Federal Democratic Republic of Ethiopia Ministry of Education

ISBN

PRICE

INFORMATION TECHNOLOGY TEACHER'S GUIDE GRADE 8

Federal Democratic Republic of Ethiopia Ministry of Education

INFORMATION TECHNOLOGY

TEACHER'S GUIDE

GRADE 8



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FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
MINISTRY OF EDUCATION

INFORMATION TECHNOLOGY

TEACHER'S GUIDE

GRADE 8

WRITERS
Chala Diriba (Assistant Professor)
Workineh Tesema (Assistant Professor)

LANGUAGE EDITOR
Lemma Kassaye (PhD)

CONTENT EDITOR
Mamo Fideno (MSc.)

BOOK DESIGNER
Semeon Tiruneh (MSc.)

INSTRUCTIONAL DESIGN
Mehadi Abdo (MA, MPhil, Assistant Professor)

ILLUSTRATOR
Umer Nuri (MSc.)

Acknowledgements

The development, printing and distribution of this student textbook has been funded through the Ministry of Education (MoE), which aims to improve the quality of education for Grades 1-12 students in government schools throughout Ethiopia.

The Ministry of Education wishes to thank the many individuals, groups and other bodies involved directly and indirectly in publishing the textbook and accompanying teacher's guide.

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UNIT 1 Basics of Computer

Unit Outcomes

At the end of this unit, students will be able to :

- *identify computer generations;*
- *define functions of the computer;*
- *identify types of computer and*
- *identify the characteristics of computer.*

Overview

In this unit, students will learn about generations, functions and characteristics of computer. To begin with, there are five generations of computers. They are categorized based on their size, storage speed, methods of operationand purpose of application. The functions of computer are input, output, process and storage. The characteristics of computer are also identified in this unit.

This unit is expected to be covered in six (6) periods.

No.	Sub topics	Number of Periods Allotted
1	Computer generations	2
2	Functions of computer	1
3	Types of computer	2
4	Characteristics of computer	1

The topics covered in the unit are:

- computer generations;
- functions of computer;
- types of computer;
- characteristics of computer.

Instructional strategies:

Dear teacher, you can briefly highlight the previously covered and related topics the students have learned in g grade 7 as a brainstorming activity. You may ask the students about their prior knowledge on the topics. You can also help the students by providing information from the internet and the student textbook. You teach the topics giving group discussions, providing a lecture, showing examples, taking the students to the computer laboratory, showing figures from the textbook and using other relevant materials. Ask the students to browse the internet for further understanding of the topics and activities.

Required instructional resources:

- Computer laboratory, Internet connection and projector are required for this lesson.

Assessment strategies:

Group the students in three or four and ask them to discuss the first and second generations of computer. You can take the students with software setup to the computer laboratory and let them to install the software. Follow them while they are discussing and check whether they are talking about the given activity or not. Ask them to present their discussion to the class. Finally, help the students by concluding the topic and summarizing the activity. Lastly, examine the understanding of the students on the topic by providing a test, lab exercises and an assignment.

1.1. COMPUTER GENERATIONS

Competency

- Describe evolution of computers

This topic is expected to be covered in two periods.

Instructional strategies:

The teacher brainstorms the students about evolution of computer (*Do you know the evolution of computer*?) on page 2 of the textbook. Ask the students about their prior knowledge on this section. Further, the teacher can read the relevant section of your lesson from the textbook and the teacher's guide before your class. Then start the lesson by asking students about what computer generation. Let the students remember what they have learnt about computer generations in grade 7. Write the lecture notes (use power point if any) on the board and asks learners to copy the notes on their exercise book. Explain the lecture note to the whole class after the students have copied their notes. In between, ask questions randomly and make sure that they are following your class. Let the students try to ask questions if they did not get the points. Facilitate the students to visit the school computer laboratory in groups and show them what generation computers look like and how they are different in your laboratory. Summarize the main points and ask the students to read questions on the textbook as a classwork or homework. Finally, get feedback from them about their understanding of the topic.

Required instructional resources:

In this unit, the generations of computers are identified. Further, take the student to browse the Internet, tutorials, computer or laptop, projector, flip chart and marker (if available).

Assessment strategies:

The teacher follows how activities are done in-group or individually. The teacher asks the students to prepare the power point on computer generations for the class. Let teacher ask volunteer students to

present to the class. He/She gives feedback on their performance of their presentation including power preparation quality. The teacher can ask the students to discuss the time range of inventions and key differences between generations of computer as a class activity. Take the student with software setup to the computer laboratory and let them install the software. Also, examine when the students describe generations of computer. You can give a chance for students to draw vacuum tube, transistor and integrated circuit of the computer generation on flip chart or on board including their characteristic as a label for each generation.

Activity 1.1

Discuss the time range of inventions and key differences between generations of computer in groups.

The students are expected to identify the main differences among first, second, third, fourth and fifth generations of computer. The key differences among the generations are major technological developments that changed the way computers operate. They can be summarized in the following table.

No.	Generations	Time range of Invention	Key difference among generations
1	First generation	1940-1956	Used vacuum tubes
2	Second generation	1956-1963	Used transistors
3	Third generation	1964-1971	Used integrated circuits
4	Fourth generation	1971-Present	Used very large scale (microprocessor) integrated circuits
5	Fifth generation	Present and Beyond	Artificial Intelligence

1.2. FUNCTIONS OF COMPUTER

Competency

- Identify functions of the computer

This topic is expected to be covered in one period.

Instructional strategies:

Brainstorm the students (*How do you associate the functions of computer in processing data with that of human mind*?) on page 6 of the textbook and let they remember what they have learnt in grade 7 to share their experiences. Then start the lesson by asking the students about what function of computer means. Write the lecture notes (use power point if any) on the board and ask the learners to copy the notes on their exercise book. Explain the lecture note to the whole class after they have copied their notes. In between, ask the questions randomly and check that they are properly following your class. Let the students try to ask questions if they did not get your points. Summarize the main points and ask the students to read questions on textbook as a classwork or homework. Finally, do lesson activity and get feedback from them about their understanding of the topic.

Required instructional resources:

This section intends to present computer functions. Therefore, computer laboratory and Internet connection, projector and textbook are needed as resources.

Assessment strategies:

Follow the students when they describe computer functions. Support the students by providing examples on how computer works. The teacher provides feedback on their descriptions. Ask the student to enter data to the computer and examine it. Finally, assess the student by providing assignment, test or exercises.

Activity 1.2

Discuss how computer works in group?

A computer is a machine composed of hardware and software components. It receives data through an input unit according to the instructions it is given and processes it, sends it back through an output device. Computer accepts data from users and process it. Then it, it produces an output.

1.3. TYPES OF COMPUTER

Competency

- Identify types of computer

This topic is expected to be covered in two periods.

Instructional strategies:

The teacher brainstorms the student about types of computer (Do you know the types of computer?) on page 7 of the textbook. Then start the lesson by asking the students about their prior knowledge on the types of computer. Write the lecture notes (use power point if any) on the board and asks learners to copy the notes on their exercise book. Explain the lecture note to the whole class after they have copied their notes. In between, ask questions randomly and check whether they are following your class or not. Let the students try to ask questions if they did not get your points. Let the students be in groups and visit the school computer laboratory. Then summarize the main points and ask them to read questions on textbook as a classwork or homework. Finally, get feedback from them about their understanding of the topic.

Required instructional resources

Computer laboratory and different types of computer

Assessment strategies

Follow the students when they identify the types of computer. You can bring the example about the types of computer and ask the students

to differentiate the types of computers. Group the students into three or four to discuss it. The teacher can provide assignment, tests or exercises.

Activity 1.3

Form a group and discuss the differences between analog computer and digital computer based on the data they operate

No.	Analog Computer	Digital Computer
1	Analog computers work with continuous values. This type of system processes continuous data.	Digital computers work with discrete values. This type of system processes discrete data.
2	Speed of analog computers is less than that of the digital computers.	Speed of digital computers is more than that of the analog computers.
3	Analog computer has very low or limited memory and can store less amount of data.	Digital computer has very big memory and can store large amount of data.
4	Its performance is comparatively low.	Its performance is very high.

1.4. CHARACTERISTICS OF COMPUTER

Competency

- Describe the characteristics of computers

This topic is expected to be covered in one period.

Instructional strategies

The teacher brainstorms the students on the major characteristics of the computer on page 14 of the textbook (What are the major characteristics of computer?). Then start the lesson by asking students about the characteristics of computers. Write the lecture notes (use

power point if any) on the board and asks learners to copy the notes on their exercise book. Explain the lecture note to the whole class after the students have copied their notes. In between, ask the questions randomly and check whether they are following your class or not. Let the students try to ask questions if they did not get your points. Facilitate the students to be in groups to visit the school computer lab. Then summarize the main points and ask the students to read questions on the textbook as a classwork or homework. Finally, get feedback from them about their understanding of the topic.

Required instructional resources:

Internet connection and computer laboratory are needed.

Assessment strategies:

Follow the students when they describe the characteristics of computers. Ask the student to bring additional characteristics of computers to the class. Give them an assignment to identify the characteristics of computer. At the end provide assignment, tests or exercises.

Answer key for Review Questions

Part I: Say "True" if the statement is correct and "False" if it is incorrect.

1. True
2. False
3. True
4. True
5. False

Part II: For each of the following questions choose the correct answer.

1. B
2. D
3. A
4. C
5. C

Part III: Matching

1. E
2. C
3. A
4. B
5. D

PART IV: Read the statements and fill the blank space on the space provided

1. Five
2. Size and Cost
3. Vacuum Tube
4. Fifth
5. Hybrid computer

UNIT 2 Computer Hardware

Unit Outcomes

At the end of this unit, students will be able to :

- *explain computer hardware;*
- *explain input, output, storages and processing devices.*

Overview

Computer has hardware and software components. Based on information processing computer hardware is divided into input, output, storages and processing devices. In this lesson, students will define and identify different hardware devices.

This unit is expected to be covered in five (5) periods

No.	Sub topics	Number of Periods Allotted
1	Input Devices	2
2	Processing Devices	1
3	Storage Devices	1
4	Output Devices	1

The topics covered in the unit are:

- Input Devices,
- Processing Devices,
- Storage Devices,
- Output Devices.

Instructional strategies

In grade 7 the students have learned the overview of computer hardware. Thus, the teacher rehearse the students what they learned in grade 7 by taking the students to the computer laboratory and showing its figures from textbook and asking the students the brainstorming activity *"Do you recall the components of computer hardware that you learned in Grade 7?"*. Then, he/she start the unit by teaching overview of hardware components, follows input, output, storage and processing devices by using the topics through giving group discussion, showing the hardware devices. At the end of the unit please make the students to do review questions, assesse the students and gives reflection or feedback for them.

Required instructional resources

- This unit needs different input, output, storage and processing devices to show the students to understand the unit.

Assessment strategies

After teaching the components of hardware the teacher group the students to do the activities. In addition, take the students to the laboratory the teacher ask the students different type of input, output, storage and processing devices. Moreover, the teacher asks the functionalities of each hardware devices. At the end of the unit, please make the students to do review question and assessments the teacher gives reflection/feedback for the students.

2.1. INPUT DEVICES

Competencies

- Explain the types and function of input devices.
- This topic is expected to be covered in one period

Instructional Strategies

Dear teacher, please make the students to do the brainstorming activity: *"Before we start our lesson today, can you list input devices? And discuss what is the function of each devices?"* on page 20 of the student's textbook. Then, read relevant section of the student's textbook, beginning on page 20, which is about input devices and its function and on teacher's guide, beginning on page 12. In general, input devices are any computer hardware used to enter data to computer. The input devices convert input data to a form that can be understandable by computer *i.e.*, electronic format (0 and 1). Dear teacher remember the students about they have learned in grade 7 what is hardware and components of hardware. Then, teach the particular input devices and its functionalities in this topic. Do this by taking the students to computer laboratory or bringing the input devices to the class. Don't forget to assess the students and their attention to the lesson. At the end of lesson, to check whether or not students understand the topic, and please, do the activity 2.1 on page 26 of student's textbook. To do activity 2.1 group the students into five to ten, select the representative for reflection on the activities and after the students have finished the activity give them feedback.

Required Instructional Resources

- Input devices

Assessment Strategies

The teacher asks the students to explain the functions of input devices such as mouse, keyword, optical mark recognition, optical character recognition.

2.2. PROCESSING DEVICES

Competency

- Explain the function of different type of processing devices

Instructional Strategies

Dear teacher, please make the students to do the brainstorming activity: *"What do you mean when we say processing devices? What do they do?"* on page 27 of student's textbook. Then, read relevant section of the textbook, beginning from page 27, which is about processing devices and its function and on teacher's guide, beginning on page 13. A processing device is used for converting that data into useful information. Do this by taking the students to computer laboratory or bringing the processing devices to the class. Don't forget to assess the students and their attention to the lesson. At the end of lesson, don't forget to check whether or not students understand the lesson and give them feedback.

Required Instructional Resources

- Processing devices

Assessment Strategies

- The teacher asks the students to identify and explain the functions of processing devices.

2.3. STORAGE DEVICES

Competencies

- Explain the types and function of storage devices.
- This topic is expected to be covered in one period

Instructional Strategies

Dear teacher, please make the students to do the brainstorming activity: "Have you ever used storage devices? If so, could you describe the devices you used?" on page 28 of the student's textbook. Then, starting on page 28, read the relevant portion of the student's textbook, which is about storage devices and its function and on teacher's guide, beginning from page 14. A storage device is type of computer hardware that is used for storing files. There are two types of storage devices; primary and secondary storage devices. Then, teach the particular storage devices and its functionalities in this topic. Do this by taking the students to computer laboratory or bringing the storage devices to the class. Don't forget to assess the students and their attention to the lesson. At the end of lesson, to check whether or not students understand the topic, and please, do the activity 2.2 on page 32 of student's textbook. To do activity 2.2 group the students into five to ten, select the representative for reflection on the activities and after the students have finished the activity give them feedback.

Required Instructional Resources

- Storage devices

Assessment Strategies

- The teacher asks the students to identify and explain the functions of storage devices.

2.4. OUTPUT DEVICES

Competencies

- Explain the types and function of output devices.
- This topic is expected to be covered in one period

Instructional Strategies

Dear teacher, please make the students to do the brainstorming activity: *"What is the function of output devices? Discuss with your classmate. ?"* on page 33 of student's textbook. Then, starting on page 33, read the relevant portion of the student's textbook, which is about output devices and its function and beginning on page 15 of the teacher's guide. The output devices are used to get data out of a computer.

It converts information from computer understandable form to a human understandable form, either in soft copy or hard copy. Monitor, printer, headphones, speakers, projector, braille reader and plotter are some of output devices.

Then, teach the particular output devices and its functionalities in this topic. Do this by taking the students to computer laboratory or bringing the output devices to the class. Don't forget to assess the students and their attention to the lesson. At the end of lesson, to check whether or not students understand the topic, and please make the students to do the activity 2.3 on page 36 of student's textbook. To do activity 2.3 group the students into five to ten, select the representative for reflection on the activities and after the students have finished the activity give them feedback.

Required Instructional Resources

- Output devices

Assessment Strategies

- The teacher asks the students to explain the functions of output devices such as Monitor, printer, headphones, speakers, projector, braille reader and plotter.

Answer keys for Review Questions

Part I: True or False

1. False
2. False
3. True
4. True
5. True
6. False
7. False
8. False
9. False
10. True

Part II: Choose the correct answer for each of the following questions

1. B
2. B
3. A
4. C
5. D
6. D
7. A
8. C
9. D
10. B
11. C
12. B
13. D
14. B
15. A

UNIT 3 Computer Software

Unit Outcomes

At the end of this unit, students will be able to :

- *define operating system, utility and driver software;*
- *demonstrate skills in creating, saving, and formatting word processing document;*
- *demonstrate skills in creating, saving, and formatting spread sheet files;*
- *demonstrate skills in creating, saving, and formatting Powerpoints.*

Overview

In this unit, students will learn about operating system and computer software, such as word processor, spreadsheet and power point. They will also learn about operating system, utility software, driver software the demonstrations of word processor, spreadsheet and power point in this unit.

This unit is expected to be covered in ten (10) periods.

No.	Sub topics	Number of Periods Allotted
1	Operating System	1
2	Utility Software	1
3	Deriver Software	1
4	Application software	1
5	Word processor	2
6	Spreadsheet	2
7	PowerPoint (Slides)	2

The topics covered in the unit are:

- Operating system
- Utility Software
- Deriver Software
- Word processor
- Spreadsheet
- Power point (slides)

Instructional strategies:

Dear teacher briefly highlights the topic they have learned in grade 7 to the students as a brainstorming activity (What application software are you familiar with?). Then, teach topics of the unit providing demonstrations, group work, demonstrate the exercises, taking the students to the computer laboratory.

Required instructional resources:

This unit needs to practical work and exercises in the computer laboratory. Computer laboratory, operating system, word processor packages, CD or external hard disk, Internet connection and projector are needed for this lesson.

Assessment strategies:

Take the students with software setup to the computer laboratory and let them to install anti-virus or any software. Follows the students when they demonstrate, practical work. Examine their demonstrations and exercises on the topic. Use laboratory exam, worksheet demonstrations, exercises such as homework, classwork and assignments.

3.1 OPERATING SYSTEM

Competency

- Define operating system

This topic is expected to be covered in one period.

Instructional strategies:

Let the teacher brainstorm the student by using brainstorming activity on page 41 of the textbook *(*What did you notice about the operating system in grade 7?*)*.The teacher helps the students to remember what they have been learnt in grade 7. Write the lecture notes (use power point if any) on the board and ask the learners to copy the notes on their exercise book. Explain the lecture note to the whole class after they have copied their notes. In between, ask questions randomly and check whether they are following your class or not. Let the students try to ask questions if they did not get your points. Facilitate the students to be in groups and visit the school computer laboratory. Summarize the main points of the lesson and ask them to read questions on textbook as a classwork or homework. Finally, get feedback from the students about their understanding of the topic.

Required instructional resources

Operating system (Windows, Ubuntu, or Linux), computer laboratory, Internet connection, projector (LCD) and textbook are needed.

Assessment strategies:

The assess when the student install or delete different operating system. Laboratory test, worksheet demonstrations, exercises such as homework, classwork and assignments).

Required Skill:

The teacher must have the ability to install OS like windows or related on the computer. Additionally, the teacher has ability delete installed operating systems.

3.2. UTILITY SOFTWARE

Competency

- Define utility software

This topic is expected to be covered in one period.

Instructional strategies

The teacher must brainstorm the student using activity on page 41 of the textbook (Do you have prior knowledge about utilities software?). Then start the lesson by asking students what utility software is. Let the students recall what they have learnt in grade 7. Write the lecture notes (use power point if any) on the board and ask the learners to copy the notes on their exercise book. Explain the lecture note to the whole class after they have copied their notes. In between ask the questions randomly and check whether they are following your class or not. Let the students try to ask questions if they did not get the points. Facilitate the students to be in groups and visit the school computer laboratory. Summarize the main points and ask them to read questions on the textbook as a classwork or homework. Finally, get feedback from the students about their understanding of the topic.

Required instructional resources:

Computer laboratory, anti-virus and Internet connection are needed for the instruction.

Assessment strategies:

The teacher assess the student by providing anti-virus software to install, disk partition, disk cleaning, data recovery and disk fragment on the computer. Laboratory test, worksheet demonstrations, exercises (homework, classwork, assignments).

Required Skill:

The teacher must have the ability to recover data, take backup, diagnosis, disk cleaning, disk scanner, and disk fragment.

Activity 3.1

1. List and explain some of system utilities, storage management utilities, and file management utilities.

Some of system utilities:

Anti-Virus: is software that assists the operating system in providing a virus-free environment to the users. The anti-virus can detect many types of viruses like Worm, Spyware, and Trojan horse and Boot virus. Furthermore, anti-virus program not only detects viruses from a computer but also prevents new viruses from entering into the computer. Some important anti-virus software includes Avast, McAfee, and Norton Antivirus. Anti-virus can also be set up so that your computer is scanned periodically.

Diagnostic Program: is an automatic software sequence that defines the operational status inside the software, hardware, or any combination of components, a system, or a network of systems. Diagnostic program provides guidance to the users about any issues or problems found during its operation. Diagnostic program is also built-in inside the consumer electronic products and games. **Network Utilities**: are software utilities developed to monitor, analyze, and provide configuration facility about various aspects of computer networks. The most common network utilities are Ping, and Traceroute lookup.

Some of Storage Management Utilities

Backup Software: is used to make the backup of data and files. This utility program is used when data is lost or deleted unexpectedly. The backup software is a program that provides an easy way to take backup.

Disk Scanner: is used to detect the physical and logical problems of a disk. All operating systems provide disk scanners to manage computer disks.

Disk Formatters: are the utilities that get the storage devices ready.

For example, hard disk, magnetic disk, or USB flash drive are made ready for initial use. Generally, these utilities are used to permanently erase an entire disk drive or device.

Disk Partition Editors: are use for creating one or more regions on a secondary storage disk in order to manage each region separately. These regions are known as partitions. It is the first step of preparing a newly installed disk drive before the creation of any file system.

Some File Management Utilities are:

Data Recovery: is a process of fetching inaccessible, misplaced, corrupted, destroyed or formatted data from permanent storage and removable media like USB, when the stored data inside them cannot be accessed through the traditional way.

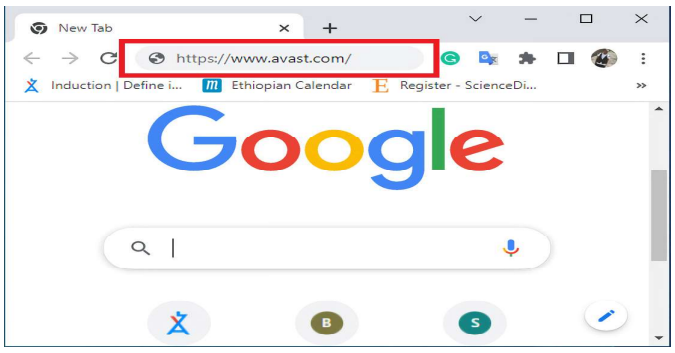
Data Compression: It is the art of reducing the number of bits you need to store and transmit data. It always depends on the type of data that you are trying to compress. So if you can reduce the file size by half it has a compression ratio of two. There are two main types of compression lossless and lossy.

Data Conversion: is the process of converting computer data from one format to another desired format. In a computer-based environment, data is encoded in a huge number of ways.

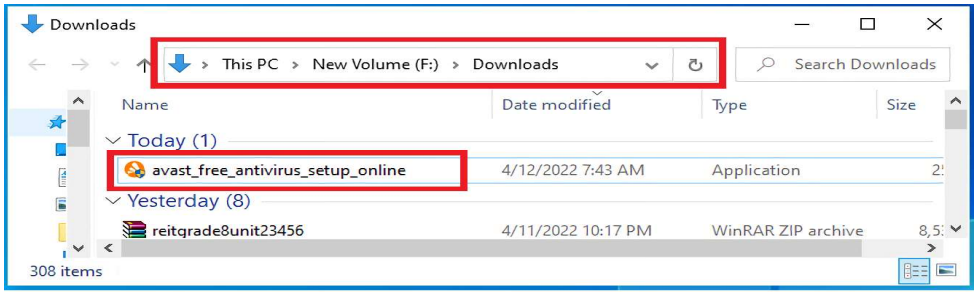
2. Download and install Avast anti-virus software on the computer in the laboratory.

You can follow the steps below to install to avast anti-virus software.

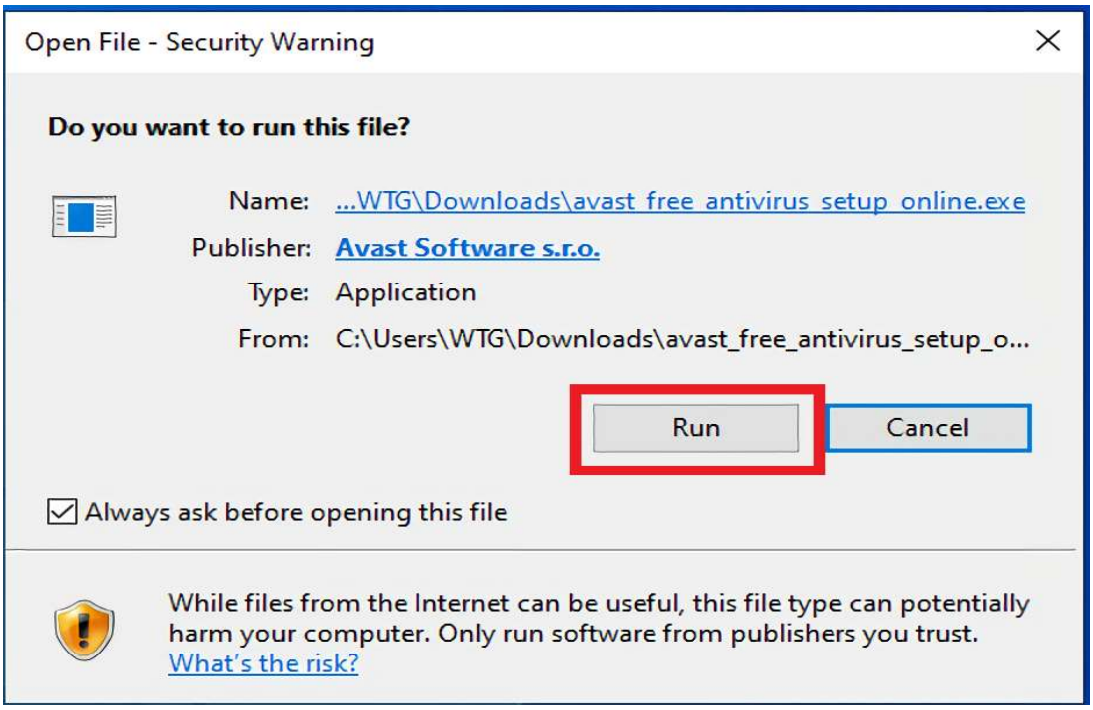
I. Search avast anti-virus on the Internet and download an **.exe** file. Use this link https://www.avast.com/



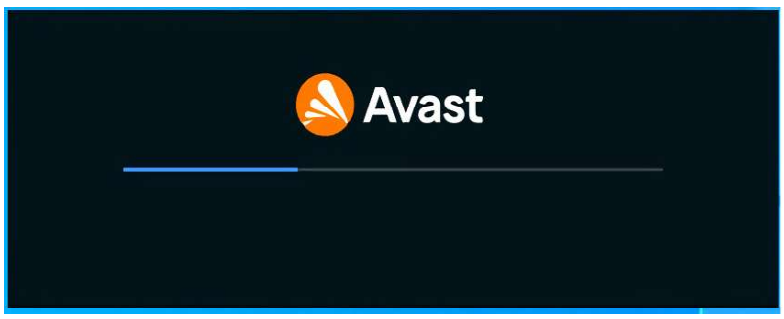
II. Double-click the **.exe** file. (It will usually be in your Downloads folder.)



III. A dialog box will appear. Follow the following instructions to install the software.



IV. After you clicked "Run" it will start to install as it shown on the Figure below. The software will be installed after few minutes.



3.3. DRIVER SOFTWARE

Competency

- Define deriver software

This topic is expected to be covered in one period.

Instructional strategies

The teacher should be brainstorm the student using brainstorming activity on page 43 of the textbook (How does a computer recognize a printer?). The teacher helps the student to understand the topic by providing information. Write the lecture notes (use power point if any) on the board and ask the learners to copy the notes on their exercise book. Explain the lecture note to the whole class after they have copied their notes. In between, ask questions randomly and check that they are following your class. Let the students try to ask questions if they did not get the points. Facilitate the students to be in groups and visit the school computer laboratory. Summarize the main points and ask the students to read questions on the textbook as a classwork or homework. Finally, get feedback from them about their understanding of the topic.

Required instructional resources:

Deriver software setups, computer laboratory and Internet connection are needed.

Assessment strategies:

The provide different driver software to install and connect computer with printers, scanners or any peripheral devices. Laboratory test, worksheet demonstrations, exercises such as homework, classwork and assignments.

Required Skill:

The teacher must have the ability to install drivers and connect peripheral devices with the computer. In addition, the teacher must know how to connect peripherals with computer with driver and bluetooth or wireless.

3.4. APPLICATION SOFTWARE

Competency

- Identify applications software

This topic is expected to be covered in one period.

Instructional strategies:

The teacher must read the relevant section of your lesson from the textbook and the teacher's guide before your class. Brainstorm the students using activity on page 43 of the textbook (What are applications software used to photo edit, browse and play music?). Then start the lesson by asking students what application software is. Let the students remember what they have learnt in grade 7. Write the lecture notes (use power point if any) on the board and ask the learners to copy the notes on their exercise book. Explain the lecture note to the whole class after they have copied their notes. In between, ask questions randomly and check that they are following your class. Let the students try to ask questions if they did not get the points. Facilitate the students to be in groups and visit the school computer lab. Summarize the main points and ask them to read questions on the textbook as a classwork or homework. Finally, get feedback from students about their understanding of the topic.

Required instructional resources

Software setups like anti-virus, Microsoft office packages, and computer laboratory Internet connection

Assessment strategies:

Provide some applications software and assess when they install and uninstall software. The teacher asks the students to explain application software. Provide worksheet, projects and demonstrations activities to the student.

Required Skill:

The teacher must have the ability to install and uninstall different applications software.

Activity 3.2

Do you think that road traffic and safety light system and Automated Teller Machine (ATM) in your village need software to work. Discuss in groups and present to your class.

Yes, road traffic management system and Automated Teller Machine (ATM) in our town use different software to operate. These devices generally use operating system, memory of storage and different software to be functional.

There are several software used at several layers in traffic controller. At the individual traffic signal controller level, there are systems where the hardware and software are from the same manufacturer. There are other systems where the controller hardware is independent of the software.

Traffic light systems are designed to use software such as Linsig, Transyt, Corsim/Transyt-7f or Vissim.
Today, the vast majority of ATMs worldwide use a Microsoft Windows operating system, primarily Windows XP Professional or Windows XP Embedded software.

3.5. WORD PROCESSOR

Competency

- Demonstrate Word Processor

This topic is expected to be covered in two periods.

Instructional strategies

Brainstorm the student by asking brainstorming activity on page 43 of the textbook (Have you ever-used word processor to edit files?). Help the students by providing the concept of word processing and their usability. Ask the students to recall what they have learnt in

grade 7. Take them to the computer laboratory, show them writing, and document formatting. Please, install word processor to the school computer laboratory before the lesson. Take the students to the computer laboratory and group them on each computer. Then write the demonstration steps (use power point if any) on the board and ask the learners to copy the demonstrations on their exercise book. Then open and show demonstration features to the students. Let each student to demonstration in the laboratory by his or her own. Check the students' demonstration and let the students try to ask questions if they failed to show their own demonstrations. Summarize the main demonstrations and ask the students to read questions on the textbook as a classwork or homework. Finally, get feedback from them about their understanding of the topic.

Required instructional resources:

Word processor package setup, sample of piece of file, table and record for exercises, computer laboratory, and Internet connection.

Assessment strategies:

Provide piece paragraphs or sentence to insert into word processor and ask them formatting. Take the student with software setup to the computer laboratory and let them to install the software. Use laboratory test, worksheet demonstrations, and exercises such as homework, classwork, and assignments.

Required Skill:

Prior to this activity, the teacher must know the word processor formatting.

Activity 3.3

Write a paragraph about the history of Ethiopian airlines using word processor and show to your teacher.

The Ethiopian Airlines company was founded on December 30, 1945. It commenced operations on April 8, 1946, with a weekly service between Addis Ababa and Cairo with five Douglas DC-3 propeller-

driven aircraft. The Ethiopian Airlines ("Ethiopian") is the national airline of Ethiopia with its main hub at Bole International Airport. During the past 75 years, the airline has become one of the continent's leading carriers, unrivalled in Africa for efficiency and operational success, turning profits for almost all the years of its existence. It has also become one of Ethiopia's major industries. Ethiopian Airlines serves 53 international destinations with 157 weekly international departures from Addis Ababa and a total of 410 weekly international departures worldwide.

3.6. SPREADSHEET

Competency

- Demonstrate spreadsheet

This topic is expected to be covered in two period.

Instructional strategies:

Brainstorming the student by asking brainstorming activity on page 52 of the textbook (Do you know how to perform subtraction, addition, multiplication and division using spreadsheet?). The teacher should be install spreadsheet to the school computer laboratory before the lesson. Take the student to the computer laboratory and group them on each computer. Then write the demonstration steps (use power point if any) on the board and ask the learners to copy the demonstrations on their exercise book. Explain the demonstration to the whole class after the students have copied their notes. Then open and show demonstration features to the students. Let each student to imitate demonstrations in the laboratory by his or her own. Let the students try to ask questions if they failed to show their own demonstrations. Summarize the main demonstration steps and tell the students to read questions on the textbook as a classwork or homework. Finally, get feedback from them about their understanding of the topic.

Required instructional resources

The teacher will browse the Internet on how to perform sum in spreadsheet cell. Word processor package setup, sample of piece of file, table and record for exercises, computer laboratory, and Internet connection are the resources required here.

Assessment strategies:

Provide mathematical calculations and ask them to adds, subtracts, divides and multiplications. Take the student with software setup to the computer laboratory and let them to install the software. Use laboratory test, worksheet demonstrations, exercises such as homework, classwork, and assignments.

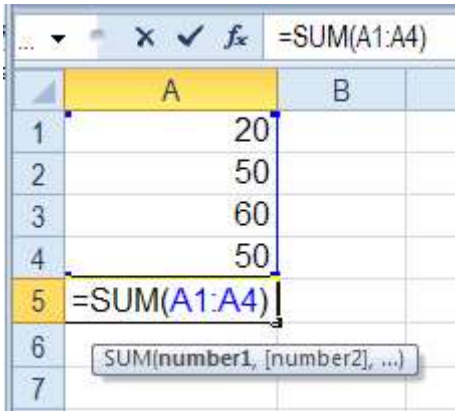
Required Skill:

Ability to create table, perform mathematical calculations (adds, subtracts, divide, multiplication) and formatting spreadsheet.

Activity 3.4

Create a file and enter your information such as your name, age, gender, grade, test one, test two and find the sum of your test by using spreadsheet.

The aim of this activity is to help the students to create a table in spreadsheet. In addition, the students can calculate the sum of numbers in spreadsheet cell. Please, help them to create a table by referring to the textbook and the Internet. For example, the teacher can use the following screenshot:



Based on the provided screenshot, help them to create the following table in spreadsheet. To find the sum of numbers in spreadsheet. You can demonstrate it as the figure below:

	Name	Age	Gender	Grade	Test 1	Test 2	Sum	Rank
2	Obsineet Gudisa	15	Female	8	7	9	16	
3	Kebede Melesa	16	Male	8	6	8	14	
4	Hagos G/Mariam	14	Male	8	8	7	=E4+F4	
5	Zabarga Shamsu	16	Male	8	9	6		

3.7. POWERPOINT

Competency

- Demonstrate Power Point

This topic is expected to be covered in two periods.

Instructional strategies:

Brainstorm the student by asking brainstorming activity on page 56 of the textbook (Do you know how to prepare a power point presentation?). The teacher should be install power point software to the school computer laboratory before the lesson. Take the student to the computer laboratory and group them on each computer. Then write the demonstration steps (use power point if any) on the board and ask the learners to copy the demonstrations on their exercise book. Explain the demonstrations to the whole class after the students have copied their notes. Then open and show the demonstration features to the students. Give time to the students to imitate demonstrations in the laboratory by his or her own. Let them try to ask questions if they failed to show their own demonstrations. Summarize the main demonstrations and ask the students to read questions on the textbook as a classwork or homework. Finally, get feedback from them about their understanding of the topic.

Required instructional resources

Microsoft office package setup, sample of piece of file, table and record for exercises, computer laboratory, and Internet connection are resources required.

Assessment strategies:

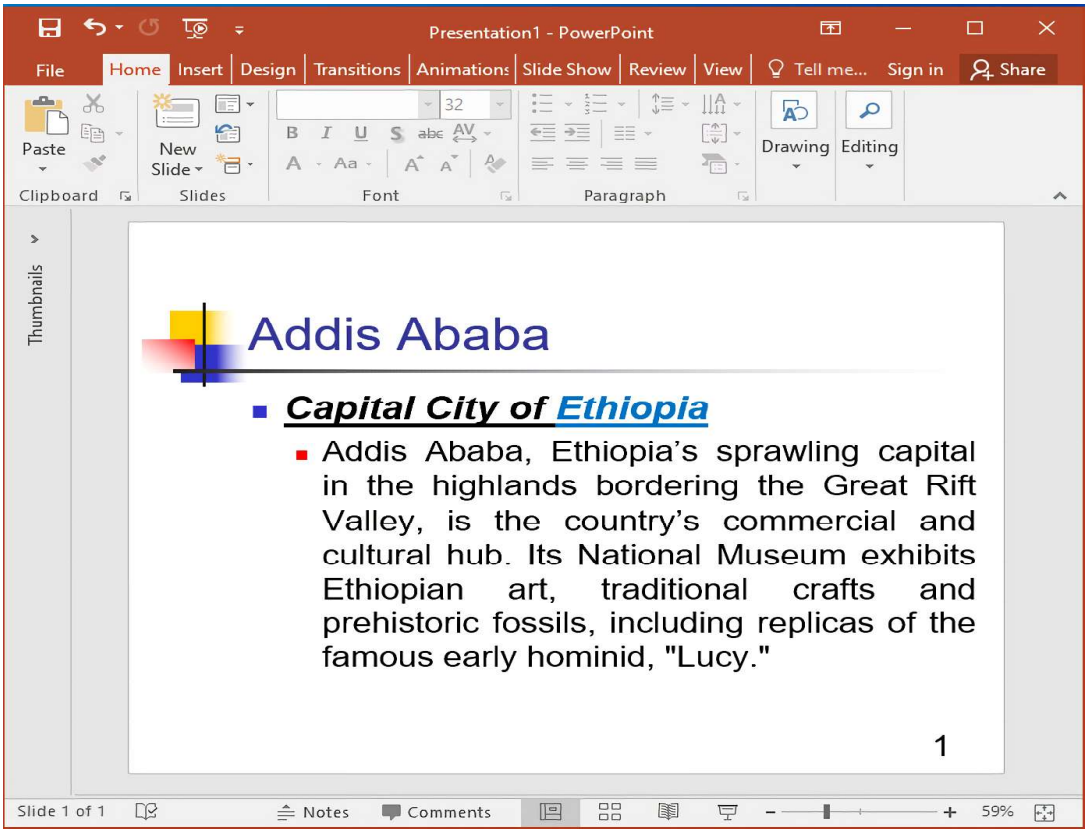
Provide activity and ask them to prepare power point. Take the student with software setup to the computer laboratory and let them to install the software. Use laboratory test, worksheet demonstrations, exercises such as homework, classwork, and assignments.

Activity 3.5

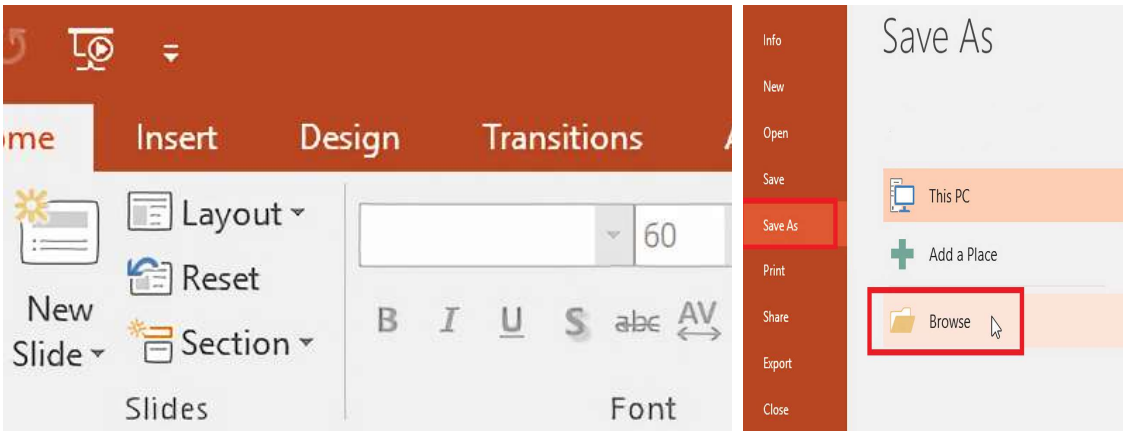
Write a tale you know in your village and present to your class using power point.

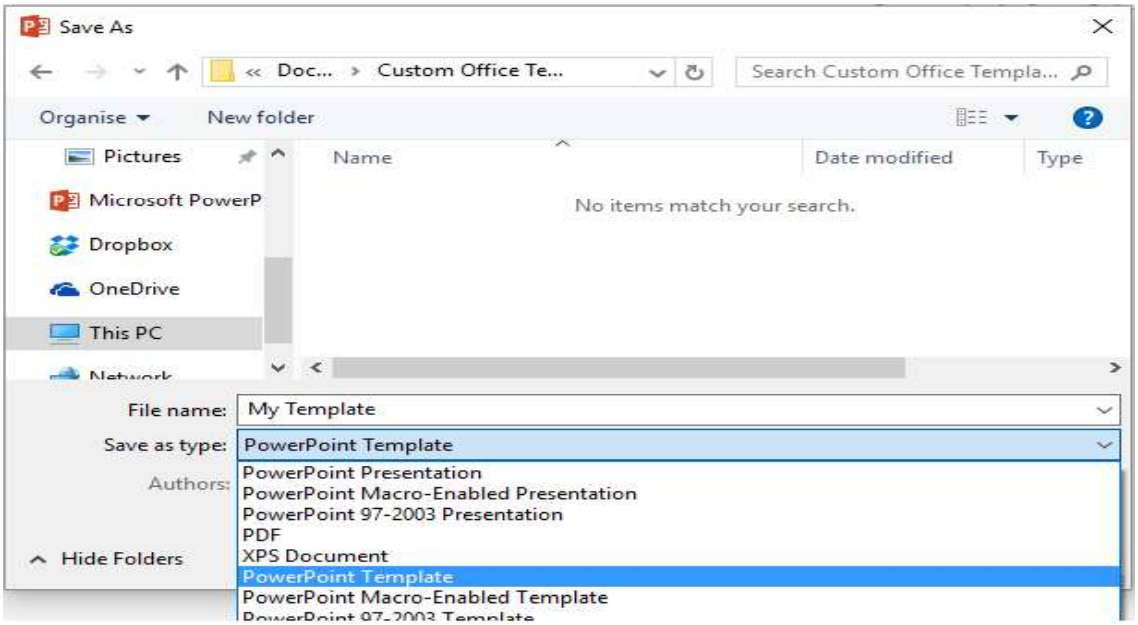
Instructions:

1. Italicize, Bold and Underline the topic of your tale.
2. Insert page number to your slide.
3. Use any colour you want, example, Blue Colour.



4. Save it by your name.





Review Questions Answer

Part I: Say True if the statement is correct and False if it is incorrect.

1. False
2. False
3. False
4. False
5. True

Part II: Choose the correct answer for each of the following questions.

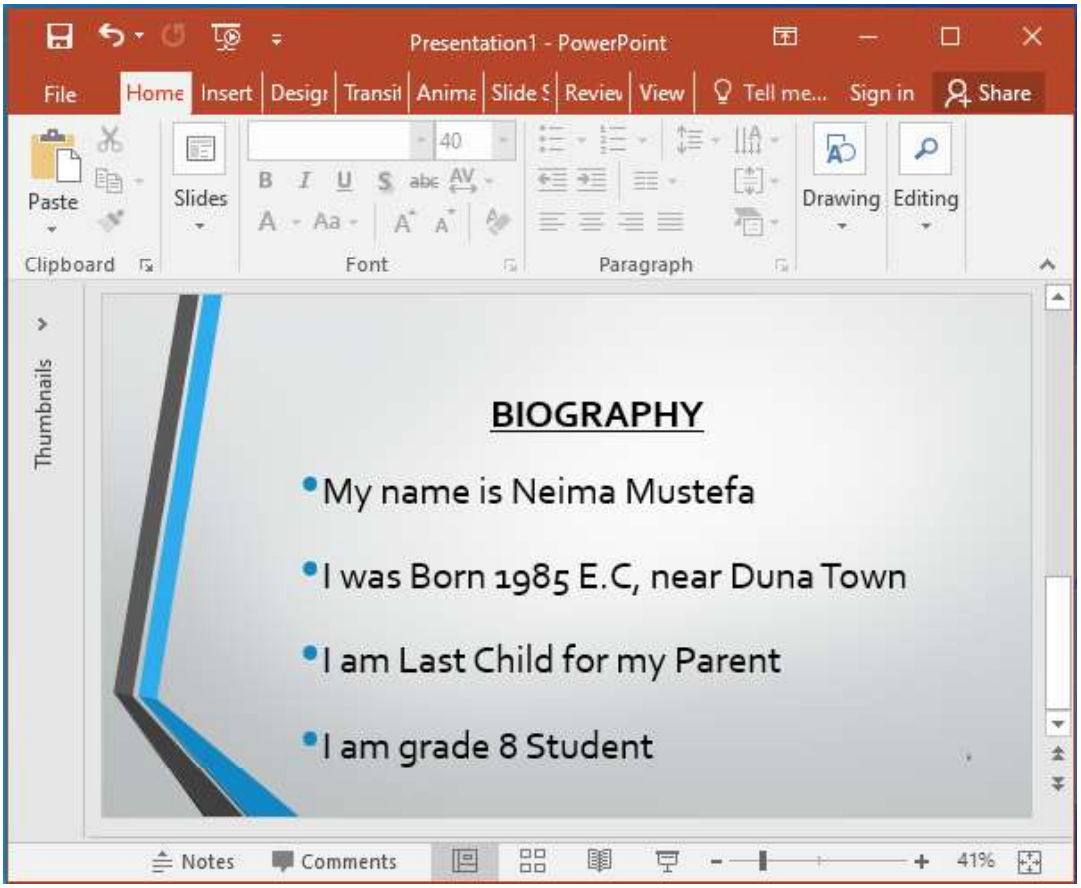
1. A
2. C
3. D
4. D
5. C

Part III: Demonstrate the following questions.

1. From the following table, demonstrate the sum and average of the student result using spreadsheet. Hint: Refer activity 3.4, which has screenshot and steps.

No	Student Name	Mathematics	Chemistry	Biology	Physics	English	Sum	Average
1.	Kebede W/Mariam	78	87	91	73	82		
2.	Lattuu Walabuma	89	85	93	82	75		
3.	Zabarga Hussen	65	89	87	75	89		
4.	Abdulkadir Jemal	89	78	65	78	79		
5.	Hagos Getachew	79	89	74	89	76		
6.	Ujulu Osman	67	87	75	75	89		
7.	Ayde Ergando	81	74	87	87	78		
8.	Obsineet ' Gudisa '	87	78	88	94	98		

Part III: Prepare a short power point presentation about your biography.



UNIT 4 Internet

Unit Outcomes

At the end of this unit, learners will be able to :

- *escribe internet services ;*
- *able to browse information on the Internet;*
- *create and able to use social network such as Facebook and Telegram.*

Overview

Dear teacher, this unit helps students to understand internet services such as WWW, FTP, HTTP and E-mail, browse information on the Internet, social networks and benefits and risks of Internet.

This unit is expected to be covered in six (6) periods.

No.	Sub topics	Number of Periods Allotted
1	Internet services (WWW, FTP,HTTP and Email)	3
2	Browse information on the Internet	1
3	Social networks	1
4	Opportunities and risks of the internet	1

The topics covered in the unit are:

- Internet services such as WWW, FTP,HTTP and Email;
- Browse information on the Internet;
- Social networks;
- Benefits and risks of internet.

Instructional strategies

Dear teacher, before start the unit, it is essentials to revise of the topics learned in unit four of grade 7. Then, you can continue to teach this unit about how browse information on the internet create e-mail and use email, create facebook account and benefits and risks of the internet. At the end of the unit please make the students to do review questions, assesse the students and gives reflection or feedback for them.

Required instructional resources

Computer laboratory with internet connection

Assessment Strategies

Dear teacher, asses the students when they access information from the internet by giving keywords, ask the students to list the benefits and risks of the internet, evaluate the students when they create and use e-mail.

4.1. INTERNET SERVICES

Competencies

- Differentiate between WWW, URL, web page, website, web browsers, static and dynamic webpages.
- Create and use e-mail.

This topic is expected to be covered in three periods.

Instructional Strategies

Dear teacher, the students already started about internet services in grade 7. Thus, please make the students to do the brainstorming activity: *"Discuss the major uses of the Internet that play a vital role in daily life."* on page 63 of the student's textbook. After the brainstorming, it is important to revise it by asking them some questions about internet services before start teaching this topic. Then, you can start the lesson by defining the internet refers to network of networks. It is a world-wide global system of interconnected computer networks. The internet is the largest computer network in the world, connecting millions of computers. World Wide Web, E-mail and File transfer protocol are major services on the internet. Dear teacher, this topic needs to be read and rehearsed focusing on the relevant sections of the textbook, beginning on page 63 and the teacher's guide, beginning on page 7. Then, in the class, you can teach the theory part and take the students to the computer laboratory for the practical part. In the computer laboratory show the students how WWW works, email is created and used.

Required Instructional Resources

Computer lab with internet connection

Assessment Strategies

The teacher evaluates the students when they create and use email.

4.2. BROWSING INFORMATION FROM THE INTERNET

Competency

- Able to browse the information from the Internet

This topic is expected to be covered in one period

Instructional Strategies

Dear teacher, please make the students to do the brainstorming activity: "In groups, discuss what we can search on the internet." on page 66 of the student's textbook. Then, start the lesson by defining

what is browsing information like browsing information is one of the easiest and useful ways to use the internet. There is **a lot** of information on the internet. We use search engines such as Google and Yahoo to search information. This topic is recommended to be taught practically by showing how to browse information on the Internet. Dear teacher, please read the relevant section of the textbook, beginning on page 33 and the teacher's guide, beginning on page before you present the topic to your students. Then, make the students to do the activity 4.1 on page 67 students' text book by taking students to the computer laboratory.

Required Instructional Resources

Computer laboratory with internet connection.

Assessment Strategies

The teacher asses the students when they search information from internet and create and use email individually or in group.

4.3. ELECTRONIC MAIL

Competency

Create email address and exchange mail,

Instructional Strategies

Dear teacher, please make the students to do the brainstorming activity: "Have you ever used email? If so, for what purpose?" on page 67 of the student's textbook. Then, at the end of this lesson take the students to the laboratory and make them to do the activity 4.2 on page 71 of the student's textbook.

Required Instructional Resources

Computer laboratory with internet connection.

Assessment Strategies

Take assessment when the students create email account, send, read and forward message.

4.4. SOCIAL NETWORKS

Competency

- Identify and explain uses of social media are and uses of social networks.

This topic is expected to be covered in one period

Instructional Strategies

Social media refers to the means of interactions among people in which they create, share, and/or exchange information and ideas in virtual communities and networks. It is used to connect friends, family, colleagues, customers, or clients. Facebook, Telegram, Twitter, Skype, YouTube, Instagram and LinkedIn are some of the social networks. Dear teacher please the make students to well understand the benefits and risks social networks.

Required Instructional Resources

Computer lab with internet connection and social media

Assessment Strategies

Take assessment when the students create social media and use it such as facebook and telegram.

4.5. BENEFITS AND RISKS OF INTERNET

Competency

- Identify the opportunities and the risks of internet use.

This topic is expected to be covered in one period.

Instructional Strategies

Dear teacher, please make the students to do the brainstorming activity: *"Do you believe there are any risks associated with utilizing social network?* What are some of the risks of utilizing social media?" on page 76 of the student's textbook. A significant number of young people have grown up with the internet and digital devices as part of

their everyday life. People can use social media to connect with others, including friends, family and teachers. Thus, social network has its own benefits and risks. Read the relevant section of the student's textbook, beginning on page 76 and the teacher's guide, beginning on page 39. Ensure that the students are engaged in the activity 4.3 and give them feedback. Get also feedback from students about their understanding of the lesson.

Required Instructional Resources

Different figures show the opportunities and the risk of internet.

Assessment Strategies

Make the students to discuss on activity 4.3 by group and assess them by asking questions.