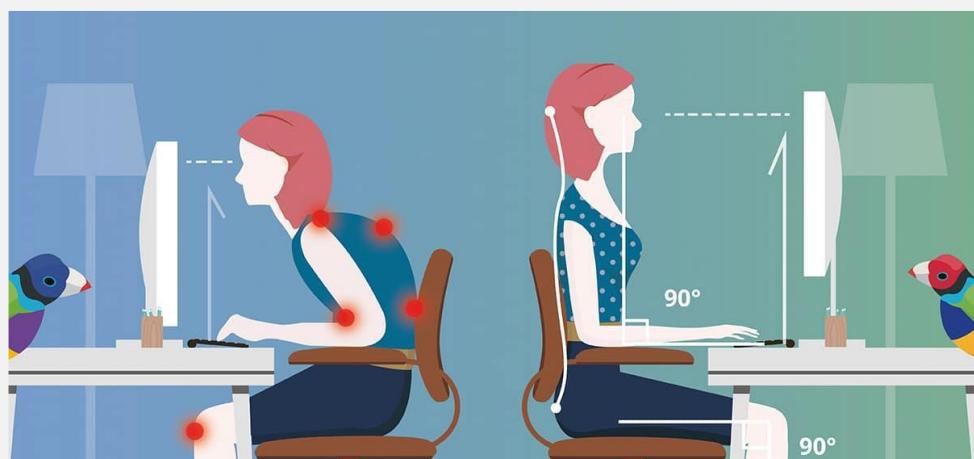
It is important to stand up and stretch or walk a little at regular intervals. There are also various stretches and leg lifts that can be done while sitting at a desk.

Research shows that active technologies, such as app notifications, emails, and wearable technologies that promote exercise may reduce short-term sedentary behaviour. This could help people set healthy patterns and become more physically active.

Activity 5.3.2: Sit in the correct position

Posture:

1. Bring learners awareness to how they are sitting – is it more like the image on the left or the right below?



2. If they are hunched forward like the figure on the left, encourage them to straighten their spine and roll their shoulders down and back.
3. Remind learners to regularly ‘check in’ with their body position in front of the computer.

Cyberbullying

Cyberbullying is using technology to harass or bully someone else. Bullies used to be restricted to methods such as physical intimidation, but computers, cell phones, tablets, and other mobile devices offer them opportunities, such as email, instant messaging, web pages, and digital photos.

Forms of cyberbullying can range in severity from cruel or embarrassing rumours to threats, harassment, or stalking. It can affect any age group; however, teenagers and young adults are common victims, and cyberbullying is a growing problem in schools.

Why has cyberbullying become such a problem?

The relative anonymity of the internet works for bullies because it increases the intimidation and makes tracing the activity more difficult. Some bullies find it easier to be more vicious because there is no personal contact. The internet and email can also increase the visibility of the activity. Information or pictures posted online or forwarded in mass emails can reach a larger audience faster than the usual methods, causing more damage to the victims. A large amount of personal information is available online, so bullies may be able to randomly choose their victims. Additionally, there may be potential for an escalation of the behaviour.

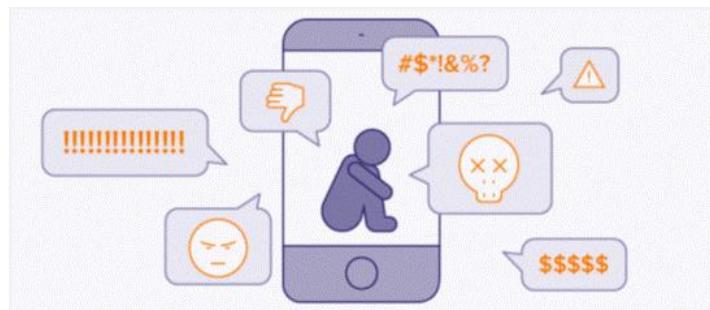


Figure 5.3.7 – Cyberbullying can take many forms

How can you protect yourself?

Share with learners these tips for protecting themselves while maintaining a positive online presence:

- Learn good online habits. Learn the risks of technology and how to be responsible online. Reduce the risk of becoming cyberbullied by setting guidelines for and monitoring use of the internet and other electronic media (cell phones, tablets, etc.).
- Watch for warning signs in the language used online. Encourage learners to trust their instincts and to cut off contact as soon as they begin to feel uncomfortable with a situation.
- Limit availability of personal information. Limiting the number of people who have access to contact information or details about interests, habits, or employment reduces exposure to strangers. This may limit the risk of becoming a victim and may make it easier to identify a bully if that situation does arise.
- If the situation escalates to cyberbullying, learners should feel empowered to communicate this to someone who can help. It is better to talk about these situations, as often a victim of cyberbullying can feel isolated.
- Avoid escalating the situation. Responding with hostility is likely to provoke a bully and escalate the situation. Depending on the circumstances, consider ignoring the issue. Often, bullies thrive on the reaction of their victims. Other options include subtle actions. For example, you may be able to block the messages on social networking sites or stop unwanted emails by changing the email address. If you continue to get messages at the new email address, you may have a stronger case for legal action.

- Document the activity. Keep a record of any online activity (emails, web pages, instant messages, etc.), including relevant dates and times. In addition to archiving an electronic version, consider printing a copy.
- Report cyberbullying to the appropriate authorities. Many schools have instituted anti-bullying programs, so school officials may have established policies for dealing with activity that involves learners. If necessary, victims can contact their local law enforcement.

Activity 5.3.3: Identifying and responding to cyberbullying

1. Read learners this scenario:

You and a classmate of yours like the same person. They become jealous of you because your crush talks to you after class. Your classmate messages you from their tablet and pretends to be your crush. You are excited, and you reply. Your classmate sends a few other messages, and each time you reply, sharing a little more about yourself. The classmate then posts your replies on social media for all your other classmates to read and mocks you. You feel humiliated and don't want to communicate with the class.

2. Now, discuss the scenario as a class, or in groups:

- a) Think about how you would feel in such a situation.
- b) Would you recognise that you are being cyberbullied and that her behaviour is not acceptable?
- c) How would you react?
- d) Who would you approach for help?

Knowledge and skill checklist

I know that using digital technology too extensively can affect my health.



4

Protecting the environment



| | | |
|--|--------------------------|--|
| | Duration | 3 hours |
| | Objectives | <ul style="list-style-type: none">Take basic measures to save energy. |
| | Content | <ul style="list-style-type: none">Energy saving strategiesProper disposal of electronic devices |
| | PowerPoint slides | Use this link to access the PowerPoint slides deck for this unit. |
| | Lesson Plan Guide | <ol style="list-style-type: none">1 Energy saving strategies (165 minutes)2 Consolidation (15 minutes)3 Knowledge and Skills Checklist |

Additional online resources



- Energy saving strategies: <https://www.energysage.com/energy-efficiency/101/ways-to-save-energy/>
- Proper disposal of electronic devices: <https://www.wikihow.com/Dispose-of-Electronics>
- Effective methods for removing data from devices: <https://kb.mit.edu/confluence/display/istcontrib/Removing+Sensitive+Data>

Teaching notes

Energy saving strategies

Buy energy efficient products

Buying energy-efficient products is a good way to save energy from the beginning. Encourage learners to look out for logos like the Energy Star when they buy computer hardware. This logo shows that the product offers a good energy efficiency.

Some components come with extra energy saving features – make the learners aware of what these are so that they can use these features.



Figure 5.4.1 – Some brands have energy-efficient products

Turn down the brightness

Turning down the brightness of the computer monitor saves energy. This is especially helpful with laptops, netbooks and other mobile devices including cell phones, but is also useful on a desktop computer. Assure learners that it is enough to turn the brightness down to 50%, as they won't get much benefit when they turn it down further.

Use built-in power saving features

Most computer systems come with power saving features, for example, the hard drive and/or monitor can go into idle mode when not being used. Idle mode uses 20 to 50 times less energy. In Windows, the power saving settings can be found in the Control Panel or Settings application.

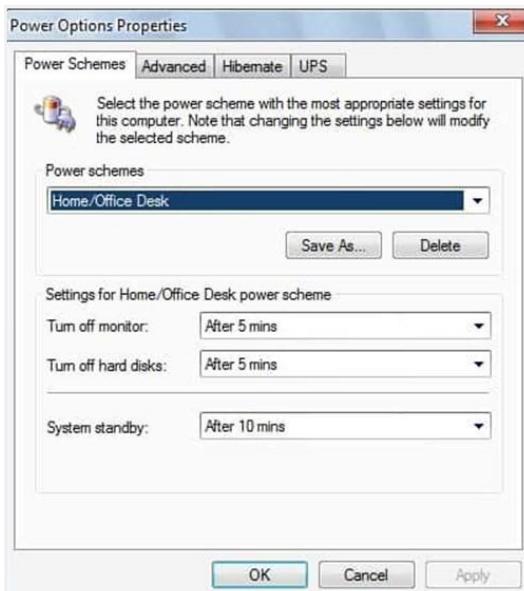


Figure 5.4.2 – You can set power saving options on your device

Disable devices that are not needed

Laptops come with all sorts of devices that a user might not need. Each of the devices – if enabled – consumes energy, especially if it is active.

A laptop user that uses a built-in network adapter and a cable to connect to the internet probably does not need Wi-Fi, the built-in modem, Bluetooth, or infrared.

Turn off the monitor instead of using a screensaver

Screensavers do not save energy: their function now is to show visuals only. Turning off the computer monitor instead of running screensavers saves lots of energy.

Turn off the computer

This might be an obvious tip but there are a few myths surrounding this. Some users think that turning off a computer will reduce its lifetime. Others believe that it will cost more power to turn the computer off and on again than to put it in hibernate mode.

It might not make sense to turn off a computer system when going on a short break, but it makes sense to turn it off overnight.

Share hardware where appropriate

Hardware like printers, scanners or routers that are connected to a computer system also use power. A way to save energy is to share these devices where possible.

Activity 5.4.1: Save energy

Discuss these questions with the class. Learners should provide solid reasons for their answers. Allow them some time to research, if necessary, using Google or any other search engine.

1. What measures can you take to use less energy on your computer? List three.
2. Try these measures on your device.
3. Why is it important to save energy? List two reasons.

Knowledge and skill checklist

I know that old electronic devices must be disposed of correctly, as they can be harmful to the environment.



Module 5 assessment guidelines

Assist learners to set up where needed. Ensure that they know what they need to do and what is expected of them.



Materials needed

- Laptop or tablet with an internet connection
- Paper and pen.

Unit 1: Protecting devices

1. Read learners this scenario: Your friend has received a new laptop as a gift.
2. Learners write down the five steps that they should take to protect their device.
3. Write out this Facebook post on the board: “Breaking news!!! Carrefour is giving away Ush15 000 to each shopper that goes to the shop wearing blue. All you need to do is click this link and fill in your personal details NOW!”
4. Learners write down whether they think this a reliable post.

Unit 2: Protecting personal data and privacy

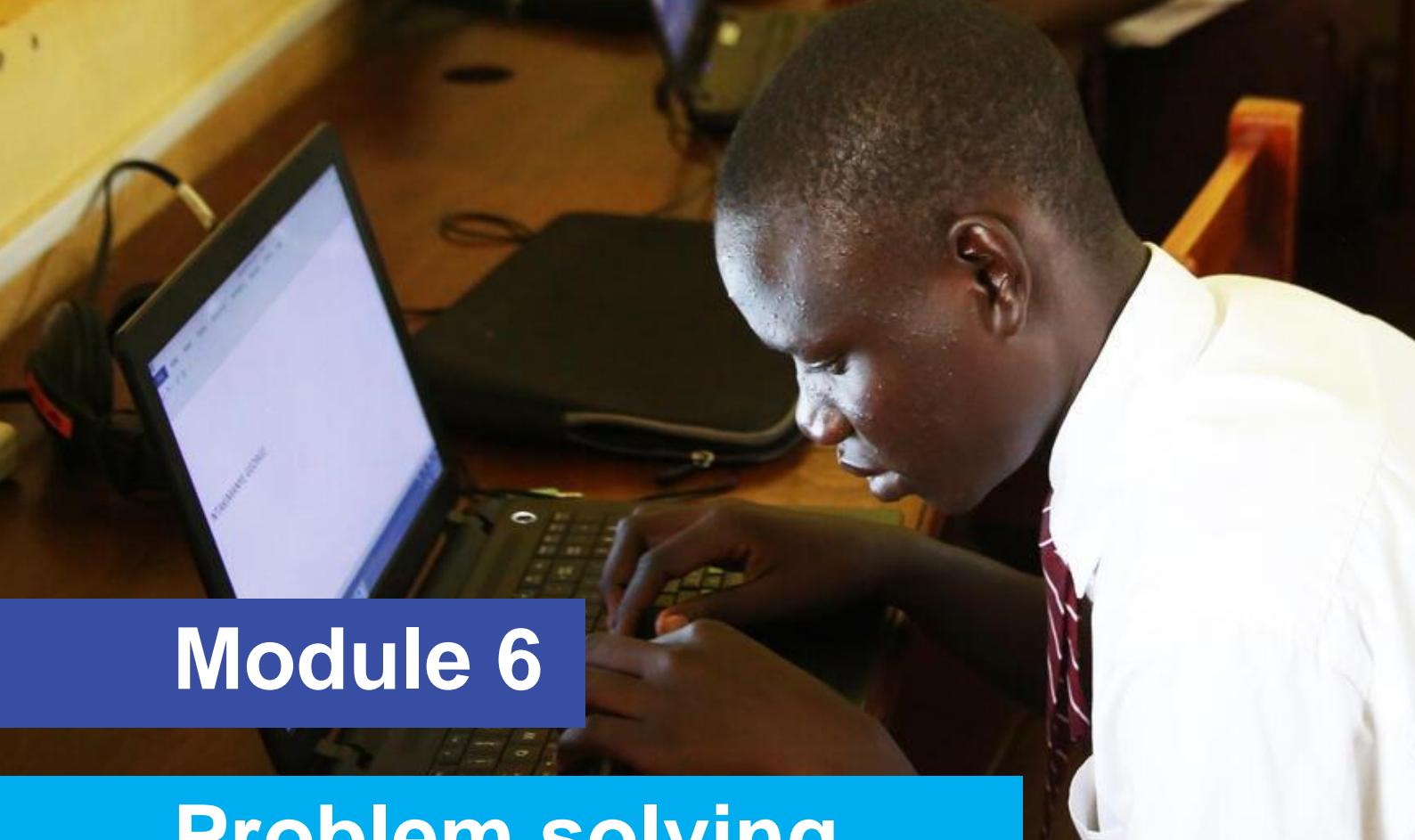
1. Read this story to the class: Robinah posts a story on Instagram. In it he posts a picture of himself and his friend, Hassan, at the Ministry of Internal Affairs. Godfrey is complaining about the terrible service he received. In the post, their photos, full names and contact details are visible. He does not have a private account and over 5 000 people view his story and share it. Someone steals Godfrey’s identity, and they use it to loan money in his name.
2. Learners write down what information Godfrey should not have shared online.
3. Learners write down the steps Godfrey needs to take now that his information has been compromised.

Unit 3: Protecting health and well-being and building digital resilience

1. Read this story to the class: Robinah works from home. She works on her laptop at the table where her family shares meals. She starts work at 07:30 and ends at 18:00. She only takes one 30-minute break during the day. Her husband works in an office. He has an office desk and a good chair to sit in. He takes regular breaks to rest his eyes and to stretch.
2. Learners write down which person they think has a healthy routine: Robinah or her husband.
3. Read this story to the class: Enock and Nancy are having an argument. Enock is accusing Nancy of stealing his book. Enock puts a nasty post about Nancy online. All Enock's friends begin to send ugly messages to Nancy. Nancy is too scared to go to class.
4. Learners write down some basic steps that Nancy can take to protect herself.

Unit 4: Protecting the environment

1. Read this message to the class (or email it to the group): "Hi, friend! I've finally gotten a new computer. But the battery dies so quickly. What can I do?"
2. Learners write down how their friend can use the built-in power saving features to save energy.



Module 6

Problem solving

This module will introduce learners to identifying and solving the most common hardware and software problems.

In this module, you will teach learners about solving problems that affect their experience using their device. As these lessons will most likely take place in a computer classroom at a school or community centre, we strongly advise that **no learner be allowed to make changes to the settings on any device** as this may compromise the integrity of the device or the cybersecurity of the computer classroom.

Please note that practical activities described in each unit might require the support of an experienced facilitator. Although the information presented in the manual is written in a way that is easy to understand, some actions may require the support of experienced people.

This module includes the following units:

| | |
|---------------|---|
| Unit 1 | Solving technical problems |
| Unit 2 | Identifying needs and technological responses |
| Unit 3 | Creatively using digital technologies |
| Unit 4 | Identifying digital competence gaps |

Learning outcomes

Learners should be able to:



- Identify technical problems when operating devices and using digital environments and solve them (from troubleshooting to solving more complex problems).
- Assess needs and to identify, evaluate, select, and use digital tools and possible technological responses and to solve them.
- Adjust and customize digital environments to personal needs (e.g., accessibility).
- Use digital tools and technologies to create knowledge and to innovate processes and products.
- Engage individually and collectively in cognitive processing to understand and resolve conceptual problems and problem situations in digital environments.
- Understand where one's own digital competence needs to be improved or updated.
- Be able to support others with their digital competence development.
- Seek opportunities for self-development and to keep up to date with the digital evolution.

Resources



- Training manual
- Computer with internet access
- Flipchart papers
- Markers



Suggested teaching methods

- Presentation by facilitator
- Group exercise / Discussion / Debate
- Working in pairs / Small groups
- Presentation by learners
- Media selection



New terminology to explain

These are terms that learners may not be familiar with. They should be explained within the context that they may be used.

booting starting

cache is a temporary storage area where website data is stored

computer chip also called a chip; an integrated circuit or small wafer of semiconductor material embedded with integrated circuitry

cookies small files used by web servers to save browsing information, allowing websites to remember your device, browser preferences, and associated online activity

network administrator IT expert(s) who manages an organization's computer network; this person (or group of people) maintains all devices, updates software, maintains network and device security, and identifies and solves problems as they arise

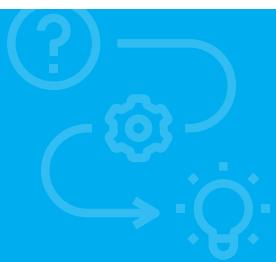
operating system a powerful and usually extensive program that controls and manages the hardware and other software on a computer; all computers and computer-like devices require operating systems, including laptops, tablets, desktop/personal computers (PCs), smartphones, and routers

reboot restart

| | |
|--------------------------------|---|
| SD card | memory card found in a smartphone |
| temporary internet file | a folder used by Microsoft [©] Windows for storing browser caches; the directory is widely used by all installed web browsers, for saving the contents of webpages or websites visited by the user; helps to speed up the loading of pages from frequently visited sites and is also used for offline browsing |
| troubleshoot | solve a problem or determine a problem to an issue; often involves a process of elimination, where a technician follows a set of steps to determine or solve a problem |

1

Solving technical problems



| | | | | | | | | | | |
|---|--|---|---|-------------------------|---|--|---|----------------------------|---|--------------------------------|
| | Duration | 7 hours | | | | | | | | |
| | Objectives | <ul style="list-style-type: none">Can find support and assistance when a technical problem occurs or when using a new device, program, or application.Know how to solve some routine problems (e.g., close program or app, restart device, re-install/update program or app, check internet connection). | | | | | | | | |
| | Content | <ul style="list-style-type: none">ComputersMost common technical problems | | | | | | | | |
| | PowerPoint slides | Use this link to access the PowerPoint slides deck for this unit. | | | | | | | | |
| | Lesson Plan Guide | <table><tr><td>1</td><td>Computers (180 minutes)</td></tr><tr><td>2</td><td>Most common technical problems (225 minutes)</td></tr><tr><td>3</td><td>Consolidation (15 minutes)</td></tr><tr><td>4</td><td>Knowledge and Skills Checklist</td></tr></table> | 1 | Computers (180 minutes) | 2 | Most common technical problems (225 minutes) | 3 | Consolidation (15 minutes) | 4 | Knowledge and Skills Checklist |
| 1 | Computers (180 minutes) | | | | | | | | | |
| 2 | Most common technical problems (225 minutes) | | | | | | | | | |
| 3 | Consolidation (15 minutes) | | | | | | | | | |
| 4 | Knowledge and Skills Checklist | | | | | | | | | |

Additional online resources

- Microsoft support – <https://support.microsoft.com/en-us>
- Samsung support – <https://www.samsung.com/us/support/mobile/tablets/>
- Solve routine computer problems – <https://ezinearticles.com/?Routine-Computer-Issues-and-Solutions&id=3446243>
- Solve routine tablet problems – <https://www.lfatabletpresses.com/articles/common-tablet-problems-solutions>
- Solving technical problems Identifying needs and technological responses – <https://slidetodoc.com/solving-technical-problems-identifying-needs-and-technological-responses/>
- Why Software Updates Are So Important – <https://www.mcafee.com/blogs/consumer/consumer-threat-reports/software-updates-important/>
- Best cache cleaner apps: <https://fossbytes.com/best-android-cleaner-apps/>



Teaching notes

Computers

In this unit, learners will be introduced to the process of identifying and solving the most common hardware and software problems.

Hardware vs software

Before you discuss the different types of computers, it is important that learners understand the two things all computers have in common: hardware and software.

- **Hardware** is any part of a computer that has a physical structure, such as the keyboard or mouse. It also includes all the computer's internal parts.
- **Software** is any set of instructions that tells the hardware what to do and how to do it. Examples of software include web browsers, games, and word processors.



Figure 6.1.1 – Hardware

Operating systems (OS)

An **operating system** is the most important software running on a computer. It manages the computer's memory and processes, as well as all the other software and the hardware. It also allows the user to communicate with the computer without knowing how to speak the computer's language. Without an operating system, a computer is useless.



Figure 6.1.2– Examples of operating systems for laptops and desktops: Windows, Linux, macOS.



Figure 6.1.3 – Examples of operating systems for tablets and smartphones: Google Android, Apple iOS.

Applications (Apps)

Learners may have heard the terms 'program', 'application' or 'app', but they may not fully understand what these terms mean. Simply put, an application is a type of software that allows you to perform specific tasks.

Applications for desktop or laptop computers are sometimes called desktop applications, while those for mobile devices are called mobile apps.

Different types of computers

Ask learners what they think of when they hear the term ‘computer’. They are likely to say that they think of a personal computer, such as a desktop or laptop. However, computers come in many shapes and sizes, and they perform many different functions in our daily lives.

Most modern machinery contains **computer chips** – these range from motor vehicles to washing machines. Electric devices are basically specialized computers, even though people do not always think of them that way. Give the learners a few common examples, such as these:



Figure 6.1.4 – A laptop

Tablet computers or tablets

These handheld computers are more portable than laptops. Instead of a keyboard and mouse, tablets use a touch-sensitive screen for typing and navigation. The iPad or Samsung Galaxy are examples of tablets. Some of the more expensive tablets include a separate keyboard.



Figure 6.1.5 – A Samsung Galaxy Tablet

Smartphones

Many smartphones can be used to complete most of the same functions as computers, including browsing the internet and playing games. For many people, a smartphone can serve as a laptop, digital music player, and digital camera in one device.



Figure 6.1.6 – A smartphone

Activity 6.1.1: Update a laptop

1. By now, learners already know a lot about laptops, tablets, and computers in general. Remind them that, by using computers, they will be constantly learning new things and increasing their knowledge. If they have questions about how to do something, it is likely that a simple online search will give them the information they need to solve the problem.
2. Learners find the settings button on their laptop. The settings button on most devices looks like this:



3. This will either be accessible from the Windows menu, by typing 'Settings' into the search bar of the computer, or by using File Explorer. Another method is to press the Windows button together with the letter 'i'. Encourage learners to use Google or another search engine to find out how to access the settings on their laptop or operating system.
4. Show learners how to look at the updates and see if anything needs to be updated.
5. Remind learners not to update anything on a computer that is not theirs without permission. If any software needs to be updated, they must notify you or the network administrator.

Activity 6.1.2: Open editing programs on a laptop

1. Learners open a new or existing document in MS Word. They change the font.
2. Learners open a photograph in a photo editing program, such as Photo Editor.
3. Ask learners to make a basic change to the photo, such as cropping or resizing it. (They should practise a skill they have already learned, rather than trying to learn a new one.)
4. Learners insert this photograph into their text document.

Most common technical problems

Reassure learners that most technical problems experienced by a laptop or computer are minor and can be solved without having to contact a technician. Explain that you will present the most common of these problems in this section, including how they can solve them.

The computer won't start

A computer that suddenly shuts off or has difficulty starting up could have a failing power supply (the cable and plug). Check that the computer is plugged into the power point properly and the switch is switched on. If that does not work, try using a different power supply. If that still does not work, test the power plug (in the wall) itself with another working device to confirm whether there is adequate power. If the computer still won't start, it may be necessary to call a technician.



Figure 6.1.7 – Power supply

The screen is blank

If the computer is on but the screen is blank, there may be an issue with the connection between the computer and the screen. First, check to see if the monitor is plugged into a power point and that the connection between the monitor and computer hard drive is secure. If the problem is on a laptop (i.e., the laptop's screen is blank), then you may need to ask a technician to help you.

Abnormally functioning operating system or software

If the operating system or other software does not work properly, try restarting the computer: switch it off, wait a few minutes, then switch it back on. Once it is back on it is also a good idea to run a virus scan. To avoid this, reliable anti-virus software should be installed on the device. (Remind learners that they are not to uninstall or install any software on a device that they do not own, especially a device in a school or community computer centre.)

Windows won't boot

If you are having troubles **booting** Microsoft© Windows, then it may need to be reinstalled using the Windows recovery disk. This can only be done by the owner of the device. If the device is in a school or community computer centre, the **network administrator** will do this.

The screen is frozen

When your computer freezes, you may have no other option than to **reboot** and risk losing any unsaved work. Freezes can be a sign of insufficient **ram**, registry conflicts, corrupt or missing files, or spyware. Sometimes, when too many things are open at once, the computer can freeze. Press and hold the power button until the computer turns off, then restart it. Once it is on, try running a computer cleanup tool that will delete temporary and unnecessary files. Encourage learners to ask for help if this happens when they are using a computer owned by the school or community centre. This is because it is important to use the tool that the computer has for this; learners should never delete files without permission. Additionally, they may not delete or run a device clean up if they do not own the device.

A program on the computer is frozen

Press the ‘Ctrl’ ‘Alt’ and ‘Del’ buttons at the same time – a pop-up will appear on the screen. From there, go to the Task Manager, and look for the program that is giving the problem.

Look at the list of programs that are open, and click on the one that is frozen (Task Manager will have a note that says, ‘This program is not responding’, so you will know which one it is). Task Manager will shut this program down and leave the others open. At this point, it would be a good idea to save work that is open in other programs and restart the computer using the Shut Down menu.

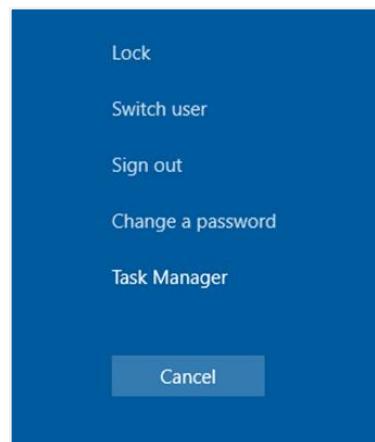


Figure 6.1.8 – Select Task Manager and shut down the problematic program

Activity 6.1.3: Visual check of computer setup

1. Ask learners to look at their devices. They should check for the following:
 - a) All cables are correctly connected
 - b) Power cables are plugged in and switched on
 - c) The device (especially laptop) has enough battery power if it is not plugged into mains power
2. Explain to learners that, they should always check that the battery of their laptops or devices is full, even if it is plugged in. Show them how to check this in the task bar at the bottom of the screen (hover the mouse over the battery icon to see the percentage charge).

Activity 6.1.4: Restarting your computer

Explain to learners that, often, simply restarting or shutting down a computer can resolve small issues (it acts as a soft reset). Demonstrate the process to learners, while they follow along:

1. Save all open documents.
2. Close all open programs.
3. Shut down the computer using the Shut Down menu.
4. Wait 30 seconds.
5. Restart the computer.

Computer is slow

If your computer is slower than normal, the problem can often be fixed simply by deleting unwanted files. External hard drives are great storage solutions and will help a computer run faster.

Encourage learners to only open files they are using – having many open files can slow down a computer. Remind them that, if they are sharing a device, they cannot delete files that they have not created.



Figure 6.1.9 – An external hard drive

Storage space

If the storage space on your smartphone or tablet is running out, too much of the storage may be filled with photos and videos. Encourage learners to pay attention to the storage capacity of a device when they first start to use it.

To free up storage space, delete the cache first. Apps like cache cleaner allows users to clean the cache for a specific app. Apps that are not needed should be deleted to save space. Cloud storage is also a good solution and can be used to save documents, photos, and other media, freeing up the space on the device.

Activity 6.1.5: Increase speed

1. Remind learners that having too many programs open at once can slow a computer down, especially if it does not have a lot of RAM. Help them to practise troubleshooting a computer that suddenly becomes slow, by opening four or five programs and leaving them open at the same time.
2. Does the computer operate more slowly? (Note: If they are working on computers with a lot of RAM, it may not. However, it is a good skill to understand.)
3. Now, ask learners to close all of them, except one. Does the computer operate better/faster?

Activity 6.1.6: Empty the recycle bin

1. Remind learners that extra and unnecessary files on the computer can slow the computer down. A good habit is to regularly empty the recycle bin.
2. Explain that when a file is deleted, it does not get immediately deleted off the device (unless it is a very large file – then it should warn you that the file will be deleted and will not go into the recycle bin). This is to help prevent users from deleting files by mistake.
3. If a file was deleted by mistake, go to the recycle bin, find the file, then right-click on the file and press ‘restore’ – the file will be copied back to where it was.
4. To empty the recycle bin, right-click on the recycle bin icon and click ‘empty recycle bin’. This will permanently delete all the files in the recycle bin off your device. Explain that this is good practice because files that are no longer needed will not take up space on the computer, potentially slowing it down.

Knowledge and skill checklist



I can find support and assistance when a technical problem occurs or when using a new device, program, or application.

I know how to solve some routine problems (e.g., close program or app, restart device, re-install/update program or app, check internet connection).

2

Identifying needs and technological responses



| | | | | | | | | |
|---|---|--|---|---|---|----------------------------|---|--------------------------------|
| | Duration | 7 hours | | | | | | |
| | Objectives | <ul style="list-style-type: none">• Know that digital tools can help me in solving problems.• Be aware that digital tools have limitations. | | | | | | |
| | Content | <ul style="list-style-type: none">• Identifying needs and technological responses | | | | | | |
| | PowerPoint slides | Use this link to access the PowerPoint slides deck for this unit. | | | | | | |
| | Lesson Plan Guide | <table><tr><td>1</td><td>Identifying needs and technological responses (405 minutes)</td></tr><tr><td>2</td><td>Consolidation (15 minutes)</td></tr><tr><td>3</td><td>Knowledge and Skills Checklist</td></tr></table> | 1 | Identifying needs and technological responses (405 minutes) | 2 | Consolidation (15 minutes) | 3 | Knowledge and Skills Checklist |
| 1 | Identifying needs and technological responses (405 minutes) | | | | | | | |
| 2 | Consolidation (15 minutes) | | | | | | | |
| 3 | Knowledge and Skills Checklist | | | | | | | |

Additional online resources



- Troubleshooting Microsoft 10: <https://support.microsoft.com/en-us/windows/windows-update-troubleshooter-19bc41ca-ad72-ae67-af3c-89ce169755dd>
- Why Is a File Extension Important? – <https://www.techwalla.com/articles/why-is-a-file-extension-important>
- Solving technical problems Identifying needs and technological responses – <https://slidetodoc.com/solving-technical-problems-identifying-needs-and-technological-responses/>
- Why Software Updates Are So Important – <https://www.mcafee.com/blogs/consumer/consumer-threat-reports/software-updates-important/>

Teaching notes

Identifying needs and technological responses

The first step in solving any computing problem is to find out which component is not working correctly. Sometimes it is due to something simple, such as the audio not working, or a faulty screen, mouse, or keyboard. Or it may be a more complex problem, such as a computer that will not start or that suddenly reboots itself.

Explain to learners that there are many different things that could cause a problem with a computer. No matter what's causing the issue, troubleshooting will always be a process of trial and error – in some cases, the user may need to use several different approaches before finding a solution; other problems may be easy to fix.

Write down your steps

Encourage learners to write down each step they take once they start troubleshooting. This way, they will be able to remember exactly what they have done and can avoid repeating the same mistakes. It can also be useful if they ask others for help because it will be much easier for the technician to know exactly what has already been tried.

Take notes about error messages

It can also be important to write down information when a computer gives an error message. Encourage learners to write

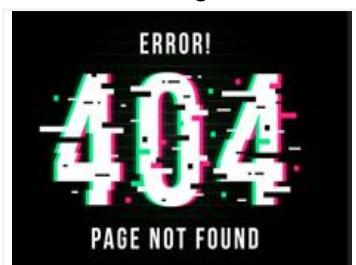


Figure 6.2.1 – A internet common error message

down as much information as possible in this circumstance. They may be able to use this information later to find out if other people are having the same error. They can also Google the error message for an explanation of that particular error message.

Always check the cables

An easy first step for anyone to follow if they are having trouble with a specific piece of computer hardware, such as a monitor or keyboard, is to check all related cables to make sure they are properly connected.

Restart the computer

When all else fails, restarting the computer is a good thing to try. This can solve a lot of basic issues.

Using the process of elimination

Recommend using a process of elimination if learners are experiencing issues with their computer. Using a process of elimination means making a list of things that could be causing the problem and then testing them one by one to eliminate them. This can take a long time, but it is usually very accurate because it narrows down the cause of the problem, and therefore the possible solutions.

Video tutorials

It is possible to find workarounds for some common issues through thousands of video tutorials on YouTube or from online sources that provide step-by-step instructions on computer troubleshooting. It is as simple as typing in the problem and seeing which sites or videos will help the most.

Video tutorials are often useful guides on how to solve a specific problem. Learners can pause the video as often as they like, or replay parts, to make sure they understand the steps taken in the video.

Video tutorials may combine charts, slides, photos, graphics, narration, screenshots, on-screen captions, music, and live video. This allows learners who prefer to learn in various ways to gain information in a method more suited to them.



*Figure 6.2.2 –
YouTube has many
useful step-by-step
videos*



Figure 6.2.3 – an example of a video tutorial

For example, if a learner wants to install a printer, they can type on a search engine “printer installation tutorial”. They will look at the options presented and click on one that looks the simplest and follow step-by-step the information about printer installation. If the site is not suitable, they can find a different site. Encourage the learners to ensure they include the name (and if possible, the model number) of their printer to get the most relevant video.



Figure 6.2.4– The printer needs to be set up correctly

Online sources

There are many websites that can provide learners with information on computer troubleshooting and tech support. Encourage learners to use online search engines to help them solve problems. All they need to do is to type some key words relating to their problem into their web browser and see which results are the most relevant. They can also type in the exact question or problem and see the results. It is also important to include the exact device (and model, if possible) for the most accurate results. For example: “Samsung IF403 printer not printing”.

If they are interested in technology issues and find a good site related to this, encourage them to bookmark it. There may even be an option to subscribe, which would mean they will receive emails with news and updates to that site.

Wireless technology

Wireless technology provides the ability to communicate between two or more devices over distances without the use of wires or cables of any sort. Some of these terms may be familiar to learners and are all examples of “wireless”: radio and television broadcasting, radar communication, cellular communication, global position systems (GPS), Wi-Fi, Bluetooth, and radio frequency identification.

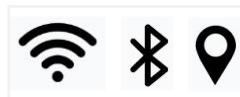


Figure 6.2.5 – Wi-Fi, GPS location, and

Activity 6.2.1: Restart your tablet

1. Show learners how to restart a tablet, which on most tablets, entails pressing the power button for about 30 seconds, or until the tablet shuts down.
2. Wait a few seconds, and then press the start button to restart.

Activity 6.2.2: Check for Android updates

Important: Settings can vary depending on the tablet. Learners should not make permanent changes to the settings of any device belonging to a school or community computer centre. If they are working on a computer or tablet that is not theirs, simply tell them the steps below. If updates are ready for software already loaded on the device, they must check with you or the network administrator to determine if they may update them.

1. Open your tablet's Settings app.
2. Go to Software update or System update, depending on the model.
3. Select Download and install, or Check for software updates.
4. Once the download is complete, follow the instructions to install.

Knowledge and skill checklist



I know that digital tools can help me solve problems.

| | |
|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> |

I am also aware that they have their limitations.

| |
|--------------------------|
| <input type="checkbox"/> |
|--------------------------|

3

Creatively using digital technologies



| | | |
|--|--------------------------|--|
| | Duration | 6 hours |
| | Objectives | <ul style="list-style-type: none">• Uses digital tools to solve technological or non-technological problems. |
| | Content | <ul style="list-style-type: none">• Digital creativity |
| | PowerPoint slides | Use this link to access the PowerPoint slides deck for this unit. |
| | Lesson Plan Guide | |
| | 1 | Digital creativity (120 minutes) |
| | 2 | Digital creativity tools (225 minutes) |
| | 3 | Consolidation (15 minutes) |
| | 4 | Knowledge and Skills Checklist |

Additional online resources



- 6 ways to stay on top of emerging technology trends –
<https://medium.com/beyond/6-ways-to-stay-on-top-of-emerging-technology-trends-ca6a7b27bc20>
- 16 Ways to Stay Up to Date With Digital Marketing Trends in 2019: Our Guide to Tips and Resources –
<https://www.imaginaire.co.uk/16-ways-to-stay-up-to-date-with-digital-marketing-trends-in-2019-our-guide-to-tips-and-resources>
- The Skills Gap Analysis – A Full Guide –
<https://www.digitalrtech.com/skills-gap-analysis>
- 8 Ways to Boost Your Creativity With Technology –
<https://www.opencolleges.edu.au/informed/features/8-ways-boost-creativity-technology>

Teaching notes

Digital creativity

Creativity is quickly becoming one of the most highly valued traits of the 21st century. A survey found that 60% of CEOs believe creativity is the most important leadership quality today.

Digital creativity is a new, dynamic, interdisciplinary and rapidly growing field.

People's understanding of digital creativity changes as new things are developed, and it has different meanings for different types of businesses, in education and in informal learning.

New hardware and software is allowing young people to engage with the world, often playfully and experimentally, in ways which they could not have done even ten years ago. Digital creativity is astonishingly fast and is more than the sum of digital + creativity.

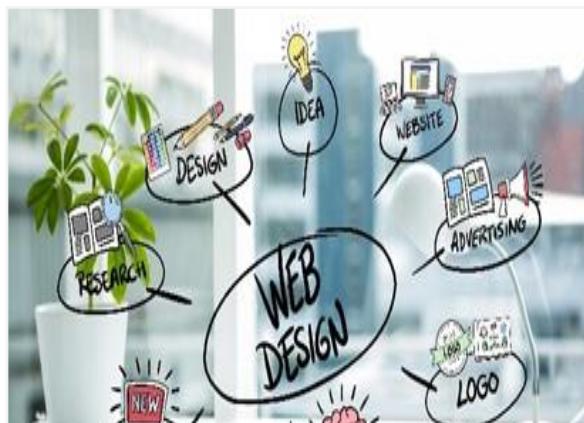


Figure 6.3.1 – digital creativity means different things

Examples of digital creativity

New hardware and software are allowing young people to engage with the world, often playfully and experimentally, in ways which they could not have done even ten years ago. Digital creativity is astonishingly fast and is more than the sum of digital + creativity.

Text processing

In computing, this term refers to automating the creation or manipulation of electronic text. The term processing refers to automated (or mechanized) processing, instead of the same changes done manually.



Figure 6.3.2 –
This email icon
is used across
most devices

Email

Email is a system of sending written messages electronically from one computer to another. Email is an abbreviation of "electronic mail".

Activity 6.3.1: Create a new document

1. Learners to open MS Word.
2. On the *File* tab, they click *New*.
3. They select Blank document to create their own document.
4. Learners write some text, creating a paragraph or short letter.
5. To format, they select the text and then select an option: Bold, Italic, Bullets, Numbering, and so on.
6. If possible, allow learners to print their documents.

Digital creativity tools

Text editing app

A text editor is a type of computer program that edits plain text. Text editors have operating systems and software packages and can be used to change files. Most text editing apps offer a range of templates from invitations, newsletters, CVs, to business documents. Users can edit the template and produce a very professional-looking document without spending hours designing and styling from scratch.

Photo editing app

Smartphones, tablets, and laptops have image editing apps that can be used to crop and touch up photos, as well as organize them into albums and slideshows. These apps do not have as many filters and features as a more professional image editor, such as Adobe's Photoshop or Corel's Paint Shop Pro, but they work well and are simple enough for amateur photo and video enthusiasts.



Figure 6.3.3 – Well-edited written pieces are easier to understand



Figure 6.3.4 – Editing a photo using professional software is more complex

Activity 6.3.2: Create a document using a template

1. In a word processing application (such as MS Word), learners select a calendar template from the templates shown.
2. Learners create a birthday calendar of some of their friends' or classmates' birthdays. They can also add in the birthdays of family members.
3. They add each birthday with the person's name into the relevant month of their calendar.
4. Then, learners make a creative change to their calendar – for example, change the colour of some text or of a part of your template.
5. They could choose to have the text or background of friends' birthdays in one colour and family members' birthdays in another colour, or they may choose to represent them differently.
6. Learners insert either some SmartArt or some images into your calendar and make it creative.

7. Remind learners that they need to include a valid heading for their calendar.
8. Once they are done, they check the print preview, making sure they are happy with how it will print.
9. If possible, allow learners to print their calendars.

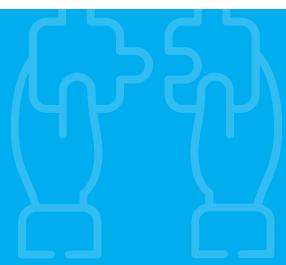
Knowledge and skill checklist



When confronted with a technological or non-technological problem, I can use the digital tools I know to solve it.

4

Identifying digital competence gaps



| | | |
|--|--------------------------|--|
| | Duration | 5 hours |
| | Objectives | <ul style="list-style-type: none">• Is aware of the need to update digital skills regularly. |
| | Content | <ul style="list-style-type: none">• The digital skills gap |
| | PowerPoint slides | Use this link to access the PowerPoint slides deck for this unit. |
| | Lesson Plan Guide | <ol style="list-style-type: none">1 The digital skills gap (285 minutes)2 Consolidation (15 minutes)3 Knowledge and Skills Checklist |

Additional online resources

- Top 10 digital trends:
<https://www.forbes.com/sites/danielnewman/2021/10/13/top-10-digital-transformation-trends-for-2022/>
- Digital Marketing Trends:
<https://digitalmarketinginstitute.com/blog/the-next-big-digital-marketing-trends>
- Digital skills: <https://www.rand.org/blog/rand-review/2022/03/the-digital-skills-gap-what-workers-need-for-the-jobs.html>
- 8 Ways to boost your creativity with technology –
<https://www.opencolleges.edu.au/informed/features/8-ways-boost-creativity-technology>



Teaching notes

The digital skills gap

Digital technologies are used in many sectors, such as farming, healthcare, transport, education, retail, automatics, energy, shipping, logistics, teaching, and the information and communications technology industry. The demand for information and communications technology specialists is growing fast. In the future, 9 out of 10 jobs will require digital skills.

In this unit, learners will find out what improvements they will have to make to acquire or improve the skills and competencies needed to perform as well as possible in their (future) roles in the workplace. Eventually, this will also have a positive impact on their daily lives.

Invest in education

There are many internet sites with brilliant courses on many different digital topics. Encourage learners to look for something in the area they want to learn more about. Advise learners to always check out the reviews before buying a course and consider the duration of the courses they are interested in (i.e., how long it will take to do). Some courses can be done in a day, whereas others will take more time. There are many free courses available on the internet, as well as many free video tutorials on a variety of subjects.

Hit subscribe

Learners can subscribe to interesting or useful articles that they come across a useful article to receive future newsletters. This is worth it when the content really stands out because, chances are, future articles will be just as helpful.

Remind learners to do this selectively, as the last thing they want is an inbox filled with hundreds of emails that they will never be able to get through. By filtering out the best content, they will know that when an email lands in their inbox, it is worth reading.



Figure 6.4.1 – Subscribing to sites with information on technology helps a person stay informed

Activity 6.4.1: Learning more about digital skills

1. Tell learners to decide on a digital skill that they want to learn more about – this could be learning how to do something in MS Word or learning more about a social media app, for example.
2. Tell them that they are going to use the digital skill gap they have chosen for the next activity.

Activity 6.4.2: Subscribe to a YouTube channel

1. Learners open a web browser and go to <https://www.youtube.com>
2. Learners sign into their account.

(Remind learners that they must be signed into a Google account to subscribe to YouTube channels. If they are not signed in, they click the **Sign in** at the top-right corner and then log in with their Google account.)

If they are already signed in and want to **switch accounts**, they click the profile photo at the top-right corner, select Switch account, and then choose another account from the list. If they do not see the account they want to use, click **Add account** to add or create another account.

3. Once signed in, learners browse for a YouTube channel that fits the skills gap they identified in Activity 6.4.1. They do this by typing in what they are looking for in the search bar.
4. They watch part of two or three videos on their chosen skills subject, then choose the one that makes the most sense to them and that they like the presentation of.
5. Explain what it means to subscribe to a channel. Basically, it means that they will be notified of any new videos uploaded to that channel. (Point out that the channel's name appears below the video's title.)
6. To subscribe to a channel, click the Subscribe button. It is a red-and-white button—if you are on the channel's home page, it will be near the top-right corner of the page below the cover image. If you have a video open, it is below the video to the right of the channel's name.
7. Show them what it looks like when they are subscribed. The text on the **Subscribe** button will turn grey and change to **Subscribed**. Clicking that button at any time will unsubscribe you from the channel.

Knowledge and skill checklist



I am aware that I need to update my digital skills regularly.

Module 6 assessment guidelines

Assist learners to set up where needed. Ensure that they know what they need to do and what is expected of them.



Materials needed

- Laptop or tablet with an internet connection
- Paper and pen.

Unit 1: Solving technical problems

1. Read this WhatsApp message to the group: "Hi friend! Please could you help me? My computer's screen is frozen. I don't know what to do."
2. Learners write down what their friend can do to fix their problem.
3. Learners write down where their friend can find help for their device.

Unit 2: Identifying needs and technological responses

1. Read this story to the group: "Aisha is very forgetful. She is often late to appointments and sometimes does not show up at all. Everyone is getting very annoyed with Aisha. She has used a diary before, but she usually forgets to look at it."
2. Learners write down how a digital tool could help Aisha.

Unit 3: Creatively using digital technologies

1. Read this story to the group: "A class wants to go on an outing to the Uganda Museum in Kampala. They find out that it is expensive. The class decide that they will need to raise funds to pay for their outing. They plan to create adverts to post online to ask people to donate money for their outing."
2. Learners use word processing software to create an advertisement for the class.
3. Assess their advertisements.

Unit 4: Identifying digital competence gaps

1. Read this story to the group: "Dembe took a computer course five years ago. She was very good at it. She has been using the same digital tools, apps, and software since then. She gets a new computer and does not know how to use it."
2. Learners write down what they think Dembe should have done to avoid this problem.

The Digital Skills Facilitator Training Guide and Learner Handout is a product of UNICEF and the Uganda Ministry of Education and Sports with generous support from the Netherlands Ministry of Foreign Affairs. The Guide and Handout is developed to enhance the acquisition of digital skills and literacy under an initiative involving UNICEF, UNHCR, ILO, and the Ministry of Education and Sports.



The Republic of Uganda