TVET LEVEL II

BASIC EDUCATION

ICT Essentials

TRAINER MANUAL

Approved by: Workforce Development Authority

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Introduction to RTQF Level II Training Modules

Background

Rwanda Polytechnic, with support of and in collaboration with USAID Huguka Dukore Akazi Kanoze, has developed RTQF TVET Level II programs that combine basic education, soft skills and vocational skills modules. Bridging the gap between Level I and Level III programmes, Level II aims to prepare learners who have a minimum education level of Primary 6 or equivalent to continue with their education or become skilled workers in the labour force.
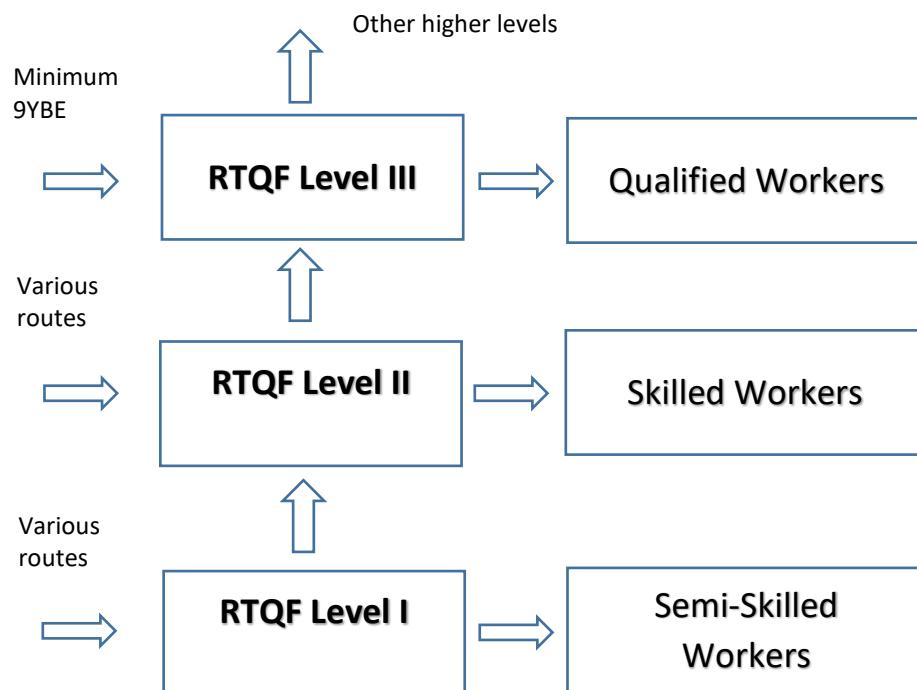
Following the Workforce Development Authority (WDA) curriculum development process that involved experts from Rwanda Polytechnic, Rwanda Education Board, Ministry of Agriculture, technical vocational institutions, Education Development Center, Akazi Kanoze Access and other technical experts, training modules were developed in basic education, soft skills (work readiness) and, initially, agriculture. Additional vocational areas will be added over time. Trainees will be trained in all Basic Education and Soft Skills modules listed below, as well as in 6 - 8 modules that make up their chosen technical vocational programme.

Module Requirements:

Basic Education	Soft Skills	Vocational Skills
• English • Kinyarwanda • Mathematics	• Basic Entrepreneurship Skills • ICT Essentials • Communication Skills	• Vocational programmes will have a set of 6 – 8 required technical modules.

• Integrated Science (Physics, Chemistry, Biology)	• Safety, Health and Sustainable Environment • Personal Development and Career Guidance	E.g. Food Crop Production and Processing includes the following modules: 1. Food Crop Production 2. Small Scale Post-Harvest Operations 3. Growing Medium 4. Food Safety and Sanitation 5. Food Preservation and Storage 6. Flour Processing

Organization of the Training Manuals

For each module there is a Trainer Manual and a Trainee Manual. These manuals, based on the curricula for each subject, are divided into Learning Units, and each Learning Unit includes 3 – 5 Learning Outcomes. The learning outcomes make up the essential skills, knowledge and attitudes to be acquired by trainees. To make the Trainee Manual more user friendly, Unit and Topic are used respectively for Learning Unit and Learning Outcome. The number of hours per training module varies, ranging between 30 and 120 hours.

Teaching & Learning Methodology of RTQF Level II 2 TVET Materials

The teaching and learning methodology used in the materials is based in experiential and adult learning. Activities are designed to engage trainees, build upon what they know and learn and provide them with opportunities to build their skills in the classroom and in the workplace. More specifically, guiding principles in the development of the manuals include:

▶ Building on participants' knowledge, skills and experiences

▶ Facilitating a learning process through active engagement of participants rather than through lecturing

▶ Providing opportunities to practice – inquiry based and hands on practice, both in the classroom and workplace

▶ Using simple and clear language

▶ Connecting to the real world: use local resources and the environment for learning

▶ Promoting critical thinking through properly debriefing activities and asking questions that get learners to think, analyze, relate issues and topics to their own lives and come up with solutions

- ▶ Applying social inclusion principles: Finding ways to include all types of youth (and trainers) – males and females; different cultural/ethnic/religious backgrounds, people with disabilities (PWD); people with different types of health status …

- ▶ Encouraging risk taking – promote questioning and being free to explore

- ▶ Promoting habits of mind that support life-long learning: curiosity and wonder, open mindedness, creativity

These principles are reflected in the layout and flow of activities in the manuals:

1. **Key Competencies:** Table found at the beginning of each Learning Outcome that describes the main knowledge, skills and attitudes to be gained by the end of the activities.

2. **Self-Assessment:** Conducted at the beginning and end of each Learning Unit to get a sense of trainees' knowledge and skills going into it and what they have gained by the end of the Learning Unit (and steps they need to take to further their understanding and skills).

3. **Getting Started Activity:** Typically, a quick activity or questions to 1) give the trainer a sense of trainees' existing knowledge and skills; 2) spark the interest of trainees in the topic; 3) introduce the objectives and key competencies of the topic.

4. **Problem Solving Activity:** A challenging activity to get trainees engaged and to learn through discovery instead of memorization of facts. A variety of teaching and learning methodologies are used, including individual and group work such as reading real life work-based scenarios and answering accompanying questions to activities such as identifying proper tools and equipment from the school workshop to conduct a certain activity. Following the sharing of responses, the trainer guides trainees through the content and processes being introduced.

5. **Guided Practice Activity:** Building on the concepts and skills gained in the Problem Solving Activity, the trainer guides trainees through practical examples.

6. **Application Activity:** Consolidates trainees' knowledge and skills through a real-life application of the topic in the classroom, community or workplace. Trainees are given more independence in applying what they have learned.

7. **Key Facts boxes:** Throughout the Trainee Manual, one will find Key Facts boxes. These contain the main information or content for a given Learning Outcome. They are there for the trainees' reference and are used throughout the different types of activities.

8. ⭐ **Points to Remember:** List of the top key learning points or "take-aways" from the topic.

9. 📋✓ **Formative Assessment:** Questions and activities to assess trainees' level of understanding of the concepts introduced.

10. 📋✓ **Summative Assessment:** Based on the integrated, real life situation approach used in other TVET levels, this is done at the end of every module for agricultural modules and, with some variations, at the end of each Learning Unit for Basic Education and Soft Skills modules.

11. 👤 **Self-Reflection:** Trainees re-take the Self-Assessment given at the beginning of the Learning Unit and identify their strengths, challenges and actions to improve their level of competence.

The Trainer and Trainee Manuals are meant to be used in conjunction with each other and are well coordinated through the headings and labelling of activities. The trainer will always be able to refer trainees to specific activities by the coordinated numbering system. For instance, a specific exercise might be labelled Topic 1.2 Task 2. The Topic is the number of the Learning Outcome and the task is the specific exercise to be done. The Key Facts are also numbered for easy reference. These nor the Self-Assessment tables are in the Trainer's Manual so the trainer should have a copy of both manuals.

The Trainer's Manual includes answers (or guidelines to the trainer as appropriate) to Formative and Summative Assessments as well as to problems given throughout the activities. Summative Assessments are not included in the Trainee's Manual. These are meant to be used as a guide for those who will be developing a context-appropriative Summative Assessment at the end of the Module or Learning Unit. Basic Education and Soft Skills modules include Summative Assessments at the end of every Learning Unit while the technical modules include it only at the end of the module.

Lastly, there is a section in the Trainer's Manual for additional information to the trainer that includes either specific information or references to information that can help them deepen their understanding of the particular content.

ESSENTIAL ICT SKILLS

Learning Units	Learning Hours	Learning Outcomes
Learning Unit 1: Utilize computer	18	**1.1** Describe the main components of a computer according to their functions.
		1.2 Manipulate computer's desktop, files and disks in accordance with operating system instructions.
		1.3 Accomplish tasks using relevant application programs.
		1.4 Apply computer security in order to prevent unauthorized access.
Learning Unit 2: Use mobile technology	8	**2.1** Use of main buttons and ports according to their functions.
		2.2 Setup of a smartphone according to the manufacturer instructions and guidelines.
		2.3 Use of apps in Android and iOS devices according to the user manuals.
Learning Unit 3: Use various ICT technologies in daily life	10	**3.1** Utilize electronic systems to handle financial transactions based on their needs.
		3.2 Use of emerging technologies in a world of entertainment in accordance with required protocol.
		3.3 Use of online or ICT dependent public services as per applied rules and regulations.
Learning Unit 4: Maintain ICT equipment, tools, and consumables	4	**4.1** Clean and maintain ICT equipment & tools according to manufacturer's specifications and organizational manuals.
		4.2 Maintain and replace consumables and supplies according to organizational procedures.

Learning Unit 1: Utilize the computer
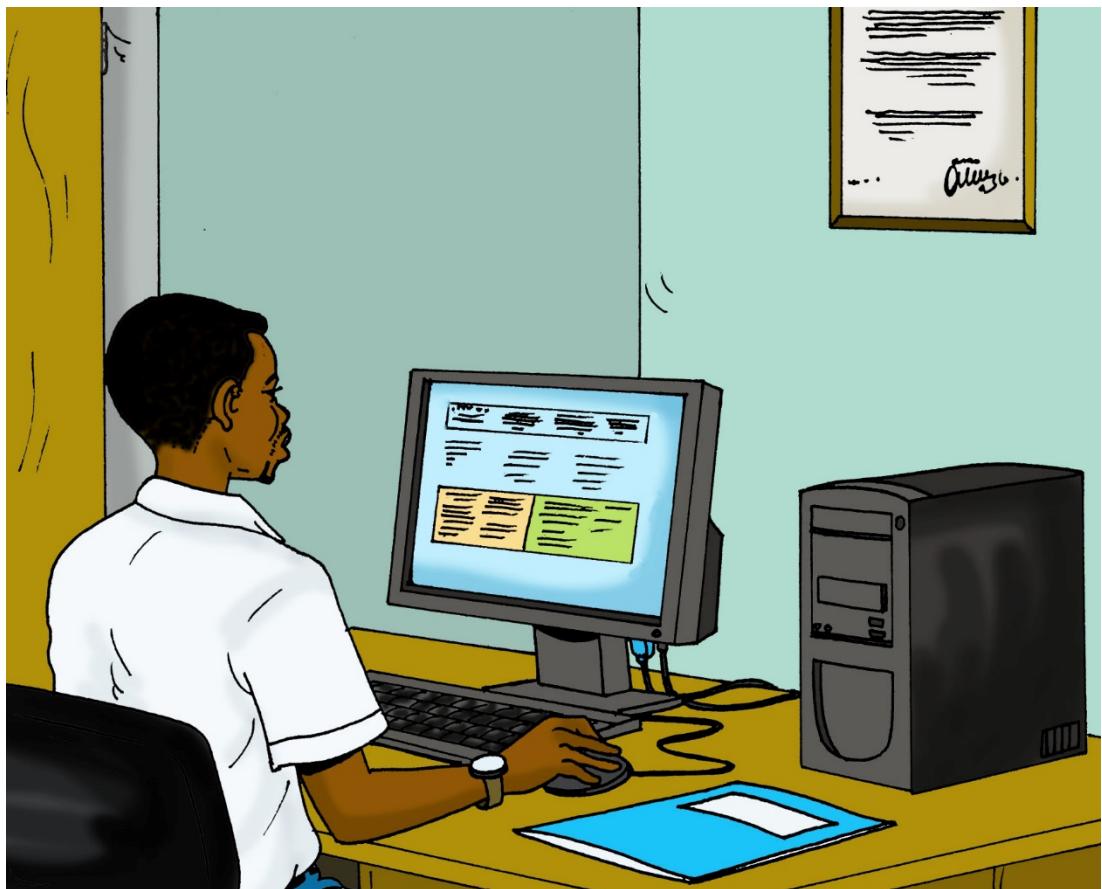
Learning Outcomes

By the end of the Learning Unit, trainees will be able to:

1.1   Describe the main components of a computer according to their functions

1.2   Manipulate computer's desktop, files and disks in accordance with operating system instructions

1.3   Accomplish task using relevant application programs

1.4   Apply computer security mechanisms in order to prevent unauthorized access

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Learning Unit 1 Self-Assessment

1. Ask trainees to review the illustration above (in their Trainee Manuals) and discuss what they see. What topics do they think this unit will include based on the illustration? After some brainstorming, share the main topics.

2. Ask trainees to fill out the self-assessment at the beginning of the unit in their Trainee Manuals. Explain that the purpose of the self-assessment is to become familiar with the topics in the unit and for them to see what they know or do not know. At the end of the unit, they will do a self-reflection, which includes re-taking the self-assessment and identifying their strengths, areas that need improvement, and actions to take. The self-assessment is not a test!

Describe the main components of a computer according to their functions

<table>
<tr>
<td></td>
<td>Objectives: By the end of the learning outcome, trainees will be able to:
a. Describe computer components and network devices
b. Install and manipulate software
c. Classify main components of a computer according to their functions</td>
</tr>
<tr>
<td></td>
<td>Time Required: 4 hours</td>
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<tr>
<td></td>
<td>Learning Methodology: Pair work, presentation, group discussion, brainstorming and practical exercises</td>
</tr>
<tr>
<td></td>
<td>Materials Needed:
• Flip-chart paper and markers / blackboard and chalk
• Paper and pens
• Printed pictures of computer components and labels (Problem Solving Task 3)
• Index or other cards
• Tape
• Software (application software, system software, antivirus)
• Computer, internet, and accessories</td>
</tr>
<tr>
<td></td>
<td>Preparation:
❑ Prepare computer lab with computers and accessories.
❑ Prepare CD of operating systems and application software, ensuring that the computers in the lab are not already running the software to be installed.
❑ Put necessary network devices in lab.
❑ Make sure that there is an internet connection in the computer lab.
❑ Print pictures of computer components and labels taped onto separate index cards.</td>
</tr>
<tr>
<td></td>
<td>Cross Cutting Issues:
✓ Standardization Culture: Emphasize that computer devices work based on standards
✓ Inclusive Education: When distributing roles or forming groups, ensure that all trainees are given equal opportunities
✓ Gender: Remember to introduce gender balance when assigning roles or forming groups to use computers</td>
</tr>
<tr>
<td></td>
<td>Prerequisites:
▸ Exposure to electronic devices such as radios, mobile phones, and ideally to computers</td>
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</table>

Key Competencies:

Knowledge	Skills	Attitudes
1. Describe computer components and network devices	1. Select computer components and network devices	1. Careful
2. Identify different types of computer hardware and software	2. Present computer hardware according to their functions	2. Methodical
3. Identify computer components and network devices according to their functions	3. Select network devices according to their functions	3. Confident

Steps:

Getting Started: What do we know and where are we going?

1. Ask trainees to turn to **Topic 1.1 Task 1** in their Trainee Manuals. Ask the class to brainstorm responses to the following questions and write them on flipchart paper:
   a. What is a computer?
   b. What are computers used for?
   c. What are the main parts of a computer?
   d. What are "network devices" and what do they do?

2. After the discussions, clarify responses and misunderstandings about computer components and network devices (Note: network devices are devices, like a modem, that help connect a computer to a network).

3. Introduce the learning outcome and have trainees turn to the table of knowledge, skills, and attitudes and review the content together.

4. Explain that this learning outcome/session will focus on computer hardware, software, network devices, and software installation.

Problem Solving Activity

1. Bring trainees to the computer lab and have them turn to **Topic 1.1 Task 2** in their Trainee Manuals. Have trainees form groups and ask them to do the following tasks on a sheet of paper:

    a. Make a list of all computer components they can see in the lab.

    b. Identify and list all the hardware they can see in the lab.

    c. Identify and list all the devices that contain software that they can see in the lab.

    d. Identify and list all networking devices they can see in the lab.

2. Give them enough time to do the tasks.

3. After the above tasks, have each group present their findings to the rest of the class. As groups present, write their responses on the flipchart/chalkboard and put a tick next to any devices the previous groups have already mentioned. Encourage trainees to identify the devices they listed.

4. After the presentations, have trainees refer to **1.1 Key Facts** and review them together. Answer any question trainees may have.

5. Have the class refer to the illustration in **Topic 1.1 Task 3.1**, and have them identify each of the:
    a. Input devices
    b. Output devices
    c. Storage devices

6. If there are any items that the class cannot identify, share the correct answers.

    Answers:
    Output devices: Monitor, printer
    Input devices: Keyboard, mouse
    Storage devices: Tower (primary storage is inside)
    Network devices: Router

7. Bring several sets of the computer parts printouts and labels, taped onto index cards, to class. Have the class refer to **Topic 1.1 Task 3.2** in their Trainee Manuals. Break trainees into small groups, and distribute the cards to each group.
    a. Have the groups try to match each picture with its label.
    b. Circulate around the groups and provide assistance as needed to help the groups correctly match the cards to the labels.

Central Processing Unit (CPU)   **Hard drive**   **Power supply unit**

Fan   **Network Interface Card**   **RAM**   **Ethernet Port**

Ethernet Cable

Guided Practice Activity

1. Ask trainees to turn to **Topic 1.1 Task 4** in their manuals.

2. With trainees in the same groups as **Topic 1.1 Task 3.2** (if possible), have them open their Trainee Manuals to **1.2 Key Facts**:

    a. Review **1.2 Key Facts.**
    b. Ask them to discuss each item pictured on the cards (from the previous activity) and what it does.
    c. After the trainees discuss in small groups, ask for a representative from each group share what the items on the cards do. Ask each representative to share on one item, and then pause for questions from the classroom before moving on to the next group.

3. Bring trainees to the computer lab. Have each computer station set up so that the trainees can install software on the computer (examples: Microsoft Word, antivirus software, etc). Each group can install a different type of software. Make sure any software install instructions, included with the software, are also at the computer stations. Have trainees turn to **Topic 1.1 Task 5** in their Trainee Manuals.

4. Form small groups of trainees and give each group a sheet of paper. Remind them that in **1.1 Key Facts**, they learned that software is a set of instructions and documents that tells a computer what to do. Remind them of the difference between an operating system and a software application.

5. Have trainees review **1.3 Key Facts.**

6. Tell each group to install the software at their computer stations. Remind them that they can refer to **1.3 Key Facts** and the software installation instructions at their computer stations.

7. Have each group record what steps they took to successfully install the software and where they had trouble following the instructions.

8. After completing the task, have each group present what they did to the rest of the class. They should share what they did well, the steps they took, and where they had trouble. Write their responses on the flipchart/chalkboard. As each group shares what they did well and where they had trouble, ask other groups to raise their hands to see if they had trouble with the same things or were successful at the same things.

9. After the presentation, have the trainees refer again to **1.3 Key Facts** and add any notes to their manual that they think would be helpful to have for the future.

10. Ask trainees if they have any questions; answer any questions that they may have.

Application Activity

1. Break trainees into new small groups and tell them they are going to solve a problem together. Have them open their Trainee Manuals to **Topic 1.1 Task 6**. Read the following scenario aloud:

   Alice has a small business repairing computers. One day, a customer comes in with a computer problem, and he needs Alice's help! The customer was trying to install new software on his computer and the install was not working. Alice doesn't know much about software, but she knows that you do, so she asks you to help her by writing down the steps she should take to troubleshoot the customer's problem.

2. Using flipchart paper, ask each group to write down the steps they need to take to troubleshoot the customer's problem.

3. After the groups have recorded the steps, have each group share their steps with the class. Did each of the groups come up with the same steps? Did all groups get all of the steps correct?

Points to Remember

> * Computers have **input devices, output devices, storage devices, and network devices.**
>
> * To install software applications on a computer, you need to carefully follow the steps described in the software manual/follow the prompts on your computer.

Formative Assessment

Read the statement below and circle the **BEST** option.

1. Which one belongs to network devices:
   a. Computer screen
   b. Modem
   c. Mouse
   d. Antivirus
   e. None of the above
   Correct answer: b

2. A network device connects a _____ to a _____.
   Correct answer: computer; computer network

Task 1: Install operating system

Provide trainees with an operating system disc and ask them to install the operating system. Refer to **1.3 Key Facts**: Installation and manipulation of software.

Task 2: Install software

Provide trainees with a software installation disc (ex. Microsoft Office or antivirus software) and ask them to install the software. Refer to **1.3 Key Facts**: Installation and manipulation of software.

ⓘ Further Information for the Trainer

1. https://www.ictlounge.com/html/computercomponents.htm
2. https://www.brighthub.com/computing/hardware/articles/63527

Learning Outcome 1.2: Manipulate computer's desktop, files, and disks in accordance with operating system instructions

Objectives: By the end of the learning outcome, trainees will be able to:
   a. Identify different OS and their roles
   b. Explore files and folder
   c. Manage computer hard disks

Time Required: 3 hours

Learning Methodology: Brainstorming, practical exercises, and group discussions

Materials Needed:
- Computer, internet
- Computer accessories
- DVD/CD
- USB Flash disk
- External hard disk
- Tapes
- OS software
- Flip-chart paper and markers / blackboard and chalk

Preparation:
☐ Prepare computers in lab with Microsoft offices.
☐ Put storage media in computer lab.
☐ Assure that there is an internet in lab computers.

Cross Cutting Issues:
✓ Emphasize use of computer regardless gender and disability
✓ When giving role or forming groups ensure that all trainees are given equal opportunities

Prerequisites:
▸ Basic Knowledge of computer components and their functions
▸ Software application and operating system roles

Key Competencies

Knowledge	Skills	Attitudes
1. Identify the role of an operating system.	1. Install an operating system.	1. Attentive
2. Describe file, folder, and file extension.	2. Manipulate files and folders (creating a new folder, copy, move, delete and restore to recycle bin, save file)	2. Detail-Oriented
3. Identify types of hard disk storage.	3. Manage hard disks.	3. Diligent

Steps:

Getting Started: What do we know and where are we going?

1. Ask trainees to turn to **Topic 1.2 Task 1** in their Trainee Manuals. Have them turn to the person next to them and brainstorm responses to the following questions:
   a. What is an operating system?
   b. What is a software application?
   c. What are folders and files ?
   d. Why do we need files and folders?
   e. What is a hard disk?
   f. Why would you partition a hard disk?

2. After brainstorming, clarify the trainees' responses and answer any questions.

3. Introduce the learning outcome and have trainees review the key competencies.

4. Explain that this learning outcome will focus on manipulating a computer's desktop, files, and disks in accordance with operating system instructions.

Problem Solving Activity

1. Bring the trainees to a computer lab. Place trainees in small groups (2-3 trainees per group, so that there are not too many per computer) and ask them to turn to **Topic 1.2 Task 2** in their Trainee Manuals. Together, they should respond to the following questions in their manuals, referencing their computer desktops where appropriate.

2. Sketch:
   a. A folder icon
   b. A file icon

3. Keeping students in small groups, assign half the groups to review **1.4 Key Facts** and the others to review **1.5 Key Facts.** Instruct the students to review the instructions to teach the other half of the room. Each group should think about how best to teach the material they are responsible for. Challenge them to do more than read it aloud.

4. Once each group has a plan to teach their material, call on groups to share.

5. Ask all trainees to review **1.4 Key Facts** together. Review this with them and ask if they have any questions. Clarify any misunderstandings that they may have.

6. Ask all trainees to review **1.5 Key Facts** together. Review this with them and ask if they have any questions. Clarify any misunderstandings that they may have.

 Guided Practice Activity

1. Have trainees refer to **1.4 Key Facts** in their Trainee Manuals and complete following tasks on their computers:
   a. Create a folder and a file
   b. Save a document
   c. Copy a folder
   d. Delete temporary or permanent files
   e. Restore files or folders from the recycle bin
   f. Backup files or folders on the following media:
      i. DVD
      ii. Portable Hard Disk
      iii. USB Flash drive

2. Give them enough time to do each task.

3. After completing the task, have each group present their findings to the rest of the class. Ask: Was there anything that was challenging? Why? How did your group solve the problem? Did any group have a task they could not complete? If groups had incomplete tasks, ask another group to share what they did to complete the task.

4. With the same methodology above, ask the trainees to refer to **1.5 Key Facts,** under **Topic 1.2 Task 3** in their Trainee Manuals. Have them work together in small groups to:
   a. Format a hard disk.
   b. Partition a hard disk.
   c. Remind trainees that they learned about installing OS in **Learning Outcome 1.2**, and ask them to use that knowledge to install a new operating system on the new disk partition.
   d. Delete a partition created.

5. Give them enough time to do each task.

6. After the tasks are completed, have each group present their findings to the rest of the class. Ask: Was there anything that was challenging? Why? How did your group solve the problem? Did any group have a task they could not complete? If groups had incomplete tasks, ask another group to share what they did to complete the task.

Application Activity

1. Have trainees use a computer to complete the following tasks found in **Topic 1.2 Task 5**:
   a. Create two folders and name them **Student** and **Teacher**
   b. Save the folders created on hard disk **: D**
   c. Create two word documents and name them **Activity 1** and **Activity 2** and save them under the folders created above (so one document is in each folder, the student folder and the teacher folder).
   d. Back-up the folders created on external media (hard drive, DVD, or USB)
   e. Create a partition on the hard disk, with the new drive named **:B,** format the partition, and save the two folders created above with their files on **:B**

Points to Remember

- Saving files with a date in the file name helps you know which file is the most recent version.

- Always delete the old partitions.

- By deleting a partition on a hard disk, you will lose all data on that partition.

- If you are not sure of what you are doing, make sure you have a backup of any important data.

Formative Assessment

Circle the best answer:

1. **Which software is an operating system?**
   a. Microsoft Word
   b. Photoshop

     c.   Microsoft Windows 7

     d.   Illustrator

Answer: c

2. **What is the difference between a computer folder and file?**
    Answer: The basic difference between the two is that files store data while folders store files and other folders. Folders are essential to organize files on a computer.

3. **Partitioning a hard disk allows you to (select all that apply):**
    a.   Increase disk space
    b.   Install multiple operating systems on the same computer
    c.   Proceed with formatting
    d.   Organize your files
    e.   Help to keep your data from getting corrupted
    f.   Encrypt files

    Answers: b), d), and f)

4. **Task 1:** Create a folder, name it "my work," and save it on the desktop.

5. **Task2:** Burn the folder onto a DVD.

(i) Further Information for the Trainer

1. http://www2.southeastern.edu/Academics/Faculty/nadams/etec650/fdiskformat.htm

2. https://www.computerhope.com/jargon/e/explorer.htm

Learning Outcome 1.3: Accomplish tasks using relevant application programs

Objectives: By the end of the learning outcome, trainees will be able to:

a. Create, edit, format, save and print documents by using Microsoft Office
b. Design a database using MS access
c. Create presentation using MS Power Point.
d. Create tables using MS Excel

Time Required: 8 hours

Learning Methodology: Individual work, brainstorming and group work.

Materials Needed:

- Flip-chart paper and markers / blackboard and chalk
- Computer, internet
- Computer accessories
- Printer
- Flash disk
- Tapes
- Software

Preparation:

❑ Prepare computer with Microsoft office or other similar application software.
❑ Have internet connection in computer lab.

Cross Cutting Issues:

✓ Emphasize on the use of computer considering gender and trainees with disabilities
✓ When giving role or forming groups ensure that all trainees are given equal opportunities

Prerequisites:

▸ Basic knowledge on computer applications
▸ Basic skills on typing

Key Competencies:

Knowledge	Skills	Attitudes
1. Use Microsoft Word.	**1.** Create a document, edit and format document, and print Microsoft word document.	**1.** Teamwork
2. Use an Excel spreadsheet.	**2.** Create a workbook, enter, sort, and filter data, format and create a simple formula.	**2.** Innovative
3. Use PowerPoint slides.	**3.** Create PowerPoint slides, integrate content, and transition effectively.	**3.** Persistent
4. Identify different objects of MS access database.	**4.** Design database sets using MS access.	**4.** Attention to detail

Steps:

Getting Started: What do we know and where are we going?

1. Ask trainees to turn to **Topic 1.3 Task 1** in their Trainee Manuals. With the person next to them, they should think about the following scenario:

   Imagine calling for an ambulance. It arrives at your doorstep in 15 minutes. What hardware and software systems do you think could be behind the scenes, supporting this rapid response?

2. Prompt trainees to think about the computer systems, including hardware, operating systems, and software that might be involved in coordinating an emergency response.

3. Tell trainees that this next unit will focus on some of the basic software suites and tools that support these complex operations.

4. In a large group discussion, have trainees brainstorm about other services and what computer systems might be involved in these services. Write their responses on a board. If trainees are slow to suggest ideas, the following may be useful prompts:

   a. Cash register at a business (many have operating systems and software that help conduct basic arithmetic; sophisticated ones may help stores track inventory).
   b. Street lights (timed streetlights may be programmed or scheduled to come on at a specific time to make the community safer for pedestrians).

5. Ask trainees to turn to **Topic 1.3 Task 2** in their manuals. With the person sitting next to them, they should try to answer the following questions:

    a. What is the difference between systems software and application software?
        Answer: an operating system is what coordinates the hardware in a computer; application software is designed for the user to use.
    b. Can you think of examples of application software?
        Answer: spreadsheets, word processors, web browsers
    c. Do you use any application software on a regular basis? Do you think there are some application software or software suites that are commonly used?
        Answer: Answers will vary.

6. Once trainees have had some time to brainstorm together, ask for volunteers to share their ideas with the larger group.

7. Introduce the learning outcome and have learners turn to the table of knowledge, skills, and attitudes in their manuals. Explain that this learning outcome/session will focus on accomplishing tasks using relevant application programs.

Problem Solving Activity

1. Bring trainees to a computer lab. Make sure that the computer lab has 3 workstations. One station should have Microsoft Word, another should have Microsoft Excel, and a third should have Microsoft PowerPoint.

2. Ask trainees to form small groups and ask them to choose a group name. Instruct them that each group will spend 10 – 15 minutes at each workstation, completing the tasks on the checklists in their Trainee Manuals.

3. Instruct trainees to turn to **Topic 1.3 Task 3** in their Trainee Manuals and complete the checklists.

4. As the small groups move through the workstations, remind them 5 minutes before they will rotate, and then again, 2 minutes before they rotate. This will help to keep them on task.

5. At the end of the activity, ask each group how far they made it through each of the checklists. If one checklist item was more problematic for some groups, ask for volunteers to show the class how to complete that checklist item.

6. Tell trainees that Microsoft Office is one example of a set or "suite" of software applications to accomplish basic tasks like writing, conducting calculations, and sharing visual information. Often, Microsoft Office also includes a software application called "Microsoft Access" which is a database. If trainees specialise in ICT, they may learn about databases and database software.

Checklists:

Microsoft Word:

- ❑ Identify the ribbon
- ❑ Using the ribbon, save a document with the name of your group
- ❑ Write "this is our word document"
- ❑ Make the text **bold**
- ❑ Move the text to the centre of the document
- ❑ Insert a table
- ❑ Insert a footer
- ❑ Print the word document

Microsoft Excel:

- ❑ Identify the ribbon
- ❑ Using the ribbon, save a document with the name of your group
- ❑ Input the following text in the first column, with each word appearing on one row: beans, chicken, rice
- ❑ Input the following numbers in the second column, with each number appearing on one row: 200, 500, 100
- ❑ Bold the column headings
- ❑ Turn the first column red
- ❑ Insert a row between "beans" and "chicken" and name that row "Beef"

Columns and rows should appear as:

Beans	200
Chicken	500
Rice	100

Microsoft PowerPoint:

- ❑ Identify the ribbon
- ❑ Using the ribbon, save a document with the name of your group
- ❑ Type your group name into the title slide
- ❑ Add a new slide
- ❑ Click on the slide to add a SmartArt graphic (see below, the arrow with text dropping down)

- ❑ Select the first graphic and insert it into the slide

![Guided Practice Activity icon] **Guided Practice Activity**

1. Bring trainees to a computer lab and have them work together in pairs or small groups.

2. Ask trainees to open Microsoft Excel and turn to **Topic 1.3 Task 4** in their Trainee Manuals. Tell them that they will learn a bit more about Microsoft Excel. Tell them that Microsoft Excel can be used for calculations, including arithmetic. Most of these functions can be completed using the symbols they are accustomed to: = + -

3. Tell trainees that the intersection between a row and a column is called a "cell."

4. Instruct trainees to open Microsoft Excel and save the workbook as "Bookstore Management." Tell them to rename the first sheet "Book List."

    You are a bookseller and your inventory is kept in an excel file called "Book List." Daily, you update the list to add books received from the warehouse and remove books sold. Today, you received a shipment of <u>Disciples</u>. You must update your inventory with this shipment and also record a sale of <u>Good News.</u>

Title	Book writer	Publish date	Price /unit	Qty offered	Total price
Good News	Peter Roger	12/09/1989	2000	4	8,000
Disciples	Kayihura Bernard	03/07/2001	1000	2	2,000
The Secret	Mbarute Faustin	06/09/1783	5000	1	5,000
Human kindness	Kush Bushima	09/01/2003	3000	10	30000
Total					

5. Ask trainees to perform the following calculations:

    a. Add the total number of books you have. To do so, go to the "total" row and to the column titled "Qty Offered" and do the following steps:

        i.   Type =Sum into the cell

        ii. A box will appear. Using this box, select the entire "Qty offered" column *but do not select the text/title of the column*.

        iii. Hit enter. Once you have completed this task, someone in your group should raise their hand to report the answer.

As groups work on the task, walk around the room and help them. **The correct answer is 17.**

    b. Once each group has the correct number, ask them to complete the remaining tasks:

        i. Navigate to the row for <u>Disciples</u> and add 4 books by typing 6 into the cell (the new information will replace the 2 that was there). What happened to the total number of books?

        ii. Navigate to the row for <u>Good News</u> and delete a book by typing 3 into the cell (the new information will replace the 4 that was there).

    c. Have students create a new worksheet by going to the bottom of the sheet and adding a new sheet. They should call the new sheet "Customer List."

⚙️ Application Activity

1. Bring the trainees to the computer lab and place them into small groups. Have them turn to **Topic 1.3 Task 5** in their Trainee Manuals, and read the following scenario:

With your small group, you are planning to apply for a loan to start a business. In order to apply for the loan, you need to present the following documents:

- A Microsoft Excel file that details your start-up costs

- A Microsoft PowerPoint presentation that includes:
  - The name of your business
  - The co-founders of your business
  - What you will sell
  - Who your customers will be
  - What you need in start-up costs
  - What you already have that you and your co-founders can invest
  - The loan amount you are requesting

- A Microsoft Word document structured as a letter to the loan officer

2. Have trainees work together to develop each of the files requested. Remind them to save their work (they can "Save As" using their business name).

3. As trainees work on their loan packages, remind them that they have three items to create, and they should not get too lost in the details. They have a limited time to create the loan application package.

⭐ Points to Remember

- Microsoft Word is useful for presenting written information.

- Microsoft PowerPoint is useful for sharing visual information.

- Microsoft Excel is useful for managing numerical information.

- Each of these software applications is powerful and can do a lot more. To develop expertise in any of them, you need to use them a lot.

✅ Formative Assessment

Circle the best answer:

1. Text-styling feature of MS word is:
   a. Word Colour
   b. Word Font
   c. Word Art
   Answer: C

2. Which items are placed at the end of a document?
   a. Footer
   b. Foot note
   c. End note
   d. Header
   Answer: A

3. What is the intersection of a column and a row on a worksheet called?
   a. Column
   b. Value
   c. Address
   d. Cell
   Answer: D

4. Statistical calculations and preparation of tables and graphs can be done using:
   a. Adobe Photoshop
   b. Excel
   c. Notepad
   d. PowerPoint
   Answer: B

5. How is a slide show started on PowerPoint?
   a. Click on go
   b. Turn on transition
   c. Click on the slide show icon
   d. All of the above

   Answer: C

(i) Further Information for the Trainer

1. https://support.office.com/en-us/article/basic-tasks-in-excel-dc775dd1-fa52-430f-9c3c-d998d1735fca
2. http://publish.uwo.ca/~oburchel/ms_muffet/ppt.htm
3. http://www.lausd.k12.ca.us/Wright_Magnet/teachers/lrubin/ppt5.pdf

4. https://www.digitalunite.com/technology-guides/creating-documents/how-use-microsoft-word/how-bold-italicise-or-underline-text
5. https://corporatefinanceinstitute.com/resources/excel/study/basic-excel-formulas-beginners/
6. https://www.dummies.com/computers/operating-systems/windows-10/how-to-copy-files-to-or-from-a-flash-drive-on-your-windows-10-computer/

Learning Outcome 1.4: Apply computer security in order to prevent unauthorized access

Objectives: By the end of the learning outcome, trainees will be able to:

a. Install and update antivirus software
b. Backup and restore data
c. Protect data access

Time Required: 3 hours

Learning Methodology: Pair work, trainee presentations, group discussion

Materials Needed:

- Flip-chart paper and markers / blackboard and chalk
- Computers, internet
- Computer protection software
- Computer accessories
- OS Software
- USB Flash Drive
- External Disk

Preparation:

☐ Make sure there are enough computers in lab.
☐ Ensure you have computer protection software.
☐ Ensure you have effective internet.

Cross Cutting Issues:

✓ Emphasise use of computer regardless gender and disability
✓ When giving roles or forming groups ensure that all trainees are given equal opportunities

Prerequisites:

▶ Basic skills in software installation
▶ Basic knowledge of software security

Key Competencies:

Knowledge	Skills	Attitudes
1. Understand antivirus software.	1. Update and install antivirus software.	1. Respectful
2. Identify user privileges.	2. Create user authentication and provide user privileges.	2. Methodical
3. Describe back-up and restoration.	3. Back-up and restore data.	3. Self-confidence

Steps:

Getting Started: What do we know and where are we going?

1. Ask the trainees to turn to **Topic 1.4 Task 1** in their Trainee Manuals.

2. Ask trainees to turn to the person next to them and discuss the following questions.
   a. What is computer security?
   b. Why do we need computer security?

3. After trainees have had enough time to respond to the questions, ask volunteers to share their answers. During the conversation, clarify their responses about computer security and its relevance.

4. Introduce the learning outcome and have learners turn to the table of knowledge, skills, and attitudes. Explain that this learning outcome/session will focus on applying computer security in order to prevent unauthorized access.

Problem Solving Activity

1. Ask the trainees to turn to **Topic 1.4 Task 2** in their Trainee Manuals. Place them in small groups.

2. Have the class review **1.6 Key Facts**. Tell them that they should use **1.6 Key Facts** to respond to the questions and prompts below:
   a. Why is computer security important?
   b. List types of computer security threats.
   c. What are best practices to maintain computer security?

3. Write the 4 questions listed above on a whiteboard or chalkboard. Give trainees time to respond the above questions.

4. Once trainees have completed the task, ask a volunteer from each group to write their group's responses on the board. Make sure to ask each volunteer to address only one of the above questions.

5. After the volunteers have written their group's responses on the board, ask the class to call out any missing information. Fill in any missing information on the board.

6. Ask if there are any questions and clarify the responses.

Guided Practice Activity

1. Bring trainees to a computer lab. Form groups of 2-3 trainees and help them to complete the following tasks:
   a. Create a computer username and password
   b. Update the computer's antivirus software
   c. Back-up and restore a PC

2. Give them enough time to complete the tasks. Remind them that they learned about some of these skills in earlier lessons. If they seem to be having difficulty with the tasks, direct them to **1.2 Key Facts** and **1.4 Key Facts.**

3. After each group has finished with its task, move from one group to another with other groups to check their work. When you are done with all groups, ask the trainees the challenges they encountered and answer any questions they may have.

Application Activity

1. Bring trainees to a computer lab and have them turn to **Topic 1.4 Task 3** in their Trainee Manuals. Have them read the following scenario:

   Your friend knows that you are learning about computers. He uses a computer for his business, to record sales, to keep track of customers, and to market his kiosk. He recently lost a lot of data because his computer was not protected and not backed up. He asks you to help him set up his computer so that he does not lose important information again.

2. Trainees should **c**omplete the following tasks to help your friend:
   a. Protect his computer against viruses (by installing antivirus software).
   b. Create a username and password for the computer.

c. Update the antivirus software.

d. Back-up and restore his PC applications and data.

⭐ Points to Remember

- Create passwords to limit access to computers or devices.

- Always install antivirus software and keep the software updated.

- It is important to regularly back-up data so that you can restore it if a virus or malware corrupts your computer, software, or files.

📋 Formative Assessment

Choose the Correct Answer

1. Which of these is the best way to protect data?
   a. Install and update antivirus
   b. Create a list of files that you have on your computer
   c. Take screenshots of your files
   Answer: A

2. True or false:
   a. Creating a computer username and password is effective for managing physical security of computers and devices/ **False**
   b. Creating a computer username and password is an effective way of managing authorized access to computers and devices. /**True**

3. What should you do when creating a strong password? (Choose the *best* answer).
   a. Write it down.
   b. Use the same password for all computers and devices.
   c. Share it with someone else.
   d. Make sure that the password includes one uppercase letter, one lowercase letter, a number, and a symbol.
   Answer: **D**

Self-Reflection

1. Ask the trainees to re-take the self-assessment from the beginning of Unit 1. They should then fill in the table in the Trainee's Manual to identify their areas of strength, areas for improvement, and actions needed to improve.

2. Discuss the trainees' results with them. Identify any areas that are giving many trainees difficulty and plan to give additional support as needed (ex. use class time before you begin the next learning outcome to review commonly identified difficult concepts).

Summative Assessment:

Integrated situation:

ICT Training center is located at NYABIGEGA Eastern Province. Today this center is looking for applying training programs accreditation. The regulating institution recommended having a computer lab with necessary computer hardware and network devices required to deliver ICT training. Hence the ICT training center is looking the experienced ICT Technician to do the following tasks: **Task 1:** Identify basic network devices and computer components needed to make a computer lab. **Task 2:** Partition the hard disk on each computer and install Windows (operating system) and Microsoft Office (software application). **Task 3:** a. Use a word processing application to write a report. b. Use a spreadsheet to make a table of all computer lab devices required. c. Use presentation software to prepare a presentation. **Task 4:** a. Protect a computer with a username and password for preventing unauthorized access. b. Protect a computer with antivirus software. c. Backup and restore data.	**Materials:** Network cable **Tools:** • Operating System Windows • Microsoft Office • Hard disks **Equipment:** • Computers • Projector • Wireless Access Point • Hub • Router • Speakers • Microphone • Keyboard • Mouse

Task 1: Identifying network devices and computer components needed to make computer lab

Assessment Criteria:

1. Quality of Process: The trainee is able to effectively complete steps required to accomplish the task

2 . Efficiency: The trainee manages time well to accomplish the task

3. Relevancy: The trainee responds to the task

Indicator 1 The trainee is able to identify and assemble the appropriate components for a computer lab.

Indicator 2: Time is well managed as it was assigned by trainer

Checklist		
	Yes	No
Identifies computer components		
Identifies connectors		
Identifies ports		
Identifies network devices		
Network cable		
Observation		

Task 2: Partition Hard disk and Install operating system Windows and Microsoft office.

Assessment Criteria:

1. Quality of Process: The trainee is able to effectively complete steps required to accomplish the task

2. Efficiency: The trainee manages time well to accomplish the task

3. Relevancy: The trainee responds to the task

Indicator 1: Hard disk is partitioned according to the manufacturer guidelines

Indicator 2: Windows OS and MS office are installed in computers according to the instructions
Indicator 3: Time is well managed as it was assigned by trainer

Checklist	Score	
	Yes	**No**
Hard disk partition guidelines (steps):		
Step 1: Open the Computer Management tool. Open the Start menu. ...		
Step 2: Select the Disk Management tool. ...		
Step 3: Make some space for the new partition		
Step 4: Shrink the drive		
Step 5: Create a new volume		
Step 6: The New Simple Volume Wizard		
Step 7: Enter size of new partition		
Step 8: Give the new volume a letter name or path		
OS software installation instructions (steps):		
Step 1: Insert the installation disk or flash drive		
Step 2: Restart your computer		
Step 3: Wait for the computer's first startup screen to appear		
Step 4: Select the location from which you want to start your compute		
Step 5: Move your selected location to the top of the list		
Step 6: Restart your computer		
Step 7: Follow the on-screen prompts		
Application software installation steps		
Step 1: Decide which application to install		
Step 2: Double-click the Setup installer		
Step 3: Enter your product key or create an account (if applicable)		
Step 4: Launch the application		
Observation		

Task 3: Use application software to make a document, tables, presentation and create a database

Assessment Criteria:

1. Quality of Process: The trainee is able to effectively complete steps required to accomplish the task

2. Efficiency: The trainee manages time well to accomplish the task

3. Relevancy: The trainee responds to the task

Indicator 1: Document is completed using word processing software

Indicator 2: Tables are filled and formatted using spreadsheet software

Indicator 3: Presentation is prepared using presentation software

Indicator 5: Attention to details are manifest throughout tasks

Indicator 6: Time is well managed as it was assigned by trainer

Checklist	Score	
	Yes	**No**
Document writing steps		
Step 1: Open word processing		
Step 2: Name document and save document		
Step 3: Write document content		
Tables creation steps		
Step 1: Open spreadsheet		
Step 2: Name document and save worksheet		
Step 3: Creating table in worksheet		
Presentation creation steps		
Step 1: Open PowerPoint		
Step2: Save power point presentation		
Step3: Write content on slides		
Observation		

Task 4:

    (a) **Protect a computer with Login ID and password for preventing unauthorized people to access data.**

    (b) **Protect a computer with antivirus software**

    (c) **Make backup and restore data**

Assessment Criteria:

1. Quality of Process: The trainee is able to effectively complete steps required to accomplish the task

2. Efficiency: The trainee manages time well to accomplish the task

3. Relevancy: The trainee responds to the task

Indicator 1: Username and strong password are well created according to the system requirements

Indicator 2: Computers are protected with antivirus software

Indicator 3: Backup of applications and data is done and the deleted files/folder or applications are restored

Indicator 4: Time is well managed as it was assigned by trainer

Checklist	Score	
	Yes	**No**
Setting up computer password steps		
Step 1: Click the "Start" button		
Step 2: Click "Control Panel"		
Step 3: Click "User accounts, ”and then "User Accounts and Family Safety"		
Step 4: Click "Continue" if the User Accounts Control asks for permission to make the change		
Step 5: Click your account name in the list		
Step 6: Click "Create a password"		
Step 7: Enter a password in the text box		
Step 8: Reboot your computer and log in to your account with your new password		
Steps for installing antivirus software		

Step 1: Decide which antivirus software to install		
Step 2: Double-click the "Setup installer"		
Step 3: Enter your product key (if applicable)		
Step 4: Follows directions		
Backup and restore data or applications		
Step 1: Determine how to back up date (ex. select external drive)		
Step 2: Back up data or applications		
Step 3: Restore data or applications		
Observation		

Learning Unit 2: Using mobile technology

1

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1 User: hatalar205. (2015, February 9). *Black-android-phone*. Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Black-android-phone.svg
Open Clip Art Library: Public domain

Learning Outcomes
By the end of the Learning Unit, trainees will be able to: **2.1** Android and iOS devices according to the user manual Use the main buttons and ports according to their functions. **2.2** Set-up a smartphone according to the manufacturer instructions and guidelines. **2.3** Use apps on Android and iOS devices according to the user manual

Learning Unit 2 Self-Assessment

1. Ask trainees to look at the illustration in their Trainee Manuals and discuss what they see. What topics do they think this unit will include based on the illustration? After some brainstorming, share the main topics.

2. Ask trainees to fill out the self-assessment at the beginning of the unit in their Trainee Manuals. Explain that the purpose of the self-assessment is to become familiar with the topics in the unit and for them to see what they know or do not know at the beginning. At the end of the unit, they will do a self-reflection, which includes re-taking the self-assessment and identifying their strengths, areas that need improvement and actions to take. The self-assessment is not a test!

Learning Outcome 2.1: Use of main buttons and ports according to their functions

	Objectives: By the end of the learning outcome, trainees will be able to:
	   a. Describe a mobile phone buttons and ports
	   b. Use main buttons and ports of mobile phone
	   c. Identify the physical components of a smartphone and their functions

	Time Required: 1 hour and 30 minutes
	Learning Methodology: Pair work, presentations, group discussions, individual practical exercises

	Materials Needed:
	   • Mobile phone
	   • Internet
	   • IPads/tablets
	   • Phone photos

	Preparation:
	   ❑ Prepare mobile phones.
	   ❑ Prepare tablets.

	Cross Cutting Issues:
	   ✓ When introducing mobile phones, inform the trainees that the mobile phones should be at standards level
	   ✓ When using mobile phones, inform the trainees that all candidates regardless of sex or disability could attend this training

	Prerequisites:
	   ▸ Exposure to telecommunication devices such as radios and mobile phones
	   ▸ Basic skills on computer

Key Competencies:

Knowledge	Skills	Attitudes
1. Describe mobile phone components.	1. Manipulate mobile phone buttons.	1. Respectful
2. Identify mobile buttons and ports.	2. Use mobile phone buttons and ports.	2. Methodical
3. Classify phone categories.	3. Use new mobile phone technologies.	3. Confident

Steps:

Getting Started: What do we know and where are we going?

1. Ask trainees to turn to **Topic 2.1 Task 1** in their Trainee Manuals.

2. Group trainees into small groups of 4 – 5 trainees and have them review the picture in their manuals. In groups, they should discuss the following questions:
   a. What is a telephone?
   b. What are telephones used for?
   c. What is the difference between a fixed line phone and mobile phone?

3. Give trainees time to complete the task.

4. Select two groups to present their findings to the rest of the class.

5. Clarify their responses and correct any misunderstandings about telephones and differences between fixed line phones and mobile phones.

6. Introduce the learning outcome and have trainees turn to the table of knowledge, skills, and attitudes in their Trainee Manuals.

7. Explain that this learning outcome/session will focus on the use of main buttons and ports according to their functions.

Problem Solving Activity

1. Ask trainees to turn to **Topic 2.1 Task 2** in their Trainee Manuals.

2. Group trainees into small groups of 4 – 5 trainees and have them look at the picture in their manuals. In groups, they should discuss the following questions:
   a. What is the back view of the mobile phone?

    b. What is the front view of the mobile phone?

    c. What are the ports of the mobile phone?

    d. List the keys and buttons found on mobile phones.

3. Give them enough time to work on the task.

4. After 10 minutes, have trainees turn to **2.1 Key Facts**, and ask them to use the key facts to finish answering any remaining questions.

5. Ask if there is a volunteer from any of the groups that would like to share their group's response. If no one volunteers, call on a group.

6. Once one group has shared, ask if anyone has questions. If they do, answer their questions.

Guided Practice Activity

1. Ask trainees to turn to **Topic 2.1 Task 3** in their Trainee Manuals.

2. Print out several copies of the pictures and table below, cutting out the items on the table. You should have enough pictures and tables to give to 4 – 5 groups of trainees.

2

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[2] Bäck, M. (2008, July 20). *Sony Ericsson C902 (Swift Black), front and back* [Photograph]. Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Sony_Ericsson_C902_(Swift_Black),_front_and_back. jpg

Back view of mobile phone	Front view of mobile phone
Earpiece	Microphone
Status	Back camera
Active key	SIM tray
Volume keys	Microphone
Recent apps key	Infrared transmitter
Proximity and gesture sensor	Headset jack
Front camera	Flash
Power/Lock key	USB charger/Accessory port
Back key	
Home key	

3. Split the trainees into small groups, so that you have no more than 4 – 5 groups in the classroom.

4. Ask the trainees to match the paper labels to the buttons, keys, and ports in the photos.

5. Ask the trainees identify the functions of the buttons, keys, and ports.

6. Give them enough time to complete the tasks.

7. Let selected groups present their results from the tasks, and then ask the rest of class to help identify the name/function of any button, key, or port that the groups presenting were unable to identify.

 Application Activity

1. Ask trainees to turn to **Topic 2.1 Task 4** in their Trainee Manuals.

2. Place trainees in small groups of 3 – 4 trainees each.

3. Have trainees read the following challenge:

   Your brother just bought a new mobile phone but does not know how to use it. Based on what you have learned in class, you need to think of a way to teach him what the buttons, keys, and ports on the phone do. Your brother gets bored easily, so work with your partners to see if you can think of a fun way to apply what you

have learned. Can you come up with a song or skit that labels and identifies the function for each key, button, or port?

4. Give the trainees time to come up with a fun way to share what they have learned.

5. Plan to give each group 2-3 minutes at the end of class to share their song, skit, or other fun way of labelling and identifying the functions for each key, button, and port. Encourage creativity.

⭐ Points to Remember

> - Use keys, buttons, and ports as described in the user manual.
>
> - Be careful not to misuse buttons, keys, and ports, or you could damage them.

📋 Formative Assessment

Circle the best answer:

1. Which key or button is on the front of a mobile phone?
    a. Active key
    b. Back key
    c. Flash
    d. Back camera
    e. All are correct
    Answer: A

2. What port is used to charge the battery of a cell phone?
    a. Active key
    b. Back key
    c. USB charger/Accessory port
    d. Front camera
    Answer: C

3. In order to turn a mobile device on or off you must use which of the following:
    a. Power/Lock key
    b. Status light
    c. Volume keys
    d. Back camera
    e. Flash
    Answer: A

Learning Outcome 2.2: Set-up of a mobile phone according to the manufacturer instructions and guidelines

	Objectives: By the end of the learning outcome, trainees will be able to:
	
	   a. Apply smartphone security
	   b. Install smartphone devices
	   c. Use smartphone settings
	   d. Navigate smartphone applications

	Time Required: 3h
	Learning Methodology: Group work, individual exercises, practical exercises, group discussions, and presentations.

	Materials Needed:
	
	  • Smartphone
	  • Internet
	  • Memory card

	Preparation:
	
	  ❑ Prepare the necessary smartphone mobile phones according to the numbers of trainees.
	  ❑ Ensure you have enough internet bandwidth.

	Cross Cutting Issues:
	
	  ✓ When setting up a smartphone, inform the trainees about smartphone standards
	  ✓ When providing tasks and roles to the trainees, consider gender balance

	Prerequisites:
	
	  ▸ Exposure to electronic devices such as, radios, computers, and ideally telephone devices
	  ▸ Basic knowledge and skills on the use of phones buttons, keys and ports

Key Competencies:

Knowledge	Skills	Attitudes
1. Understand mobile phone connectivity.	1. Connect mobile phone to data/wi-fi.	1. Attentive
2. Understand mobile phone security.	2. Apply mobile phone security settings.	2. Methodical
3. Understand mobile phone applications.	3. Install mobile phone applications.	3. Curious

Steps:

Getting Started: What do we know and where are we going?

1. Ask trainees to turn to **Topic 2.2 Task 1** in their Trainee Manuals.

2. Go around the room, asking trainees to volunteer one thing they know about the difference between mobile feature phones, smart mobile phones (smartphones), fixed or landline phones.

3. Challenge trainees to not repeat something someone else has said before.

4. Once everyone in the class has shared one idea, introduce the learning outcome and have trainees turn to the table of knowledge, skills, and attitudes in their books.

5. Explain that this learning outcome will focus on setting up a smartphone according to the manufacturer instructions and guidelines.

Problem Solving Activity

1. Instruct trainees to turn to **Topic 2.2 Task 2** in their Trainee Manuals.

2. Form small groups of trainees and distribute the smartphones to each group.

3. Ask trainees to review **2.2 Key Facts** in their groups

4. Once trainees have reviewed the key facts, have them complete the following tasks:
   a. Install a SIM card.
   b. Remove and replace the mobile phone battery (if model allows).
   c. Connect to wifi.
   d. Set security options.

5. As trainees complete the tasks, walk around the room and provide support. Be sure to respond to any questions that trainees have.

Guided Practice Activity

1. Instruct trainees to turn to **Topic 2.2 Task 3** in their Trainee Manuals.

2. Form small groups of trainees and distribute the smartphones to each group.

3. Have each group navigate to the App Store or to the Google Store, depending on the type of smartphone they are using.

4. Ask each group to download and open Gmail.

5. Using Gmail, have each group:
   a. Create an account with their group name. They should write their group's email address on the board.
   b. Draft an email using appropriate email format (subject line, salutation, content, etc).
   c. Send the email to another group.

6. Each group should let you know once they have both sent and received an email.

Application Activity

1. Group trainees into pairs and have them read the following scenario:

   Karine is a businessperson and she often orders goods online, using a smartphone to send a message to her supplier. However, her smartphone crashed, and she wants a technician to help her do the following:

   a. Insert a new SIM card and install a new battery.
   b. Protect her smartphone from unauthorized access.
   c. Connect to the internet.
   d. Share a document with her colleagues.
   e. Protect her smartphone with strong password.
   f. Download and install Gmail on her smartphone.

Points to Remember

- When you are installing a SIM card or battery, make sure your phone is turned off.
- Make sure your phone has a strong password to prevent unauthorized access.
- Download apps from the App Store or Google Store.
- Manage App settings using your smartphone's security settings.

📋 Formative Assessment

1. Circle one of the basic components of Smartphone.
   a. SIM card
   b. Game application
   c. Music application
   d. Speakers

   Answer: A

2. Which is relevant to smartphone security?
   a. Install Android operating system
   b. Clean the smartphone screen
   c. Change application icons
   d. Create a password

   Answer: D

3. When you want to connect your smartphone to the internet without using data, you should switch on:
   a. Airplane Mode
   b. Bluetooth tendering
   c. Wi-Fi
   d. Mobile data

   Answer: C

4. When you want to download new application to install, which one of the following should you select?
   a. E-mail
   b. Music
   c. YouTube
   d. App Store/Google Store

   Answer: D

ⓘ Further Information for the Trainer

1. https://www.shutterstock.com/search/smartphone+icon
2. https://support.google.com/android/answer/9079129?hl=en
3. https://www.samsung.com/in/smartphones/galaxy-s9/

Learning Outcome 2.3: Use of apps in Android and iOS devices according to the user manual

	Objectives: By the end of the learning outcome, trainees will be able to: a. Use Smartphone calendar b. Take photos c. Use maps d. Use notes e. Use reminders f. Use E-book feature g. Listen to music h. Use a webcam i. Add contacts j. Use App store
	Time Required: 3 hours 30 minutes
	Learning Methodology: Group discussion on using Smartphone applications
	Materials Needed: • Smartphones - at least one smartphone for each pair of trainees • Effective internet connection • Flip-chart paper and markers
	Preparation: ❑ Prepare and distribute the necessary phones. ❑ Organize learners and assign tasks and activities.
	Cross Cutting Issues: ✓ When setting up a smartphone, inform the trainees about smartphone standards ✓ When providing tasks and roles to the trainees, consider gender balance
	Prerequisites: ▸ Basic knowledge of computer applications ▸ Basic skills for using computer applications ▸ Basic knowledge on operating systems and software applications

Key Competencies:

Knowledge	Skills	Attitudes
1. Describe mobile applications.	1. Use various applications.	1. Teamwork
2. Describe the App store.	2. Install Apps from the App/Google store.	2. Innovative

👣 Steps:

↪ Getting Started: What do we know and where are we going?

1. Ask trainees to turn to **Topic 2.3 Task 1** in their Trainee Manuals.

2. Group trainees into small groups of 4 – 5 trainees and have them look at the picture in their manuals. In groups, they should discuss the following questions:
   a. What is a mobile application?
   b. What kinds of mobile applications are there?

3. Ask trainees to share their responses with the rest of the class.

4. Introduce the learning outcome and have trainees turn to the table of knowledge, skills, and attitudes in their books.

5. Explain that this learning outcome/session will focus on the use of Apps in Android and iOS devices according to the user manual.

🔍 Problem Solving Activity

1. Have the trainees turn to **Topic 2.3 Task 2** in their Trainee Manuals.

2. Group them into groups of 4 – 5 trainees. Provide each trainee with flipchart paper and markers.

3. Distribute mobile phones to the trainees.

4. Tell the trainees that they need to come up with a "sales pitch" about the mobile apps and their functions to share with the rest of the class. They should describe the function of the app and why that app is the best.

5. Assign each group a list (shared below) and give them 20 – 30 minutes to work on their sales pitch. Tell them that they may need to explore the app on the phone to capture all its functions.

Name	Function and Sales Pitch (why this is the best app)
Group A	
Internet Browser	
Reminders	
Calendar	
Camera	
Group B	
Clock	
Maps	
Message	
Photo/Video Gallery	
Group C	
Settings	
Music	
Notes	
Sound Recorder/Voice Memo	

6. Have each group give their "sales pitch" to the rest of the class.

7. Have the class vote on which app had the best sales pitch. Encourage healthy competition.

8. After the presentations, ask if anyone has any questions on the apps.

Guided Practice Activity

1. Have the trainees turn to **Topic 2.3 Task 3** in their Trainee Manuals.

2. Have trainees form groups of 4 – 5 trainees each and distribute a mobile phone to each group. Have the groups complete the following tasks:

   a. Have each group come up with a group name and create a Gmail address using that group name.

   b. Write all the group names/emails on the board and ask each group to save the other groups' emails to their contacts.

   c. If wi-fi is accessible outside the classroom, have groups walk outside and complete the following:

      - Open Google maps

      - Drop a pin into Google maps

      - Send their pin to the other groups via email

   d. If wi-fi is not accessible outside the classroom, have groups complete the following indoors:

      - Open google maps

      - Drop a pin into google maps

      - Send their pin to the other groups via email

Application Activity

1. Have the trainees turn to **Topic 2.3 Task 4** in their Trainee Manuals.

2. Have trainees form groups of 4 – 5 trainees each and distribute a mobile phone to each group. Have the groups read the following scenario:

   BB Company is selling organic vegetables to hotels in Kigali. One of the hotels asks you to travel to BB Company's headquarters and conduct field visits to ensure their vegetables are grown without pesticides. You know you will be offline while visiting their headquarters, so you prepare your mobile phone with the apps you will need.

3. Instruct trainees to make a list of apps they will need to download to prepare their phones for the visits.

4. Have groups share which apps they decided to download and explain why.

⭐ Points to Remember

- Each App has a purpose.

- Some Apps work offline and some do not – before expecting that an App will work offline, be sure to check that it does.

📋 Formative Assessment

Circle the best answer.

1. Which application is appropriate to send a message?
   a. Calendar
   b. Photos
   c. Maps
   d. Message

   Answer: D

2. When you want to see the location of any country, which application can you use?

   a. Calendar
   b. Photos
   c. Maps
   d. Message

   Answer: C

3. You may want to remember the date for doing any task, which application can help you?

   a. Reminders
   b. ibooks
   c. News
   d. Safari

   Answer: B

Task 1: Use a smartphone calculator to perform arithmetic operations.

Task 2: Take pictures for any prescribed events.

Task 3: Install PowerPoint from the App Store/Google Store.

ⓘ Further Information for the Trainer

1. https://www.independent.co.uk/life-style/gadgets-and-tech/news/google-maps-offline-areas-mode-a6832891.html
2. https: //www.quora.com/How-do-clock-work-in-Mobile
3. https://www.digitaltrends.com/mobile/how-to-drop-a-pin-in-google-maps/

Self-Reflection

1. Ask the trainees to re-take the self-assessment from the beginning of Unit 1. They should then fill in the table in the Trainee's Manual to identify their areas of strength, areas for improvement, and actions needed to improve.

2. Discuss the trainees' results with them. Identify any areas that are giving many trainees difficulty and plan to give additional support as needed (ex. Before you begin the next learning outcome, use class time to go through commonly identified difficult concepts).

Summative Assessment

Integrated situation	Resources

The Kigali Smartphone Trading Company, located in Kigali, Nyarugenge district, is receiving smartphone parts from a supplier for assembly. The company will then install all apps most users will need. The company's technician is sick when the order is received, so the company urgently needs a new technician to set up the phones for sale. As the technician, you must:
 	
 1. Install the SIM card
 2. If applicable, install a battery (not all models will allow you to install a new battery)
 3. Download from the App Store/Google Store a basic set of user programs, including:
     a. Camera
     b. Calculator
     c. Calendar
     d. Notes
     e. Reminders
     f. Maps
     g. Gmail
 4. Once you have completed your tasks, take a photo of the assembled mobile phone, and send an e-mail with attached photo listing the tasks you have completed.
 	
 The above tasks should be done in three hours.
	Equipment:
	 • SIM card
	
	 • Battery (if phone models allow for battery to be installed)
	
	 • Smartphone
	
	 Resources:
	 • Internet and access to App Store/Google Store

Task 1: Install SIM card and battery (if applicable)
Assessment Criteria: 1. Quality of Process: The trainee is able to effectively complete steps required to accomplish the task   2. Efficiency: The trainee manages time well to accomplish the task   3. Relevancy: The trainee responds to the task
Indicator 1: Tools, materials, and equipment are well-selected.   **Indicator 2: SIM card and battery are well-installed and smartphones are operational. Note: many phone models do not allow a user to install a new battery. If the phones used do not allow a battery install, skip this task.**

Checklist	Score	
	Yes	No
SIM card		
Smartphone		
Battery		
Steps to install SIM card		
Step 1: Power down your mobile phone		
Step 2: Make sure the card is the right size for phone.		
Step 3: Locate the card slot (on the side or back of phone)		
Step 4: Use card eject tool or small paperclip (if needed) to eject card and remove.		
Step 5: Place new SIM card in slot and close slot		
Step 6: Power on phone		
Step 7: Follow prompts to ensure card is installed		
Steps to install battery (may not apply to all phones)		
Step 1: Press and hold the power button until the menu pops up		
Step 2: Select Shut Down, then confirm you wish to shut the device down.		
Step 3: Wait for device to fully shut down.		
Step 4: Remove battery door, then battery.		
Step 5: Replace battery and door, then press and hold power button until screen lights up.		
Step 6: Press and hold the power button of your device until the menu pops up.		
Observation		

Task 2: Install applications

Assesment Criteria:		
1. Quality of Process: The trainee is able to effectively complete steps required to accomplish the task.		
2. Efficiency: The trainee manages time well to accomplish the task.		
3. Relevancy: The trainee responds to the task.		
Indicator: Required applications from App Store/Google Store is installed		
Checklist	**Score**	
Steps to install applications from App Store/Google Store	**Yes**	**No**
Step 1: Open App Store/Google Store		
Step 2: Search for app by typing name into search field		
Step 3: Select app and download		
Step 4: If prompted, select "accept."		
Step 5: Check that app is working. If app is not set up, complete all steps required to set up app (ex. create login, set up address) to install the application		
Observation		

Task 3: Take photo and send e-mail	
Assesment Criteria:	
1. Quality of Process: The trainee is able to effectively complete steps required to accomplish the task.	
2. Efficiency: The trainee manages time well to accomplish the task.	
3. Relevancy: The trainee responds to the task.	
Indicator 1: The photo is taken and sent through e-mail using a smartphone	
Indicator 2: Time is effectively managed	
Checklist	**Score**

Steps to take a photo with a smartphone	Yes	No
Step 1: Start the Camera app.		
Step 2: Ensure that the camera mode is set to single shot. The camera app shoots both still images and video. To snap a picture, you must choose single-shot mode.		
Step 3: Point the camera at the subject.		
Step 4: Touch the Shutter icon. The phone makes a noise when the picture is snapped.		
Steps to send an e-mail with help of smartphone		
Step 1: On phone, open the Gmail app.		
Step 2: Compose.		
Step 3: In the "To" field, add recipients. If you want, you can also add recipients in the "Cc" and "Bcc" fields.		
Step 4: Add a subject.		
Step 5: Click on paperclip to attach file to email.		
Step 6: Select "attach photo" and select photo.		
Step 7: Write your message.		
Step 8: Tap Send.		
✓ Observation		

Learning Unit 3: Use various ICT technologies in daily life

Learning Outcomes

By the end of the Learning Unit, trainees will be able to:

3.1   Utilize electronic systems to handle financial transactions based on their types

3.2   Use of emerging technologies in world of entertainment in accordance with required protocol

3.3   Use of online or ICT dependent public services as per applied rules and regulations

---

Learning Unit 3 Self-Assessment

1. Ask trainees to look at the illustration above, in their Trainee Manuals, and discuss what they see. What topics do they think this unit will include based on the illustration? After some brainstorming, share the main topics.

2. Ask trainees to fill out the self-assessment at the beginning of the unit in their Trainee Manuals. Explain that the purpose of the self-assessment is to become familiar with the topics in the unit and for them to see what they know or do not know at the beginning. At the end of the unit, they will do a self-reflection, which includes re-taking the self-assessment and identifying their strengths, areas that need improvement and actions to take. The self-assessment is not a test!

Learning Outcome 3.1: Utilize electronic systems to handle financial transactions based on their types

Objectives: By the end of the learning outcome, trainees will be able to:

a. Describe e-commerce and financial transactions
b. Use mobile money in money transaction (withdraw/deposit)
c. Use ATM card for money transactions

Time Required: 4 hours

Learning Methodology: Pair work, presentations, group discussion, individual practical exercises, field visits.

Materials Needed:

- Mobile phone
- Electronic money application
- Effective internet connection
- ATM cards and machines/bank
- Computers

Preparation:

- ❏ Prepare Smartphone with mobile money applications.
- ❏ Ensure you have an effective internet connection.
- ❏ Prepare ATM cards.
- ❏ Prepare for field visit to allow trainees to use ATM cards.

Cross Cutting Issues:

- ✓ Consider gender balance when forming groups
- ✓ When using mobile money, introduce financial issues

Prerequisites:

- ▸ Use of mobile apps
- ▸ Basic Knowledge on money transactions

Key Competencies:

Knowledge	Skills	Attitudes
1. Describe electronic funds transfer transactions.	1. Transfer electronic money.	a. Careful
2. Describe automated teller machine (ATM).	2. Use automated teller machine (ATM).	b. Methodical
3. Characterize credit cards and debit card.	3. Use Visa and Mastercard debit and credit cards.	c. Confident
4. Identify different types of money transfer services.	4. Use different types of money transfer services.	d. Careful

Steps:

Getting Started: What do we know and where are we going?

1. Ask trainees to look turn to **Topic 3.1 Task 1** in their Trainee Manuals. They should look at the pictures and find the differences between them. Ask trainees to raise their hands to answer once they have identified the differences. After a few have responded, clarify that one is paying with cash and one us paying with electronic money.

2. Ask trainees: What is electronic money?

3. Ask trainees to raise their hands to answer. As trainees respond, ask the rest of the class to pay attention to the responses and mention anything that was not included in the previous presentations on electronic money.

4. After discussion, clarify their misunderstandings, answer their questions, and ask them to turn to the table of knowledge, skills, and attitudes.

5. Inform the trainees what they will gain from this learning outcome on how to effectively use electronic systems to handle financial transactions.

Problem Solving Activity

1. Before class, print the following questions and prompts on paper:
   a. What is a business transaction?
   b. How is an automated teller machine (ATM) used?

    c. How is mobile money used?

    d. List mobile money services commonly used in Rwanda.

2. Ask trainees to turn to **Topic 3.1 Task 2** in their Trainee Manuals. Form small groups of trainees and distribute one question to each group. Have them select a reporter who will report to the class on their conversations. It should be someone who doesn't speak often.

3. Allow time to discuss the responses within their groups.

4. After enough time has passed, ask each group to present their findings to the rest of trainees. Encourage the class to ask any questions they may have.

5. Clarify any misunderstandings and respond to questions from the class.

Answer:

Mobile Services in Rwanda		
Telecom Operator	Primary Activity	Website
Airtel (now merged with Tigo)	Mobile	www.africa.airtel.com/wps/wcm/connect/africaairte
MTN RwandaCell	Mobile	www.mtn.co.rw
RwandaTel	Fixed	www.rwandatel.rw
Tigo (now merged with		

 Guided Practice Activity

1. Ask trainees to turn to **Topic 3.1 Task 3** in their Trainee Manuals.

2. Place trainees into small groups and provide each group with a smartphone that has a mobile money application installed.

3. Ask trainees to work in groups to discuss the process for completing the following tasks (Note: they should not complete the transactions listed below, but should talk through the process):

    a. Send money to a recipient

    b. Withdraw money

    c. Buy airtime

    d. Pay a water bill

    e. Change your mobile money PIN

    f. Check your mobile money balance

4. Walk around while trainees are discussing these tasks and help them as needed. After everyone has completed the tasks, review the list, and ask trainees to raise their hands whenever you call out a task they found challenging.

5. **For** each task that more than one student found challenging, ask for one volunteer from the class to explain what they did for the rest of the class.

6. **Clarify** any misunderstandings and answer any remaining questions.

7. **Before** the next class, arrange to conduct a visit with a local bank. If the bank provides guided tours, particularly tours that include demonstrating use of ATMs, arrange for the class to receive the tour.

8. **Instruct** the class that they will be going to visit a bank to learn how to use ATMs. Before they go, they will review information that will help them understand what they will learn on the tour.

9. **Ask** trainees to turn to **Topic 3.1 Task 3** in their Trainee Manuals, and review **3.1 Key Facts: Withdraw Money Using an ATM Card.**

10. Show trainees the following video:
    https://www.youtube.com/watch?v=ipQ6CPKQoUI

11. Once the class has reviewed the Key Facts, and watched the video, walk with them to the bank.

12. At the bank, have the class go on a guided tour (if possible). If the bank does not have a tour but is open to hosting the trainees, walk the trainees around the bank. Stop at the ATM and allow trainees to touch the ATM and push buttons on the ATM.

13. At the end of the trip to the bank, ask trainees if they have any questions. Answer any questions they may have.

Application Activity

1. Ask trainees to turn to **Topic 3.1 Task 4** and read the following scenario:

   Dairy Milk, which is a small company in Butamwa, buys milk from local people (producers) and distributes it to buyers. The local people are paid by mobile money and some of them access their money using ATM cards. The accountant of the dairy is now on leave. You are requested by Dairy Milk to support the company in performing the following tasks:

   a. Register a new user.
   b. Pay the company's electricity fees.
   c. Register a producer for mobile money.

    d. Deposit money in the new producer's account.

    e. Check the company's balance.

⭐ Points to Remember

- When you are withdrawing or depositing money using an ATM card or mobile money services make sure that you keep your PIN number secret and that there is no person or camera that can view your PIN number.

- Pay attention when you are sending money through mobile money services and ensure that you are sending money to the correct number of the recipient. You will not be able to reclaim your money if you send it to the wrong account.

- Change your pin immediately if you think the number may have been compromised.

📋✓ Formative Assessment

Circle the best answer:

1. Which of the following options can be completed only with electronic money?

    a. Pay by check

    b. Pay by cash

    c. Pay utility (electricity or water) bill

    d. Pay by mobile money

    e. Both c and d

    Answer: E

2. Mobile money can be used to:

    a. Transfer funds

    b. Open a bank account

    c. Deposit funds

    d. Both a and c

    e. None of the above

    Answer: A and C

3. Aline is planning to withdraw cash from an ATM. Her friend wants to go with her. What information should Aline keep secret from her friend?

    Answer: ATM PIN number

ⓘ Further Information for the Trainer

1. https://unctad.org/en/PublicationsLibrary/dtlstict2012d2_en.pdf

2. www.bcg.com/publications/2019/how-mobile-money-agents-can-expand-financial-inclusion.aspx

3. https://www.elearnmarkets.com/blog/how-to-withdraw-money-from-atm-machine/

Learning Outcome 3.2: Use of emerging technologies in the world

Objectives: By the end of the learning outcome, trainees will be able to:

a. Describe entertainment technology
b. Upload films, videos, music, and photos
c. Burn CD/DVD
d. Edit video using Windows DVD maker

Time Required: 4 hours

Learning Methodology: Group work, practical exercises, and group discussions

Materials Needed:

- Computers, internet
- Smartphones
- CD/DVD
- Movie Maker software
- DVDs prepped with music, photos, and editable movies

Preparation:
- ❑ Prepare computer lab.
- ❑ Have effective internet connection available.

Cross Cutting Issues:
- ✓ Consider gender balance when forming groups

Prerequisites:
- ▸ Basic knowledge of social media
- ▸ Basic skills of using computer applications, specifically social media applications

Key Competencies:

Knowledge	Skills	Attitudes
1. Describe entertainment technology.	1. Utilizing entertainment software to be able to burn CDs.	1. Attention to detail
2. Know the steps to upload videos, photos, and music.	2. Uploading videos, photos, and music.	2. Disciplined
3. Describe video editing software.	3. Use Movie Maker.	3. Methodical

⇄ Getting Started: What do we know and where are we going?

1. Ask trainees to turn to **Topic 3.2 Task 1** in their Trainee Manuals and to review the picture. Ask trainees to share their thoughts on:

    a. What they see in the picture
    b. What is entertainment technology?
    c. What role does entertainment technology play in our daily lives?

2. Ask trainees to share their responses with the class. Address any questions and clarify any errors in their responses.

3. Introduce the learning outcome and ask trainees to turn to the table of knowledge, skills, and attitudes in their Trainee Manuals.

🔍 Problem Solving Activity

1. Before the class, print the lists below and cut out each line. Be sure to print enough copies so that each group in the class can have a copy of all the items in both lists.

2. Put trainees into small groups and have them turn to **Topic 3.2 Task 2** in their Trainee Manuals.

3. Distribute the printed and cut out lists of <u>Online and Social Media</u> and <u>Type of Online Content</u> to each group.

4. Groups should match the content to the type of social media, keeping in mind that some content is common for different platforms.

5. Once the groups have completed the tasks, have all groups walk around the room to review the way other groups organized their lists.

6. Then, give each group 5 minutes to update their lists.

7. While the trainees are walking around, survey what solutions the groups came up with. Be sure to address any misunderstandings with the larger group before ending the class.

<u>Online and Social Media</u> (print items in this list so they are large/bold)

Twitter   Facebook   Instagram   YouTube

Blogs   Discussion Forums   Reviews

<u>Type of Online Content</u> (print items in this list so they are smaller so that trainees can list them under the headings above. Please print labels as many times as they are listed).

Sharing videos   Sharing videos   Sharing videos
Sharing videos   Sharing videos

Writing short opinions   Writing short opinions
Writing short opinions   Writing short opinions

Communicating with friends and family   Communicating with friends and family
Communicating with friends and family

Guided Practice Activity

Topic 3.2 Task 3

1. Bring trainees to a computer lab.

2. Place trainees into small groups and have them turn to **Topic 3.2 Task 3**. Distribute a smartphone to each group.

3. Have trainees review **3.2 Key Facts** together. Tell trainees that they will have a chance to practice uploading videos to YouTube and burning them onto a CD/DVD.

4. Once trainees have reviewed **3.2 Key Facts**, have them use the smartphone to record a short video. Ask the class what the topic of the video should be (provide suggestions such as: pretend to be a news anchor, tell a good joke, etc.). As the trainer, decide which of the class' suggestions makes sense and use that as the theme for all the videos.

5. Tell trainees that their video should be no longer than 30 seconds. Give them 15 – 20 minutes to plan and record the video.

6. Once it is complete, ask them to refer to **3.2 Key Facts** again and follow the instructions to upload the video.

7. Ask them to apply what they learned from **Learning Unit 1** and save the video file onto the computer desktop and then burn it onto a CD/DVD.

📋 Topic 3.2 Task 4

1. Ensure that all computers in the computer lab have Movie Maker installed (free Microsoft software for video editing).

2. Bring trainees to the lab and place them in small groups. Have them turn to **Topic 3.2 Task 4** in their Trainee Manuals.

3. Provide each group with a DVD that has an editable video clip. Have each group refer to **3.3 Key Facts** and complete the following tasks:
   a. Import a video into Movie Maker
   b. Add pictures
   c. Add an audio clip
   d. Insert a narration
   e. Change the duration of photo clip length time
   f. Save the project

4. Move around groups and follow how they are performing the task and ask them about the challenges they encounter. After the work, ask volunteer groups to present their work to the rest of the class.

5. Tell students that much more sophisticated software exists for editing videos. The Adobe Suite (Photoshop, Illustrator, and InDesign) are a paid professional set of software applications. If trainees are interested in learning how these products work, they should look for specialized classes.

Application activity

1. Before this activity, prepare DVDs with an editable video and photos and include a music file.

2. Bring trainees to a computer lab and group trainees in small groups. Have trainees turn to **Topic 3.2 Task 5** in their Trainee Manuals. Trainees should read the scenario below and then complete the tasks:

   Peter is a graphic designer in Nyamirambo and has a client who wants to have a video on DVD to show at a wedding. The client already has the video and photos, but they would like Peter to add text with their wedding date and wedding location as well as background music to the video.

   To help out Peter, trainees should:
   a. Import the video into movie maker
   b. Add the selected pictures
   c. Add the correct background music
   d. Insert text with the wedding date and location
   e. Save the project

 Points to Remember

- Different types of social media platforms are used for sharing different online content.

- Video editing software allows for changing and producing video content.

Formative Assessment

1. Choose the correct steps to upload a video (hint: there may be more than one):
   a. Sign into a YouTube channel.
   b. Record a new video or select an existing one to upload.
   c. Change the column colour.
   d. Choose music from a YouTube file.
   Answer: A and B

2. The **last** step to uploading a video on Youtube is to:
   a. Tap the camera at the top of the home page from any navigation page.
   b. Record a new video or select an existing one to upload.

c. Tap the video camera icon and begin recording.

d. Tap Upload.

Answer: D

ⓘ Further Information for the Trainer

1. http://beta.mtn.co.ug/Downloads/Mobile%20Money%20Agent%20training%20manual.pdf

2. https://www.google.com/search?source=hp&ei=zfIqXabaCo2ckwX21ZbABA&q=withdraw+using+credit+card+steps+&oq=withdraw+using+credit+card+steps+&gs_l=psy-ab.3...81398.98225..98783...0.0..0.0.0.......0....1..gws-wiz.....0.

3. https://www.google.com/search?rlz=1C1NHXL_enRW784RW784&ei=nvMqXdEYyK2TBenai7AI&q=upload+video+on+youtube&oq=uplaod+video+on+youtube+&gs_l=psy-ab.12...0.0..68635...0.0..0.36838.58983.9-3......0......gws-wiz.joUfoCWb1z0

Learning Outcome 3.3: Use of online or ICT dependent public services as per applied rules and regulations

Objectives: By the end of the learning outcome, trainees will be able to:
a. Use online services
b. Use different online management information systems

Time Required: 2 hours

Learning Methodology: Group discussions, brainstorming, practical exercises, and presentations

Materials Needed:
- Flip-chart paper and markers
- Computers
- Effective internet connection

Preparation:
- ❑ Prepare computer lab.
- ❑ Ensure effective internet connection.

Cross Cutting Issues:
- ✓ When forming groups, consider gender balance
- ✓ When assigning tasks to the learners, consider inclusiveness

Prerequisites:
- ▸ Basic knowledge of computer applications
- ▸ Basic knowledge of online services and social medias

Key Competencies:

Knowledge	Skills	Attitudes
1. Describe online service applications.	1. Use online service application.	1. Teamwork
2. Identify e-learning education opportunities.	2. Use Irembo application.	2. Innovative
3. Describe management information systems (MIS).	3. Use management information systems (MIS).	3. Motivated

⟳ Getting Started: What do we know and where are we going?

1. Ask trainees to discuss the following questions:
    a. What are public online services?
    b. What are they used for?

2. During discussion, clarify any misunderstandings.

3. Introduce the learning outcome and have trainees turn to the table of knowledge, skills, and attitudes in their Trainee Manual.

🔍 Problem Solving Activity

1. Bring trainees to a computer lab. Ask trainees to turn to **Topic 3.3 Task 2** in their Trainee Manuals. Put trainees in small groups.

2. Ask half of the trainees to open a browser and go to irembo.gov.rw and the other half to open a browser and go to rra.gov.rw. Instruct trainees to review **3.4 Key Facts**.

3. Ask each group to determine what types of services are available on each website.

4. After completing the task, ask each group to present their findings to the rest of class. As groups present, write their responses on a flipchart/chalkboard.

5. Answer any questions trainees may have and address any key information that was identified in the activity, but trainees didn't question, to ensure they're informed.

Guided Practice Activity

1. Bring trainees to a computer lab. Ask trainees to turn to **Topic 3.3 Task 3** in their Trainee Manuals. Put trainees in small groups.

2. Ask each group to visit irembo.gov.rw and complete the tasks below. Tell groups **not** to submit any online forms through Irembo:
   a. Apply for a Birth certificate
   b. Apply for a Certificate of Celibacy

3. Check in with groups around the classroom. If groups face similar challenges completing the task, offer advice to all trainees on how to best complete the task.

Application Activity

1. Bring trainees to a computer lab and put them into small groups.

2. Have trainees turn to **Topic 3.3 Task 4** in their Trainee Manuals.

3. Have trainees read the following scenario and complete the tasks below:

   Your friend Kalisa would like you to help him to find a TVET school near his house in Kamonyi. He would like to find a program in agriculture and food processing and then learn more about the curriculum offered for both agriculture and food processing.

   Using the TVET MIS, complete the following tasks:

   a. Using the "schools" button, search for schools in Kamonyi that offer agriculture and food processing courses.
   b. Using the "curriculum" button, review the agriculture and food processing curriculum.
   c. Make a recommendation to your class for what school Kalisa should attend and what courses he should take.

⭐ Points to Remember

> • Many services that the public requires are available online through irembo.gov.rw. rra.gov.rw, rdb.rw/e-services/.
>
> • Rwanda Polytechnic's TVET MIS provides useful information for TVET students at https://mis.rp.ac.rw/.
>
> • When looking for a public service, it is useful to check online to see if you can access the service you require through these e-service platforms.

📝 Formative Assessment

Answer the questions below: True or False

1. The government provides many e-services through the Irembo platform.

2. The TVET MIS includes forms such as application for a birth certificate.

3. The TVET MIS includes search information for TVET schools and IPRCs.

4. The Irembo platform allows for online payments through mobile money.

Answers:
1. T
2. F
3. T
4. T

Summative Assessment

Integrated situation	Resources
Kamara company located in Kayonza, Eastern Province, is producing banana juice. The company is reviewing the strategies it uses for advertising company products, and the employee who is in charge of marketing advised the company to use online platforms for marketing and also for completing business requirements, including government applications and other documents. You are hired by the marketing department to complete the following tasks: **Task 1:** Create a short advertisement for banana products by finding images or videos of bananas, finding music, and using video editing software to edit the video together. **Task 2:** Use an online service to request a Motor Vehicle Inspection Appointment. **Task 3:** Use mobile money to pay the employees. The person who will be hired by the company should pass an exam for the above tasks and the exam should done in 4 hours.	**Tools:** • Irembo application • Mobile money application • Internet • Movie Maker **Equipment:** • Smartphone • Computer • CD of music that can be used as background music

Task 1: visit different websites, download videos and photos, copy music from CD, and use Movie Maker to create a video advertisement.

Assessment Criteria:

1. Quality of Process: The trainee is able to effectively complete steps required to accomplish the task

2. Efficiency: The trainee manages time well to accomplish the task

3. Relevancy: The trainee responds to the task

Indicator 1: Videos, photos, and music are selected

Checklist	Score	
	Yes	**No**
✓ Internet		

✓ YouTube application		
✓ Computer		
✓ Smartphone		
✓ CD with music files		
Steps to select videos, photos, and music (Step 1 – 3 can be completed in any order)		
✓ Step 1: Insert CD in CD/DVD drive and open/listen to contents		
✓ Step 2: Search for banana videos/photos online		
✓ Step 3: Copy music files/save video and photo files to computer		
✓ Step 4: Open Movie Maker		
✓ Step 5: Import music, videos, photos to Movie Maker		
Edit video advertisement		
✓ Step 1: Select videos and photos for advertisement		
✓ Step 2: Add background audio		
✓ Step 3: (optional) Add text for the company name		
✓ Step 4: Save video to computer		
Observation		

Task2: Use online service such as Irembo website to request Motor Vehicle Inspection Appointment
Assessment Criteria:
1. Quality of Process: The trainee is able to effectively complete steps required to accomplish the task

	Score	
	Yes	No
2. Efficiency: The trainee manages time well to accomplish the task		
3. Relevancy: The trainee responds to the task		

Indicator 1: Requesting a motor vehicle inspection appointment is well done

Indicator 2: The appointment for vehicle inspection is given

Indicator 3: The time is well-managed

Checklist	Score	
	Yes	No
Step to request vehicle inspection appointment through Irembo		
✓ Step 1: Visit Irembo platform and in the service menu choose "Application for Motor Vehicle Inspection Appointment"		
✓ Step 2: Select applicant type		
✓ Step3: Select the type of visit and fill the form		
✓ Step 4: Submit		
Observation		

Task 3: Use mobile money to pay employees		
Assessment Criteria:		
1. Quality of Process: The trainee is able to effectively complete steps required to accomplish the task		
2. Efficiency: The trainee manages time well to accomplish the task		
3. Relevancy: The trainee responds to the task		
Indicator 1 Employees are paid on time using mobile money		

Checklist	Score	
	Yes	No
Steps for mobile money transaction		
1. Go to your SIM menu		

2. Select Mobile Money.		
3. Select Transfer Money		
4. Select either a Mobile or Mobile User		
5. Enter recipient's number		
6. Enter amount to transfer		
7. Enter Mobile Money pin to complete the transaction		
Observation		

Learning Unit 4: Maintain ICT equipment, tools, and consumables:

Learning Outcomes
By the end of the Learning Unit, trainees will be able to:
4.1   Clean and maintain ICT equipment and tools according to manufacturer's specifications and organizational manuals
4.2   Maintain and replace consumables and supplies according to organizational procedures

Learning Unit 4 Self-Assessment

1. Ask trainees to look at the illustration in their Trainee Manuals and discuss what they see. What topics do they think this unit will include based on the illustration? After some brainstorming share the main topics.

2. Ask trainees to fill out the self-assessment in their Trainee Manuals. Explain that the purpose of the self-assessment is to become familiar with the topics in the unit and for them to see what they know or do not know. At the end of the unit, they will do a self-reflection, which includes re-taking the self-assessment and identifying their strengths, areas that need improvement and actions to take. The self-assessment is not a test!

Learning Outcome 4.1: Clean and maintain ICT equipment & tools according to manufacturer's specifications and manuals

Objectives: By the end of the learning outcome, trainees will be able to:

a. Identify principals
b. Use maintenance tools
c. Describe Software updates
d. Describe Software licenses
e. Perform diagnostic tests using appropriate diagnostic tools

Time Required: 2 hours

Learning Methodology: Pair work, trainee presentations, group discussions, and group work

Materials Needed:

- Computer and accessories
- Computer protection software
- Maintenance guidebook
- Hardware tool kit: Needle nose pliers, wire cutters, flashlight, wire stripper, crimper, punch down tool
- Cleaning tools: Soft cloth, compressed air canister, detergent liquid
- Cable ties
- Part organizer
- Diagnostic tools: Digital multi-meter, loopback adapter, antistatic wrist-strap map

Preparation:

❑ Put necessary devices in computer lab for paired group work.
❑ Organise learners in pairs and assign tasks and activities.

Cross Cutting Issues:

✓ When forming groups, consider gender balance
✓ When cutting cables, remind the participants to remove the waste for environmental safety

Prerequisites:

▸ Basic computer hardware knowledge
▸ Basic knowledge of electronic devices

Key Competencies:

Knowledge	Skills	Attitudes
1. Describe software updates.	1. Update antivirus software.	1. Respectful
2. Identify maintenance principals.	2. Apply curative and preventive maintenance.	2. Methodical
3. Describe software licensing.	3. Purchase an antivirus software online.	3. Self-confident

Steps:

Getting Started: What do we know and where are we going?

1. Put trainees into small groups.

2. Ask trainees to turn to **Topic 4.1 Task 1** in their Trainee Manuals.

3. Inform trainees that the picture is not reflective of the size of modern computers, but that it does place an emphasis on a person performing an important task.

4. Ask the trainees to brainstorm answers to the following questions:
   a. What type of work could the person be doing?
   b. How does it relate to the topic?
   c. What is maintenance (in general)?
   d. What kind of maintenance might be required for ICT equipment?

5. After the groups have time to discuss, select some volunteers to present their findings to the rest of class. Ask the class to raise their hands if they would like to contribute additional ideas to the brainstorm.

6. Clarify any misunderstandings the class has and welcome any and all questions.

7. Introduce the learning outcome and have learners turn to the table of knowledge, skills, and attitudes.

Problem Solving Activity

1. Bring trainees to a computer lab and ask them to turn to **Topic 4.1 Task 2** in their Trainee Manuals.

2. Have them review **4.1 Key Facts** and ask if they have any questions about types of maintenance.

3. Explain them that their task is to fill out the table in their Trainee Manuals to create their own guidebook for cleaning a computer. Provide trainees with detergent liquids, soft (microfiber) cloths, and compressed air dusters. Have them complete the following tasks:
   a. Clean computer, both inside and outside
   b. Clean keyboard
   c. Clean mouse
   d. Clean Router/ Switches

4. Remind the trainees that they should be filling out the maintenance guidebook as they go through the tasks.

5. Move around class, helping trainees if they are having trouble completing the tasks or filling out the guidebooks.

6. At the end of the class, ask trainees if they have any questions.

7. Clarify any misunderstandings

 Guided Practice Activity

1. Bring trainees to a computer lab and ask them to turn to **Topic 4.1 Task 3** in their Trainee Manuals.

2. Have them review **4.2 Key Facts** and ask if they have any questions on types of maintenance or how to use the tools.

3. Demonstrate how to use a digital multi-meter tool, a loopback adaptor, and an antistatic wrist strap/mat.

4. Explain to them that their task is to continue to develop their maintenance guidebooks.

5. Place trainees in pairs. They should continue to add to their guidebooks (the table in **Topic 4.2 Task 2** while they complete the following tasks:
   a. Open the case of a computer (using an antistatic wrist strap/mat)!
   b. Measure the voltage of a circuit using the digital multimeter tool.
   c. Use the loopback adaptor to test the functionality of the computer ports.

6. Walk around the class helping trainees who are having trouble completing the tasks or filling out the guidebook.

7. At the end of the class, ask the trainees if they have any questions.

8. Clarify any misunderstandings and welcome any and all questions.

![gear icon] **Application Activity**

1. Bring trainees to a computer lab and have them open to **Topic 4.1 Task 4** in their Trainee Manuals.

2. Have them read the scenario below, and work in pairs to complete the tasks:

   You are a computer technician and have been hired to provide routine maintenance at a computer lab. On your first day of work, you learn that the computer lab was operating without a computer technician for a long time. That means you need to think about the preventative, predictive, and curative maintenance you might need to do to ensure all computers are functioning. You decide to:

   a. Update antivirus software.
   b. Clean computers and peripherals.
   c. Clean inside all computers.
   d. Test that all computers are functioning as they should be, using a digital multi-meter tool and a loopback adapter.

![star icon] **Points to Remember**

- It is critical to minimize ESD while working on computers. To do this:
  - Use ESD tools whenever possible.

  - Never use a standard vacuum cleaner on a computer.

  - Turn off computers and disconnect all cables before cleaning computers.

![assessment icon] **Formative Assessment**

Choose the correct answer:

1. Which response below is a type of computer maintenance?
   a. Curative maintenance
   b. Electrostatic Discharge
   c. General precautions
   d. Power connectivity
   Answer: A

2. Choose the correct word to fill in the blank space below:
   a. Programming
   b. Software

    c. Illustrator

    d. Photoshop

    e. Antivirus

_____ Software is a program or set of programs that are designed to prevent, search, detect, and remove software viruses as well as other malicious software.

Answer: E - Antivirus

3. For the following set of questions choose if the following are either: True or false
   a. Using a compressor air canister is amongst the list of computer cleaning equipment. **True**
   b. Computers are used to clean keyboards. **False**
   c. The first step to clean a computer is to power off the computer. **True**
   d. Preparing tools, materials, and equipment is the last step of computer cleaning. **False**
   e. Before cleaning a computer, plug all accessories into the computer. **False**
   f. Updating antivirus software is preventative maintenance. **True**

ⓘ Further Information for the Trainer

1. https://www.remosoftware.com/info/common-pc-hard-ware-problems
2. https://www.google.com/search?source=hp&ei=dTgrXfPyOtGXsAf-vJGwDw&q=computer+cleaning+step+by+step&oq=computer+cleaning+&gs_l=psy-ab.1.0.35i39j0i203l9.2366.7709..10102...1.0..0.1059.5516.3-5j3j2j0j1......0....1..gws-wiz.....10..0j0i20i263.NzHWu3NK3qw

Learning Outcome 4.2: Maintain and replace consumables and supplies according to organizational procedures

Objectives: By the end of the learning outcome, trainees will be able to:
a. Apply maintenance precautions
b. Replace consumables and supplies in right way

Time Required: 2 hours

Learning Methodology: Group work, practical exercises, group discussions

Materials Needed:
- Flip-chart paper and markers / blackboard and chalk
- Drivers
- Computers
- Printers
- Copiers and UPS
- Laptop
- Projector
- Toner
- Printer cartridge

Preparation:
- ❑ Prepare a computer lab.
- ❑ Ensure you have an effective internet connection.
- ❑ Prepare working drivers, printers, a copier, a projector, and a UPS.

Cross Cutting Issues:
- ✓ When giving out roles or forming groups, ensure that all trainees are given equal opportunities
- ✓ Remember to introduce gender balance when forming groups

Prerequisites:
- ▶ Basic computer maintenance

Key Competencies:

Knowledge	Skills	Attitudes
1. Identify external computer peripherals.	1. Use computer accessories.	1. 1.Detail Oriented
2. Describe external peripheral consumables.	2. Replace cartridges for appropriate equipment.	2. Innovative
3. Describe computer drivers.	3. Install computer drivers.	3. Motivated

↩ Getting Started: What do we know and where are we going?

1. Ask trainees to turn to **Topic 4.2 Task 1** in their Trainee Manuals.

2. Have them discuss the following questions and prompts:
   a. What is a peripheral?
   b. What are printer consumables?
   c. List different photocopier consumables.

3. After the discussions, clarify their responses and address any misunderstandings about printer and copier consumables.

4. Introduce the learning outcome and have learners turn to the table of knowledge, skills, and attitudes.

🔍 Problem Solving Activity

1. Have the trainees turn to **Topic 4.2 Task 2** in their Trainee Manuals.

2. Put trainees into small groups and have them brainstorm a list of computer peripherals and their functions (Note – move the class away from the types of input/output devices discussed in Learning Unit 1, and instead, focus trainees on photocopiers, projectors, and other similar devices). Trainees should:
   a. Brainstorm a list of computer peripherals.
   b. Brainstorm the functions of the computer peripherals they listed.
   c. Describe which (if any) of the items are consumables.

3. After discussion, have some trainees present their answers to the rest of the class.

4. Write their responses on the whiteboard or chalkboard.

Note: Some peripherals to consider – photocopiers and photocopier paper, scanner, projector, and Uninterruptible Power Supply (UPS).

Guided Practice Activity

1. Take the trainees in computer lab and put them into small groups.

2. Have trainees turn to **Topic 4.2 Task 3** in their Trainee Manuals.

3. Have trainees work together to complete the following tasks:
    a. Use a printer to print 2 copies of a document.
    b. Connect a laptop to a projector.
    c. Use a photocopier to photocopy two copies.
    d. Install a printer driver.
    e. Replace the toner and paper on the photocopier.

Application Activity

1. Have trainees **Topic 4.2 Task 4** in their Trainee Manuals.

2. Working in pairs, they should read the scenario below and complete the tasks:

    The Head of Education of a secondary school has been called by the Director of Education to attend a meeting. The Director of Education asked The Head of Education to print two copies and make photocopies of a document to be used in the meeting. When the Head of Education was starting to print, an error message displayed on the computer screen.

    You are called to complete the following tasks:
    a. Identify the problem.
    b. Install a printer driver.
    c. Replace the old cartridge with a new one.
    d. Print two copies.
    e. Photocopy two copies.

Points to Remember

- When changing anything on a printer or photocopier, follow the prompts.

- Make sure to keep extra toner, printer cartridges, and paper stocked.

Formative Assessment

1. The following devices are peripherals: (true/false)
    a. Printer /**true**
    b. Scanner/**true**
    c. Projector/**true**
    d. Photocopier/**true**
    e. UPS/**true**
    f. System unit/**false**
    g. Microprocessor /**false**
    h. Internal hard disk /**false**

2. Cartridges are a type of printer consumable (true/false)

    Answer: True

3. Fill the correct word in the sentence below:
    a. Photocopier
    b. UPS
    c. Software driver
    d. System unit
    e. Microprocessor

4. …………………A program that determines how a computer will communicate with a peripheral device.

    Answer: C - software driver

Further Information for the Trainer

1. https://support.brother.com/g/b/faqend.aspx?c=us&lang=en&prod=hll5200dw_us_eu_as&faqid=faq00000065_500
2. https://m.wikihow.com/Print-a-Document

![Self-Reflection icon] **Self-Reflection**

1. Ask the trainees to re-take the self-assessment from the beginning of Unit 4. They should then fill in the table in the Trainee's Manual to identify their areas of strength, areas for improvement, and actions needed to improve.

2. Discuss the trainees' results with them. Identify any areas that are giving many trainees difficulty and plan to give additional support as needed (ex. Before you begin the next learning outcome, use class time to go through commonly identified difficult concepts).

Summative Assessment

Integrated situation	Resources
Ubuzima bwiza Training Center, in Kimisagara Kigali City, trains people on gender inclusivity. The Center's photocopier and printer have not been working properly and this is preventing the Center from enrolling trainees. The Center Director is seeking an ICT technician to support the company in handling this issue. The technician will be assigned the following tasks : **Task 1:** Replace the printer's ink cartridge. **Task 2:** Print two copies of a document to confirm the functionality of printer. **Task 3:** Replace the photocopier toner cartridge. **Task 4:** Clean the printer, photocopier, keyboard, computer, and mouse.	**Tools:** • Toolkit **Equipment:** • Computer • Printer **Materials** • Cartridge • Compressed air • Microfiber cloths • Cleaner • Ink cartridge • Toner • ESD Devices • Optional: brushes for printer/toner

Task1: Replace the printer's ink cartridge
Assessment Criteria: 1. Quality of Process: The trainee is able to effectively complete steps required to accomplish the task.   2. Efficiency: The trainee manages time well to accomplish the task.   3. Relevancy: The trainee responds to the task.

Indicator 1: Ink cartridge is replaced		
Checklist	**Score**	
	Yes	**No**
✓ Printer		
✓ Photocopier		
✓ Computer		
✓ Cartridge		
✓ Mouse		
✓ Keyboard		
✓ Toner		
✓ Microfiber cloths		
✓ Compressed air		
✓ ESD Devices		
✓ Optional: brushes for cleaning toner, printer, toner vacuum		
Steps to replace ink cartridge		
Step1: The trainee reviews the prompts on the screen		
Step 2: The top cover of the printer is opened		
Step 3: The ink cartridge is removed		
Step 4: The protective tape is removed from the ink cartridge		
Step 5: The cover is closed		
Step 6: The trainee tests the cartridge		
Observation		

Task2: Print two copies of a document to confirm the functionality of printer
Assessment Criteria:

	Score	
Checklist		
	Yes	**No**
1. Quality of Process: The trainee is able to effectively complete steps required to accomplish the task 2. Efficiency: The trainee manages time well to accomplish the task 3. Relevancy: The trainee responds to the task		
Indicator 2: Copies are well printed		
Checklist		
Steps to print a document		
✓ Connect printer		
✓ Open Start		
✓ Open File Explorer		
✓ Go to the document that you want to print		
✓ Select the document		
✓ Click the Share tab		
✓ Click Print		
✓ Select your printer		
✓ Select a number of copies.		
✓ Edit other print settings if need be , such as orientation, color and number of sides		
✓ Click Print		
Checklist		

Task3: Replace the Photocopier Toner Cartridge
Assessment Criteria:
1. Quality of Process: The trainee is able to effectively complete steps required to accomplish the task.

2. Efficiency: The trainee manages time well to accomplish the task. 3. Relevancy: The trainee responds to the task.		
Indicator2: Toner cartridge is well replaced		
Checklist	**Score**	
	Yes	**No**
Steps to replace a Toner cartridge		
✓ Photocopier is turned on		
✓ The front cover is opened		
✓ The toner cartridge is removed from the machine		
✓ The old toner cartridge is taken out of the drum unit		
✓ The new toner cartridge Unpacked		
✓ The protective cover is removed		
✓ The new toner cartridge is put firmly into the drum unit		
✓ Corona wire is cleaned inside the drum unit		
✓ The toner cartridge is installed and drum unit is placed back into the machine		
Observation		

Task4: Clean printer, photocopier, keyboard, computer and mouse		
Assessment Criteria: 1. Quality of Process: The trainee is able to effectively complete steps required to accomplish the task. 2. Efficiency: The trainee manages time well to accomplish the task. 3. Relevancy: The trainee responds to the task.		
Indicator 1: Clean the Printer, photocopier, keyboard, computer and mouse		
Checklist	**Score**	

	Yes	No
Steps to clean printer		
✓ Turn the printer off, unplug it, and allow it to cool down before you begin		
✓ Remove the internal paper trays		
✓ Remove the toner cartridge and place it on a piece of clean paper		
✓ Clean inside the toner cavity with a dry, lint-free cloth (microfiber) and, if provided, brush		
✓ Clean the printer mirror gently. Don't touch the mirror if a brush isn't provided		
✓ Wipe away dust and spilled toner. Remove paper fragments		
✓ Clean the rollers, but don't touch the transfer (sponge) roller		
Steps to clean the Keyboard		
✓ Unplug the keyboard		
✓ Use compressed air to clean between all the keys		
✓ Shake the keyboard upside down		
Steps to clean mouse		
✓ Unplug the mouse		
✓ Clean the buttons		
✓ Clean the lens		
✓ Clean mouse pad		
Steps to clean computer		
✓ Prepare tools including ESD devices		
✓ Set up an erea where you can blow dust		
✓ Power down the computer		
✓ Unplug all of the peripherals		
✓ Set the computer on its side on antistatic mat OR place antistatic wrist strap on wrist		

✓ Remove the side panel		
✓ Use the compressed air to blow dust out of crevices		
✓ Clean the fans with the vacuum and alcohol		
✓ Dust all of the grates		
Steps to clean photocopier		
✓ Clean the surfaces by wiping them down with an anti-static cleaner.		
✓ Clean the drum of toner and paper particles		
✓ Clean the fuser		
✓ Vacuum the paper and toner reception areas with a toner vacuum (if provided).		
✓ Clean the surfaces by wiping them down with an anti-static cleaner.		
✓ Clean the drum of toner and paper particles by brushing.		
Observation		

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