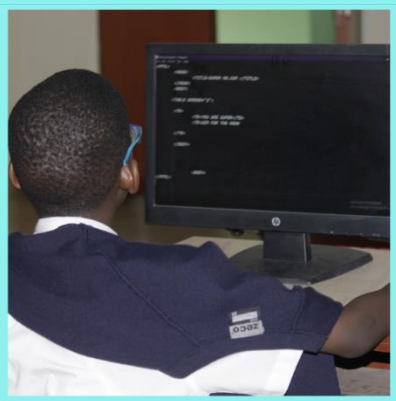
ALPHA CHOICE INNOVATIVE ACADEMY





2ND TERM

GRADE 8 ICT MASTERNOTE 2022/2023

KAYODE MOSES.O

SECOND TERM SYNOPSIS

WEEK	TOPIC
1	**Revision of first terms work**
2.	**Programming Language**: (a) Meaning of computer program (b) Computer Programming Language i. Meaning ii. Examples (Logo, BASIC, etc)
3	**BASIC:** (a) Basic Language: i. Meaning of BASIC ii. BASIC character set (b) Key BASIC Statement: i. Line number ii. Remark (REM) iii. Assignment (LET, INPUT, DATA). iv. Output Statement v. Print vi. Program Terminator (END, STOP) (c) Simple BASIC Statements.
4&5	**Graphic Packages 1:** (a) Meaning of graphic package (b) Examples of graphic package: paint, Corel Draw, Instant Artist, Harvard graphics, Photo shops, log graphic etc (c) Features of graphic packages: Tool bar, Menu bar, Printable area, Colour Palette. etc.
7&8	**Graphic packages II: The Paint:** (i) The Paint Environment - identification of features of the paint environment. (ii) Paint tools and their functions
9.	**Benefits and disadvantages of ICT**
10.	**Revision**
11.	**Examination**

WEEK 2: PROGRAMMING LANGUAGE:

CONTENT: i. Meaning of computer program
ii. Computer programming language – meaning, example (Logo, BASIC etc).

Meaning of computer program

A set of instructions to the computer to perform a specific task written in a specific programming language is called computer program.

Meaning of programming language

A programming language is the language in which a computer programmer writes the instructions which a computer should follow in solving a given problem.

A programmer is someone who writes instructions for computer to perform a specific task. Programming is the act of writing instructions for computer to perform a specific task. A computer person that writes a set of instructions for the computer to obey is referred to as computer programmer.

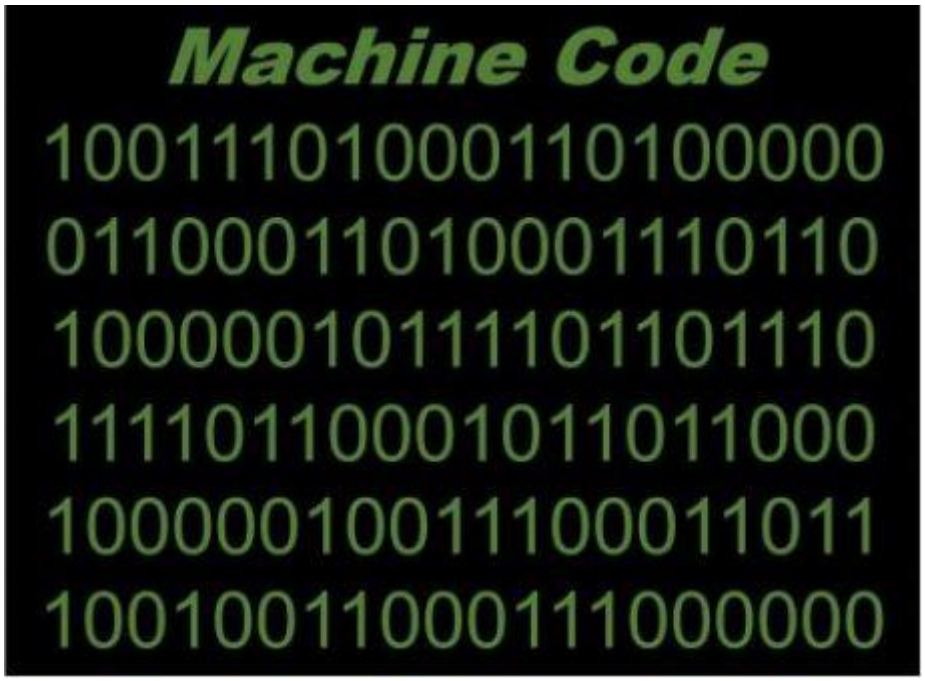
The three main categories of programming languages are:

1. Machine language
2. Low level language
3. High level language

Machine Language

A language in which the computer performs the instructions immediately without any further transaction is called machine language. The machine language is the

computer primary language. It is the only language that the computer understands and does not require interpretation. It is usually written in the forms of 0s and Is. Machine language is referred to as the first generation programming language because it was the earliest computer programming language.



Low Level Language

Low level language is machine dependent language written in symbolic codes but human being understands it better than machine language. It must be translated to machine language before execution. They are very difficult to use and cannot be used interchangeably on different types of computer. However, they also produce the fastest programs.

High level language

High level language is the programming language written by the programmer in form of English language for better understanding. It uses symbols and words to give instructions to the computer. High level language must also be translated into machine for language execution. It is less machine dependent unlike machine language.

Sub-Topic: Types of high-level language

There are five types of high-level language. They are:

1. Scientific language
2. Multi-purpose language
3. Commercial language
4. Command language for operating system
5. Special purpose programming language.

Scientific Language

This is the language that is used for scientific and engineering purposes. Examples include FORTRAN – Formula Translator, BASIC – Beginner All-purpose Symbolic Instruction Codes. It combines the features of the extensive arithmetic computational ability and the ability to handle mathematical expression.

Multi-Purpose

This types of high level programming language can cope with a number of different types of application areas. Examples of multi-purpose language are Visual BASIC, C++, Java etc.

Commercial Language

This type of program was first developed by the American Government Defensive Department to create a common administrative language for internal and external use. The prominent language is COBOL (Common Business Oriented Language).

Command for Operating System

This program language is used to control the operating system. An example is DOS Commands (Disk Operating System commands.)

Special Purpose Language

This is programming language designed for a specific assignment. It is tailored towards a particular problem. E.g. Structural Query Language.

EXERCISE

1. What is Computer program?
2. Who is a programmer?
3. Explain special purpose language

4. Explain commercial language
5. State differences between Machine language and High level language.
6. Outline the main purpose of computer programming
7. Define the term "program"
8. Machine language programs are written using _____ (a) English-like words (b) series of 1s and 0s representing high and low electrical states (c) BASIC (d) symbolic names to represent storge locations.
9. Programming languages that are more oriented toward the programmer, rather than the computer are _____ languages. (a) assembly (b) machine (c) low-level (d) high-level
10. Programmers are also sometimes called coders. (a) True (b) False

WEEK 3 BASIC PROGRAMMING STATEMENTS.

BASIC PROGRAMMING

Meaning of BASIC

BASIC stands for Beginner All-purpose Symbolic Instruction Code. It is not only simple but also a very powerful high level programming language. It consists of statements written in English words and mathematical notation. It is written in a human understandable form. Its syntax is close to the natural way of solving some human problems.

Rules for BASIC programming

1. All expressions must be written in capital letters.
2. First character must be alphabet
3. BASIC statement or keyword must start with a line number.
4. Each line must contain only one BASIC program statement.
5. There must not be full stop at the end of a statement.
6. The start/begin statement must be the first entry in a program.
7. End/Stop statement must be the last entry in a program.

Element of BASIC

1. **Character Set:** This refers to any letter, number, sign or symbol and punctuation mark in any language used for representation of information. Character set are: Numbers 0 - 9, Alphabets A - Z, Special characters or symbols +, -, *, /, <, &, :, ; etc

2. **Data Constants & Data Variables**

   i. **Data Constant (or constants)**

   These are data that do not change during the course of computation or program execution.

ii. **Data Variables (variables)**

They are data that can change in constant numerals versus variable numerals.

Constant data	*Variables data*
10 A = 1	10 Input A
20 B = 2	20 Input B
30 Sum = A + B	30 Sum = A + B
40 PRINT SUM, A, B	40 PRINT SUM, A, B
50 END	50 END

3. **Reserved or Keyword:**

This is also referred to as a BASIC statement. It is an instruction which has special meaning to the computer or BASIC interpreter. Examples: REM, LET, INPUT, READ, PRINT, GOTO, FOR…., NEXT etc.

Sub-Topic 2: Key BASIC Statement

i. LINE numbers

In BASIC we need a line number for each basic statement. Numbers are positive whole numbers from 1 to 99,999. A line number is always in integer form and this are done to give room for correction when necessary. It is presented in the format below:

10 ……..
20 ……..
30 ……..
40 …….. etc.

ii. REM Statement (Remark)

REM statements stand for remark. The statement allows you to add comment and explanatory notes to your program. This may as well include date and what the program is all about. Computer does not execute REM; it is just a remark that aids the programmer to remember certain thing about the program.

Examples: REM PROGRAMM TO SAY HELLO
REM TO CALCULATE AREA OF A TRIANGLE

Sub-Topic 3: Key BASIC Statement (Cont.)

iii. ASSIGNMENT Statement

Assignments consists of the following: INPUT, LET and DATA

INPUT Statement

This allows you to type in data from the keyboard while the program is running. This program will be able to produce the required result with given data. The input statements have the general format.

10 INPUT A
20 INPUT B
30 INPUT C

Example: 10 INPUTm "YOUR NAME" =$
10 INPUT "m YOURSURNAME", =$

LET Statement

The LET statement permits the programmer to assign numbers and formulas to a variable name.

Example: 10 LET AREA = ½ (b*h)
20 LET JS=" How do you do"
30 LET ANN=50

DATA Statement

The statement (Read and Data) goes hand in hand. Data statement is used to enter data into a program before running the program or before program execution occurs. The data to be entered into the program is read from DATA statement.

E.g. 10 READ A, B, C, D
20 DATA 3, 5, 10, 15

iv. OUTPUT Statement

The result of the processed data is displayed by output statement. The PRINT statement: bring out the processed data. The print statement has the general format.

Example: 20 PRINT D, E, C OR
20 PRINT A, $, C

v. PROGRAM TERMINATOR (END, STOP)

END Statement: this always indicates the end of a BASIC program. When the computer comes across the end statement in a program, the computer automatically ends. End should always be the last statement in the program to indicate the physical end of the program.

STOP indicates when the logical executions of a program should cease.

Example: 40 STOP

Sub-Topic 4: Simple BASIC Statements

Structure of BASIC program

- One instruction or statement per line
- Each line must begin with a line number
- Line numbers are unsigned positive integers
- Line number should increase in steps of 10 to allow for insertion of extra lines during program modification.

Example 1: Write a BASIC program to find the average of three numbers.

Solution:

```
5    REM FIND AVERAGE
10   READ A
15   READ B
20   READ C
25   SUM=A+B+C
30   AVE=SUM/3
35   PRINT AVE
40   DATA 5, 10, 15
45   END
```

Example 2: Write a BASIC program to calculate the volume of a box.

Solution:

```
10   REM FIND THE VOLUME OF A BOX
20   READ L,B,H
30   READ V=L*B*H
40   DATA 3,5,10
50   PRINT V
60   END
```

Evaluation

1. Write a BASIC program to find the average of five numbers.
2. Write short note on program terminator.
3. Explain the following: Character set, constants and variables
4. Example REM statement

Theory

5. List five rules for BASIC programming.
6. Write the full meaning of BASIC

7. Why is BASIC suitable for beginners
8. BASIC is a low level programming language (a) True (b) False
9. The acronym REM in BASIC programming means___ (a) Reminiscence (b) Revenue (c) Response (d) Remark
10. BASIC programs are very difficult to modify____ (a) True (b) False

WEEK 4 & 5: GRAPHIC PACKAGES 1

MEANING OF GRAPHIC PACKAGE

A package is software written to perform a particular task. A graphics use lines, shapes, colours and patterns to show information. Apart from being able to draw lines and other geometric shapes, it is also possible to do full art works and painting in full colours of any kind of objects. Graphic images can be created using computers.

Examples of Graphic Packages

All these can be produced with art illustration graphic software. They are:

i. Paint
ii. Corel Draw
iii. Instant Artist
iv. Harvard graphics
v. Photo shops
vi. Logo graphics

Corel Draw

This can be defined as a high-quality graphic designed and developed for automating artistic functions. Corel draw was developed by Corel Corporation founded in June 1985. This corporation has a network of over 100 distributors in more than 40 countries.

Corel Draw Version

There are many versions of Corel Draw ranges from Corel 5, 6, 7, 8, 9, 10, 11, 12, 14, 15 and 16. The uses of all the versions are similar only with little modifications and improvement to the advantage of the user. However, the teaching will be based on Corel Draw 11 versions.

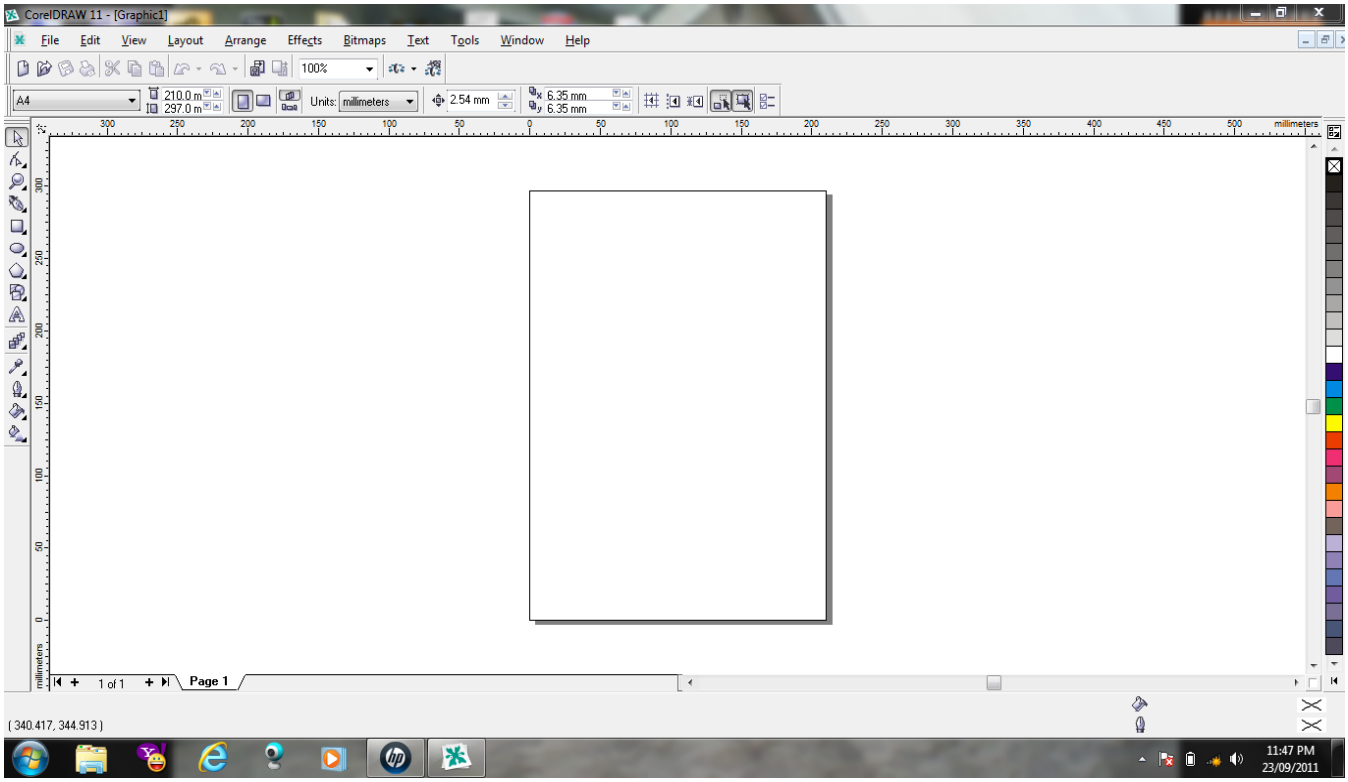
Loading Corel Draw 11

- Click start in the task bar
- Click all programs
- Click Corel graphic suite 11
- Click CorelDRAW 11

OR

Double click Corel Draw ICON

Sub-topic 2: The Features of Corel Draw

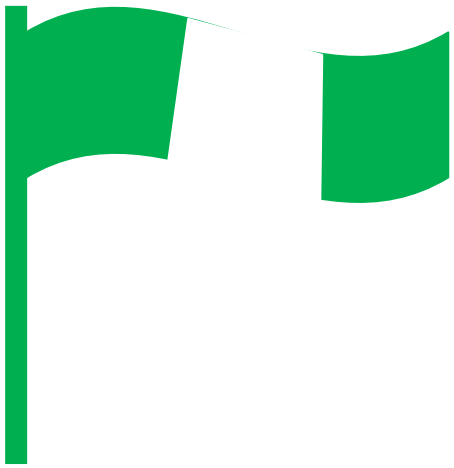


1. **Title Bar:** It displays application name and file name at the top of the package.
2. **Menu Bar**: It displays the various command use to work on the program.
3. **Page Layout**: This is a workspace for user's work. It is otherwise known as printable page.
4. **Standard Tool Bar:** This bar contains icon and commands for performing operations on documents.
5. **Status Bar:** It displays detailed information about programs selected.
6. **Ruler**: This is used for measuring objects in order to obtain accurate size. There are two types: horizontal and vertical.

7. **Properties Bar**: It displays detailed information about graphic/text selected.
8. **Scroll Bar**: They are used for scrolling page layout/work in the desired direction (Horizontal and Vertical)
9. **Colour Palette:** It displays various colours used for colouring any selected object/text.
10. **Tool Box:** This contains the tools used to create, fill, and modify your drawing.

(Show the workspace of Corel DRAW with features; also explain the tools/command in the tool box)

Sub-topic 3: Practical: Using the toolbox to design 'Nigerian Flag'.



Sub-Topic 4: Practical: Using the toolbox to design 'MTN Logo'.

EXERCISE

1. Explain Corel Draw.
2. What is Package?
3. List examples of Corel draw.
4. Which of the following will you use to select any irregularly shaped part of the picture? (a) Free-form select (b) Select (c) Eraser (d) Fill with colour
5. Outline any four (4) examples of graphics packages.
6. What is a trademark?
7. To zoom in on a section of your picture, you should use_____ (a) Magnifier (b) Free-form (c) Brush (d) Zoom tool

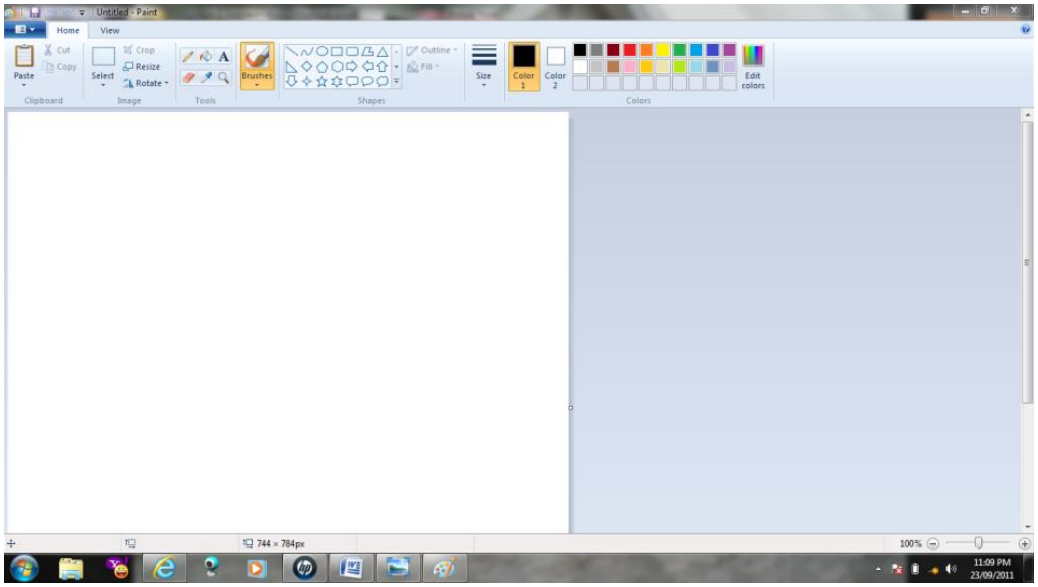
8. Mention any five components of a Microsoft Paint window
9. Where would you likely find the following items in MS-Paint? FILE, EDIT, VIEW, IMAGE, COLOUR AND HELP_____ (a) Status bar (b) Tool bar (c) Menu bar (d) Title bar
10. Which of the following is not a graphics package?___ (a) Adobe photoshop (b) Paint Shop pro (c) CorelDraw (d) Ms-Excel

WEEK 7 & 8: GRAPHIC PACKAGES II: THE PAINT

CONTENT: (i) The Paint Environment - identification of features of the paint environment.
(ii) Paint tools and their functions.

The Paint Environment

Paint is a program you can use to create drawings on a blank canvas or top of other pictures. The program features a tool bar on the left side of the window.



Loading Paint

- Click on the start icon in the button in the bottom left corner of the screen.
- Click the programs option.
- Click on Accessories to see sub menus.
- Click on the paint environment.

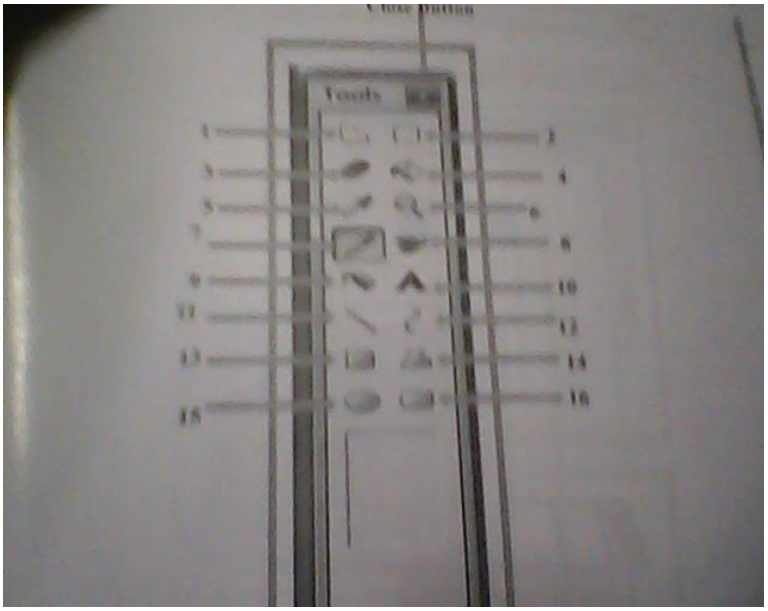
Features of Paint Environment

1. Title bar
2. Tool box
3. Workspace
4. Restore Button
5. Minimize Button
6. Close Button

Sub-Topic 2: Using the tools

Find the tool bar on the screen. The icons on this bar stand for the different things you can do.

The small pictures on the toolbar are called icons. Icon is a graphical representation of a symbol.



No.1 is called freeform tool, is used to select any irregular part of an object or picture.

No.2 is used for selection of a square or rectangular part of the object.

No.3 is called eraser. It allows you to rub out the lines and shapes you have drawn.

No.4 Is used to fill the entire picture or an enclosed shape with colour.

No.5 is used to set the current foreground colour or background colour.

No.6 is called magnifier and is used to zoom in on a section of your object.

No.7 is called pencil and is used to draw thin freehand lines.

No.8 is called brush and the function is to paint thick or shaped free form line and curve.

No.9 is called Air brush and the function is to create an airbrush effect in the object or picture.

No. 10 Is known as text tool and is used to entre text in the object or picture.

No.11 is used to draw a straight line.

No. 12 is used to draw a smooth, curved line.

No.13 is used to draw rectangular shapes.

No.14 is called polygon and the function is to make a shape with any number of sides.

No.15 is used to make eclipse and circles.
No.16 is used to draw rectangular shapes with rounded edges.

Sub-Topic 3: Practical steps on how to draw a house

Steps:

i. Go to paint environment and select any object you want to draw e.g. a house.
ii. You first make use of the rectangle; you place it and then draw another rectangle below the drawn rectangle already.
iii. After that, you will still make use of a square or a rectangular to create a window.
iv. Moreover, you use a rounded rectangle or a curve for the door and then either a dot or a circle for the door knob and you are through with the construction of the house.
v. Nevertheless, if you insist on painting brush and the colour of your desired choice. And if there is any error, you click on eraser and select on the size of eraser you think would be okay for your amendment.

Sub-Topic 4: Practical steps on how to draw a television

Steps:

i. Go to paint and then click on a rounded rectangle and you place it on the page.
ii. You click on the same rounded rectangle but this time around, you thicken it to bring out its beauty, you place it inside the one you have already placed
iii. Moreover, as for the creation of the antenna, you click on line, you draw on top of the rounded rectangle, and as for the picture viewed in the television, you click on clip art and select your image then you are through.

Evaluation

11. Highlight the features of paint.
12. What is pencil and brush use for?
13. Describe how to start Ms-Paint
14. Which of the following will you use to select any irregularly shaped part of the picture? (a) Free-form select (b) Select (c) Eraser (d) Fill with colour
15. Outline any four (4) examples of graphics packages.
16. What is a trademark?
17. To zoom in on a section of your picture, you should use_____ (a) Magnifier (b) Free-form (c) Brush (d) Zoom tool
18. Mention any five components of a Microsoft Paint window

19. Where would you likely find the following items in MS-Paint? FILE, EDIT, VIEW, IMAGE, COLOUR AND HELP_____ (a) Status bar (b) Tool bar (c) Menu bar (d) Title bar

20. Which of the following is not a graphics package?___ (a) Adobe photoshop (b) Paint Shop pro (c) CorelDraw (d) Ms-Excel

WEEK 9 & 10: BENEFITS AND DISADVANTAGES OF ICT

INFORMATION COMMUNICATION TECHNOLOGY (ICT)

ICTs stand for Information and Communication Technologies. They are defined, for the purposes, as a "diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information." These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony.

As a TRANSFORMATION tool:

Information communication technology is so important in the world today that it makes it necessary for every person to be competent in the use of ICT for the task they have to accomplish.

Organization of all sizes, even the smallest schools and businesses, rely on computers to help them operate more efficiently and effectively.

ADVANTAGES OF INFORMATION COMMUNICATION TECHNOLOGY

These are some advantages of information **communication technology**

1. Communication:

Communication has become cheaper, quicker and more efficient. We can now communicate with anyone around the globe by the simple text messaging them or sending them an e-mail for an almost instantaneous part of the world with the help of video conferencing.

2. Cost-Effectiveness:

Information communication technology helps to computerize the business process. Thus, making businesses extremely cost-effective and a money-making machine.

This, in turn, will increase productivity, which will also increase profit and that means better pay and less strenuous working condition.

3. Bridging the Cultural Gap:
Information communication technology has helped to bridge the cultural gap helping people from different cultures to communicate with one another and allowing for the exchange of views and ideas, thus increasing awareness and reducing prejudice.

4. More Time:
Information communication technology has made it possible for businesses to be open 24×7, all over the globe. This means that a business can be open anytime, anywhere, making a purchase from different countries easier and more convenient. It also means that you can have goods delivered right to your doorstep without having to move an inch.

5. Creation of New Jobs:
The best advantage of ICT is the creation of new and interesting jobs. Computer programmers, system analyzers, hardware and software developers and web designers are just some of the new job opportunity created with the help of it.

DISADVANTAGES OF INFORMATION COMMUNICATION TECHNOLOGY

1. Unemployment:
While ICT may have streamlined the business process, it still has created job redundancies, downsizing and outsourcing. This means that a lot of lower and middle-level jobs have been done away with, causing more people to become unemployed.

2. Privacy:
Though information communication technology may have made communication so easy, quicker and more convenient, it has also given rise to privacy issues, from cell phone signal interceptions to e-mail hacking. People are now worried about their private information becoming public knowledge.

3. Lack of Job Security:

Industry experts believe that the internet has made job security a big issue since technology keeps advancing each day. This means that one has to be in a constant learning mode as technology advances in order for one's job to be secure.

4. Addiction:
People tend to get addicted to the internet, especially the youth. When they are supposed to view, read or download something beneficial to them, they will be on the computer playing games, watching movies, etc.

5. Pornography:
The internet serves as a storehouse for several information resources including good and bad. Teenagers are exposed to malicious websites on the internet where they watch pornographic movies. This can affect them psychologically and emotionally.

6. Cybercrime:
Some people disguise themselves as businessmen and women on the internet. They defraud people by obtaining money and other valuables from them using tricks.

INFORMATION COMMUNICATION TECHNOLOGY GADGETS
An information communication technology gadget involves the technology and the applications which are used in creating communication, transmission and storage devices. There are many ICT gadgets which are used in communication technology. Some of them are:

1. Global System for Mobile (GSM):
Global system for mobile communication is an ICT gadget and second-generation digital technology.

GSM is a top-class standard gadget relied on by millions of people worldwide. Today's GSM is a huge success of wireless technology and an unprecedented story of global achievement. It is approximated that 80 per cent of the world used GSM technology while making wireless calls and browsing the internet.

2. Fax Machine:
The fax machine is a device that can send or receive pictures and text over the telephone line. The idea of the fax machine has been around since 1842 when Alexander Bain invented a machine capable of receiving signals from a telegraph wire and translating them into images on paper.

However, the fax machine did not become popular until the mid-1980s. A fax machine consists of an optical scanner for digitizing image on paper, a printer for printing incoming fax message and a telephone for making the connection.

3. Telephone:

The telephone is an electronic telecommunication device used for transmitting and receiving sounds. The most basic function of a telephone is to allow communication between two points, whether they are near or far from each other.

4. Computer System:

The computer system will include computers along with software and peripherals devices that are necessary to make the computer function. Every computer system requires an operating system.

5. Pager:
A Pager is a small telecommunication device that receives and sends alert signals or short messages. It is the size of a pocket calculator and has a built-in miniature keyboard and LCD screen that can display several lines of text.

GENERAL BENEFITS OF ICT
Communication channels are increased through social media, email, discussion groups and chat rooms
Regular use of ICT across different curriculum subjects can have a beneficial motivational influence on students' learning.
It provides faster, cheaper, timely and wider access to information
ICT removes the distance barriers in communication, since any part of the world can be connected
It speeds up transmission and processing of information
ICT aids learning by providing access to a wide range of information
It makes business transactions easy since distance, time and space are not relevant

EXERCISE
1. Mention three benefits of ICT
2. Mention three ICT devices that you own and state their uses.
3. Mention three disadvantages of ICT.
4. Which of the following is not a social networking site? (a) Email (b) Twitter (c) Facebook (d) All of the above

5. Which of the following is a disadvantage of ICT? ____ (a) Ease (b) Speed (c) Cost (d) All of the above
6. Which of the following statement about ICT in education is false?_____
   (a) People can learn different crafts and vocations from Youtube videos
   (b) The Internet has made the modern classroom borderless
   (c) ICT has made education cheaper and easier to access
   (d) None of the above
7. How does ICT cause job losses
8. Describe the role of ICT in banking
9. Outline three general benefits of ICT
10. How does the telephone work