

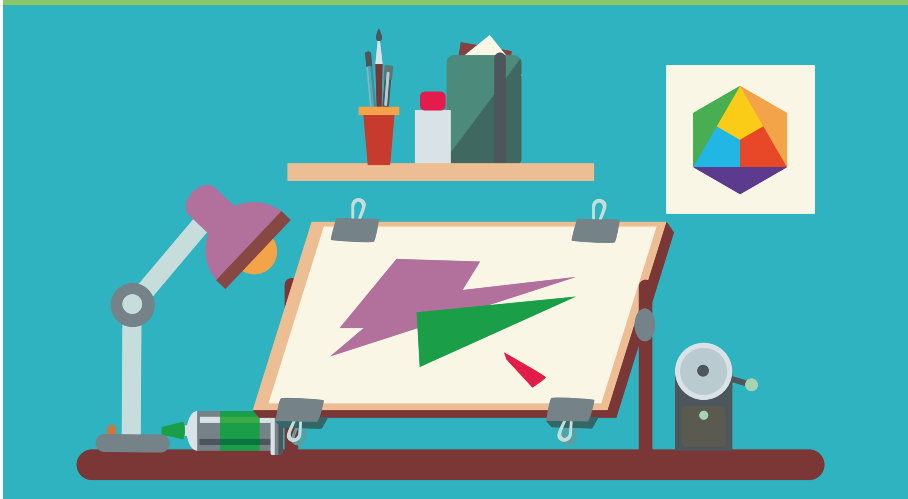
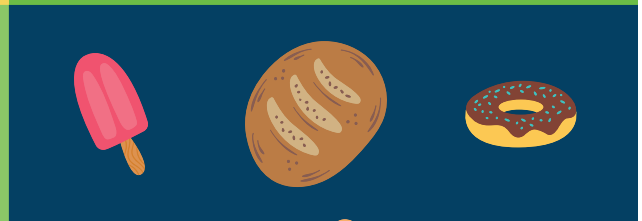
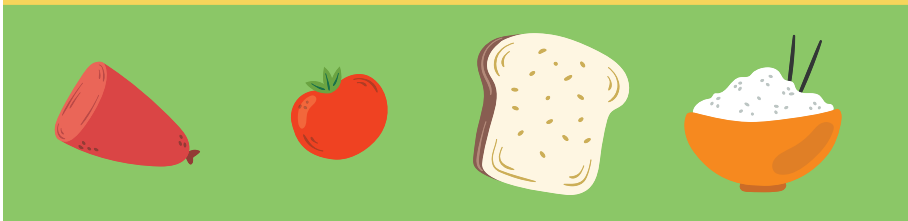
LifeTek-HELE4

Foundational Skills for Life

EDITION 1



Claire D. Bautista
Christalyn Mae V. Cabael
AUTHORS



LifeTek-HELE 4

Foundational Skills for Life

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Authors



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Fourth printing of the first edition, 2024

ISBN 978-621-8266-26-1

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FOREWORD

A livelihood is a necessity in life for adults anywhere in the world. While most people are content to earn a living as an employee, there are those who want to be self-reliant where their livelihood is concerned. Hence, the reason for the creation of the LifeTek-HELE and LifeTek-TLE courseware series by TechFactors Inc. (TFI)

TechFactors understands that it takes both knowledge and skill – applied knowledge – to be able to earn a living on one’s own efforts. Without these, it won’t be easy to make products or provide services for potential customers and clients. The LifeTek-HELE and LifeTek-TLE courseware teach livelihood education in a way that enhances both; adding information to knowledge that students may already know by way of discussion and using performance-based lessons to develop skills that students can employ later on in their work.

With the use of the Techfactors LifeTek-HELE and LifeTek-TLE courseware, livelihood educators would be able to focus on their ultimate goal for every Filipino student—to make them productive and contributing members of Filipino society.





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About this Resource

The LifeTek-HELE 4 module aims to provide students education that focuses on practical proficiencies for the home front as well as skills that are essential in life. This will enable the grade-schooler to be of help to themselves, be productive in their family and community, as well as be prepared for higher levels of education. Subjects include ICT and Entrepreneurship, Home Economics, Industrial Arts and Agriculture, all of which revolve around related technologies.

Learning Outcomes

At the end of the course, the learners will be able to...

1. Acquire knowledge that provides opportunities to explore different livelihood fields.
 2. Practice ways to acquiring 21st century skills.
 3. Improve the chances of livelihood success by developing self-help habits.
 4. Demonstrate the ability to produce products by providing learners a meaningful and productive learning experience.
- 

HOW TO USE THIS RESOURCE



LEARNING OUTCOMES

Each lesson has its own set of learning goals. This informs the readers on what is expected to be learned by the end of the lesson.



ENGAGE

This is a brief and fun activity that is related to the topic that can help in attracting the attention of the students.



EXPLORE

This is an assessment tool that is administered before the discussion and is used to determine the student's prior knowledge on the subject matter.



RESEARCH

This is an activity for the student's additional knowledge and information before the lesson discussion.



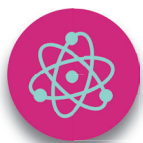
EXPLAIN

This is where the main content of the lesson is found.



EXERCISE

This contains exercises after the discussion.



SUMMARY

This is a synopsis of the lesson.



LESSON OUTPUT

This is an individual or group project to determine the student's practical mastery of the subject matter.

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ICT and Entrepreneurship

Entrepreneurship

1



ICT

2



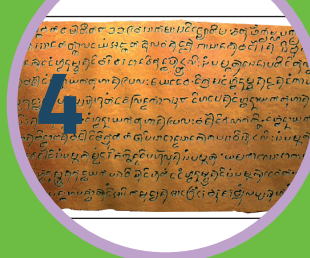
Use of ICT

3



Organizing Files and Data with ICT

4



Basic Graphic Software

5



Lesson 1

Entrepreneurship

TRIVIA



Not all entrepreneurs are motivated by money. Some go into a business because of a cause or a purpose, or, simply to provide for those in need.

A Filipina engineer turned entrepreneur, **Aisa Mijeno** has developed a saltwater-powered lamp called SALT (Sustainable Alternative Lighting). The idea behind her invention is to replace lamps that use a flame, like kerosene lamps which are used in areas of the Philippines that have no electricity. Mijeno saw that these flame lamps were both health and fire hazards, which led her to develop an

alternative light source that doesn't require setting fire to fuel or burning something.

Mijeno has made it her mission to end the use of flame lamps, and because of this, she has been recognized for her work and given awards in different countries.



LESSON OUTCOMES

At the end of the lesson, you are expected to:

1. Describe the meaning and importance of entrepreneurship.
2. Discuss the characteristics of an entrepreneur.
3. Discuss the different types of business.



ENGAGE

If you were an entrepreneur, what product or service would you offer to solve two of the five given problems?

Problem # 1: Plastic pollution



Problem # 4: Abandoned pet animals



Problem # 2: Waste from clothes (fast-fashion waste)



Problem # 5: Frequent fire accidents



Problem # 3: Excessive cutting of trees to produce paper and materials for housing, furniture, etc.



Solution to Problem # ____

Solution to Problem # ____



EXPLORE

Multiple Choice. Choose the letter that best answers each statement or question.

- ____ 1. The idea of developing and managing a business.
- a. marketing
 - b. entrepreneurship
 - c. business management
 - d. advertising
- ____ 2. The term used for people who create a business.
- a. employee
 - b. sellers/vendors
 - c. celebrities
 - d. entrepreneurs
- ____ 3. An entrepreneur is someone who:
- a. works for others to get paid.
 - b. works and runs their own business.
 - c. manages a business that has been put up by someone else.
 - d. none of the above

- ____ 4. What does an entrepreneur provide to customers or clients?
- a. advice
 - b. product or service
 - c. network of people or connections
 - d. money
- ____ 5. What is the main goal of entrepreneurs for starting a business?
- a. gain profit
 - b. gain fame
 - c. gain connections
 - d. gain employees
- ____ 6. What is a characteristic of a person who gives a lot of effort to achieve goals?
- a. risk-taker
 - b. creative
 - c. goal-oriented
 - d. hard-working
- ____ 7. What would a person who pursues challenges despite the chance of failing be called?
- a. risk-taker
 - b. hard-working and persistent
 - c. creative
 - d. goal-oriented
- ____ 8. What would a person who thinks outside the box and doesn't repeat the same idea be called?
- a. creative
 - b. visionary
 - c. risk-taker
 - d. hard-working and persistent
- ____ 9. A business can thrive and stand out from others if the entrepreneur possesses this trait.
- a. diligence
 - b. goal setter and decision maker
 - c. being knowledgeable
 - d. Innovation
- ____ 10. A characteristic of an entrepreneur that enables him to develop trust from both employees and clients.
- a. optimism
 - b. risk-taking
 - c. charisma
 - d. responsibility



RESEARCH

Give a few details of a known entrepreneur who has or had created a business not for personal gain, but for helping people or solving one of the problems of society. Follow this format for your research:

Entrepreneur's name:

Company's name:

Date or year the company was established:

Summary of how the entrepreneur established the company:

Afterwards, answer this follow-up question:

Based on the information that you've gathered about the entrepreneur and the company, what are the things that you like about the person you've chosen to share, as well as any realizations that came into mind?



EXPLAIN

As the cost of living goes up, people try to find new ways to earn money for themselves and their family. Some find jobs while others become entrepreneurs (they might put up a business or two, for example). But either way is not an easy thing to do. So, how does one succeed in entrepreneurship? One way you can find out is by reading about the life of successful business people in articles and news features, whether on print or online.

Definition of Terms

Entrepreneurship – ability to develop, organize and run a business.

Entrepreneur – someone who builds an idea into a business.

Start-up – term used to refer to new businesses, or those businesses that are in the process of becoming established.

Characteristics of an Entrepreneur

Hard Working and Persistent

Entrepreneurs are known for being hardworking and persistent. This means that they are people who will work for long hours to reach their goals in spite of the challenges.

Hard work refers to the effort put into the task, while persistence, or the willingness for prolonged engagement that leads to completion, are both required for the achievement of goals

A student like you can also show hard work and persistence, both of which can earn you good rewards from your parents, school or teachers.

Socorro “Coring” Ramos is a Filipino entrepreneur who was hardworking and persistent in achieving her dreams. As a young girl, she sold fruits in a “*palengke*” or local market with her mother. It put food on the table but what she earned was not enough to pay for her schooling. She found a job at a bookstore where she met her husband, Jose. Later, they decided to put up their own bookstore. Selling books on their own wasn’t easy, but they didn’t give up. Today, their store, *National Book Store*, is one of the largest book shops in the Philippines.

Ability to Set Goals and Make Decisions

Goal setting is important for entrepreneurs. A goal is similar to a dream that you wish to become real, like scoring a buzzer-beating three-point-shot in a game of basketball, or a new video game console. A goal can be as simple as wanting to get the highest score in a test or as grand as graduating as the valedictorian in school.

Entrepreneurs are goal setters. For them, a goal is an idea or result that they want to achieve for their business.

Making decisions, on the other hand, is also important for entrepreneurs. Decisions are part of making goals happen. But in making decisions, being careful is important, because there are decisions that you can't take back once they've been made. Without goals, a business could fail.

Motivated and a Risk-Taker

If your parents ask that you do well in school in exchange for something you've always wanted, you will no doubt feel excited. That feeling is part of what motivation is all about.

Motivation is the desire to do something in order to reach a goal. Being rewarded for a job well done is an example of something that can motivate people. It helps entrepreneurs or anyone to accomplish a task or reach a goal with ease no matter how difficult it is.

But aside from motivation, entrepreneurs are also risk-takers. *Risk-taking* means that a person will act or give a decision even if something bad may happen.

Entrepreneurs are risk-takers because they need to think and create new ideas for their business. A new idea can be successful, but it can also fail.

Passion

Passion is defined as having a strong emotion or desire towards someone or something. Dancers, painters, and singers are examples of people who have passion in what they do. Having a passion towards someone or something makes a person always give his or her best. In turn, they are appreciated, given rewards and receive recognition for their hard work.

Entrepreneurs are also like that. Their passion is fueled by the goals that they want to reach for their business.

Walt Disney, the creator of Mickey Mouse, for example, found his passion in drawing at an early age. He began working when he was only 18 years old. Eventually, his love for art paved the way for his success. Walt Disney is known for running one of the oldest and best-known animation studios, as well as developing some of the largest theme parks in the world. His works have influenced a lot of people and have brought joy to millions.

Creativity and Innovation

Entrepreneurs are creative. They show their creativity by thinking of new or unique ideas for their business.

Entrepreneurs are also innovative. This means that they can find and bring new ways to solve a problem and give solutions to their customers.

Filipino entrepreneur, Dado Banatao, is a good example of how creativity and innovation can make one a successful entrepreneur. He is known for creating new developments for computers.

Born in Cagayan Valley, Dado was raised by a rice farmer and a housewife. Like Socorro Ramos, Banatao didn't come from a well-off family. It was said that early on, he went to school barefoot, but he was still able to study and graduate from college.

Dado achieved many things. He worked for technology companies in the United States and later established his own business. His creative ideas and innovative ways allowed him to bring new developments to technology. Some dubbed him as the "Bill Gates of the Philippines," because of these achievements.

Difference Between a Businessman and an Entrepreneur

A businessman and an entrepreneur are not the same.

A businessperson thinks of a business that will make money for profit. If coffee and milk tea are popular, for example, these will likely be attractive for a businessman. Depending on the situation, there's always the possibility that a business could fail.

Entrepreneurs, on the other hand, do not simply rely on what's popular or trending. Instead, they focus more on bringing something new for consumers which could earn them money.

Character Poster

Among the things that make entrepreneurs inspirational are their characteristics. A fun way to begin to know, if you have what it takes to be an entrepreneur is by creating a character poster. A character poster is a type of artwork which someone like yourself illustrates in a way that represents who you really are.

Safety Precautions

In creating an artwork like a character poster, art materials such as pencils, paints and scissors are harmful or can cause accidents if not handled properly. So before doing the activity, first, read and follow these safety rules:

1. Always keep all your materials in one place. Don't leave them scattered around for someone to step on and cause injury.
3. Don't inhale paint fumes. When painting, open the windows and the door of your workroom to let fresh air inside the room or work outdoors.



2. Make sure that pointed and sharp tools like pencils, pens, and scissors have a safety cover or are stored in a safe container.



4. Don't eat or drink while working on art projects. Have a separate area for eating or drinking.



5. Never play with your tools and materials. Art materials like paint can have harmful chemicals that can be poisonous or cause skin irritation.

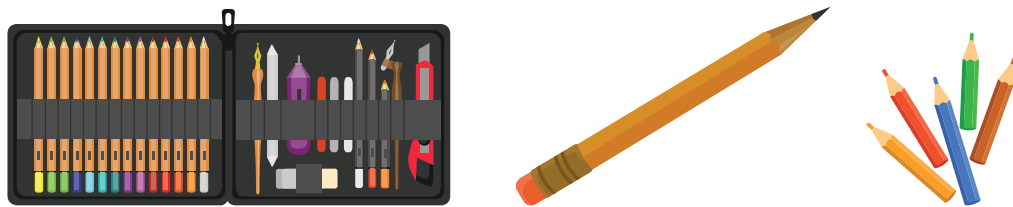


Tools and Materials for Creating a Character Poster

The following are tools and materials you can use to make your character poster:

Pencil

A pencil is commonly used for drawing or sketching. It can be plain black graphite or colored.



Crayons/Oil Pastels/Poster Paint

Aside from colored pencils, there are other coloring materials you can use like crayons, oil pastels, and poster paints.



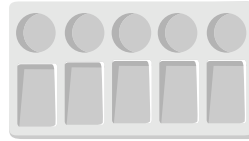
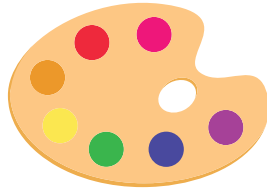
Paint Brush

A paint brush is used to apply paint on your artwork.



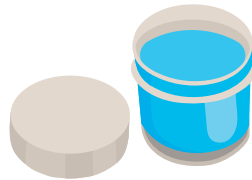
Palette

This is used for mixing different paint colors.



Any Small Bucket or Cup

This holds the water you need for cleaning your brush.



More Tools and Materials

- Magazines
- Scissors
- Glue
- Colored Paper

Steps/Procedure for the Activity



1. Prepare all the materials you will use in creating your character poster.
2. Take a picture of yourself or find a recent photo.
3. Use your photo as a reference for drawing your character poster.
4. Start by making a sketch of your character.
5. After finalizing your drawing, color it.

In Business

You can get ideas on the Internet for products or services you can provide as a business. Simple food dishes or practical crafts are great choices. Snacks like sandwiches and pastries can be sold to your classmates, friends, and neighbors. Crafted items like bracelets or other accessories can be quite popular with lots of people. Offering these will challenge your creativity and earn you money as well.

3 Major Types of Business

1. Service – this offers help, assistance, convenience or comfort to customers.
Examples are: Repair, Laundry, Delivery and Taxi services.
2. Merchandising – buying and selling of products for profit.
Examples are: Sari-sari store, Department stores, Appliance store, Plant shop and E-commerce sites (e.g., Amazon, Shopee, Lazada).
3. Manufacturing – make and sell their own products to gain profit.
Examples are: Clothing shop, Shoe shop, Printing shop, Publishing house, Cellphone company and Pharmaceutical company.



EXERCISES

Exercise 1

Answer True if the statement is correct, if not, answer False.

- _____ 1. Establishing a business is easy, especially if you have a lot of money.
- _____ 2. Hard work means being capable of handling challenges in order to reach one's goals.
- _____ 3. Goals are what make a person strive to work hard.
- _____ 4. Passionate individuals cannot become successful entrepreneurs.
- _____ 5. Risk-taking is what drives a person to make effort.

Exercise 2

Answer **S** if the business is a Service, **ME** if it is an example of Merchandising, and **MF** if it is an example of Manufacturing.

- _____ 1. Laundry
- _____ 2. Delivery
- _____ 3. Printing shop
- _____ 4. Cellphone company
- _____ 5. Clothing shop

Exercise 3

Complete each statement.

- _____ 1. Creativity is the _____ of generating new ideas.
- _____ 2. _____ means strong emotions or feelings towards something or someone.
- _____ 3. _____ is the term used for new businesses.
- _____ 4. Innovation is the process of _____ new ideas.
- _____ 5. Socorro Ramos is the founder and owner of _____.

Exercise 4

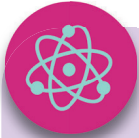
Match the words in column I with the related sentence in column II by writing the correct letter on the blank.

Column 1

- ____ 1. Entrepreneur
- ____ 2. Dado Banatao
- ____ 3. Walt Disney
- ____ 4. Creativity and innovation
- ____ 5. Entrepreneurship

Column 2

- a. Creates products and services with unique features and capabilities
- b. Someone who showed his creative passion at an early age
- c. The concept of establishing a business
- d. One who aspires to have an established business
- e. Established his own technology company



SUMMARY

Entrepreneurship involves creating a business. Entrepreneurs are people who work to create something new and make a business out of it in spite of the risks involved. Becoming an entrepreneur is not an easy path, and those who succeed are well-regarded for their success and passion.



LESSON OUTPUT

Make your character in a form that represents a person. Write your name in the top box. Then, in each of the remaining boxes, write one characteristic of an entrepreneur.

Four empty rectangular boxes for writing, connected by red lines to the right side of the person outline.

Lesson Output Rubrics

CRITERIA	5	4	3	2	1	POINTS
1. Content/ Functionality	All 3 criteria for the activity were met.	All 3 criteria for the activity were met but were not exactly as instructed.	Only two of the criteria for the activity were exactly met.	Only one of the criteria for the activity was exactly met.	None of the criteria for the activity was met.	
2. Creativity	The student showed outstanding creativity using imagination in the activity.	The student showed adequate creativity creating original visuals in the activity.	The student showed a fair level of creativity adding decorative elements in the activity output.	The student showed some creativity using different media on a template in doing the activity.	The student used only the given template and the answers were inadequate.	
3. Promptness	The activities and exercises were completed two or more days ahead of the given deadline.	The activities and exercises were completed one day ahead of the given deadline.	The activities and exercises were completed by the given deadline.	The activities and exercises were completed one to two days after the given deadline.	The activities and exercises were completed three days after the given deadline.	
TOTAL						

TRIVIA

At 10:18 AM of March 29, 1994, the Philippines was linked to the world through the Internet at the University of San Carlos (USC), Talamban, Cebu. The occasion was the first International Email Conference organized by Dr. John D. Brulé of Syracuse University and the USC. According to a speech from Dr. Rodolfo Villarica of PH.NET, a cheer occurred when this happened because Cebu, for the second time since 1521, historically became the place where the country once again connected with the world.



LESSON OUTCOMES

At the end of the lesson, you are expected to:

1. Define what ICT is.
2. Differentiate between computer, Internet, and e-mail.
3. Discuss rules in using computers, the Internet and email.
4. Explain the risk of virus and malware.
5. Enumerate safe and responsible use of computers, the Internet and e-mail.
6. Discuss how to reply to an e-mail message.
7. Send an e-mail with an attached document or other media file.
8. Create an e-mail account and send a message using it.



ENGAGE

Learn a few things about the history of communication by watching this short animation video: <https://www.youtube.com/watch?v=0ay2Qy3wBe8>





EXPLORE

Part I. Match the word from GROUP A to the set of pictures in GROUP B. Place your answer on the blank given in each item.

GROUP A

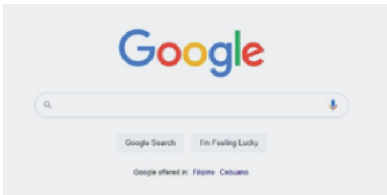
Computer	Telephone
Radio	Internet
E-mail	Mobile phone

GROUP B

SET 1

		
1. _____		

SET 2

		
2. _____		

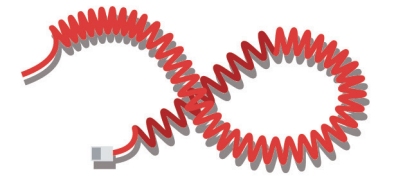
SET 3

		
3. _____		

SET 4

		
4. _____		

SET 5

		
5. _____		

Part II. Complete the following sentences. Choose your answers from GROUP A in Part I of the pre-test.

6. Larry always sends an _____ to his best friend living in Canada.
7. The _____ is an interconnected, weblike network of information on various subjects you can look for, similar to how a web-like works.
8. A _____ is a large electronic device that can do many tasks, like writing a letter, playing videos, sending an e-mail and surfing the Internet.
9. Mary is always fascinated with old devices for communication. So, she likes hearing the news through the _____ instead of watching it through TV.
10. A _____ is one of the oldest devices for communication that still exist today.



RESEARCH

List down (5) examples of ICT devices with an image included. Also, give a brief description and the function of each example.



EXPLAIN

Technology is everywhere. You can see it all around, both in your home and outside it. Technology contributes greatly to communication and information. Because of technology, people today are able to interact, learn and accomplish tasks with a single device with the help of the Internet.

Definition of Terms

Information and Communications Technology (ICT) – refers to all technologies and related technological devices that were developed for communication and for gathering and spreading information, such as the Internet, computer, telephone and radio.

Telecommunication – refers to the exchange of information through wires or electrical signals that are sent or received by electronic devices such as telephones, radios and computers.

Computer – is a large electronic device that can store and process information. It helps people write, watch videos, play games and surf the Internet.

Internet – is the interconnected network of computers all over the world.

E-mail – stands for electronic mail. It enables someone to send and receive a message to and from another person through the Internet.

E-commerce – is the exchange of goods and services over computer networks.

Information and Communications Technology

ICT, or Information Communications Technology, refers to all technologies and technological devices that involve information and communication. Among these devices are the telephone, radio, computer, mobile phone, the Internet and software applications like Facebook, Instagram and Twitter.



The term **telecommunication** is more specific. Telecommunication refers to technologies that transmit information through wires, cables or electrical signals, like the telephone, radio and the Internet.

The *Internet* is a technology that has changed the world greatly. Before the Internet, communication was limited, expensive and slow. People had to wait for months to receive letters, and sending messages through telegraph was expensive. Thanks to the Internet, messages can now be sent and received instantly, and people who are thousands of miles away can meet and communicate immediately through video calls.

The Internet has made communication less expensive and more convenient. One way messages are exchanged through the Internet is through e-mail. *E-mail* means “electronic mail,” and it is created using an electronic device like a computer, by which it is sent and received through the Internet.

What Is a Computer?

A computer is a machine that can process and store information. With it, people can write, watch videos, play games or surf the Internet.

A computer is made up of different components. The **monitor** is similar to a television screen and is where you will view the data that are processed and stored in the CPU. The **keyboard** is composed of keys of letters, numbers, symbols and other functions which are needed to create letters or documents on a computer. The **CPU**, or the Central Processing Unit, is where the data and information are processed and stored. It is the “brain” of the computer, and is thus the most important part.

Desktop and portable computers are the commonly used types of computers. A desktop computer’s components and other accessories are separate from each other, while a portable computer’s components are put together to form a single device. Laptops and netbooks are examples of portable computers.



Smartphones and tablets are also common devices that people use today to communicate with each other, as well as to do different tasks. These devices are more compact than laptops and use touchscreens.

The Internet

The **Internet** is defined as the world-wide, interconnected network of computers. Through it, information can be communicated from one computer to several computers all around world.



The Internet began in 1969, when the US Department of Defense launched the first computer network, the Advanced Research Projects Agency Network, or ARPANET. By 1981, 200 sites were connected together into a network. Over the years, more networks joined, making the network bigger, resulting in the present-day Internet. The Philippines itself became officially connected to the Internet on March 29, 1994, through a terminal at the University of San Carlos in Cebu.

The Internet has made major changes in the way information is spread and gathered. The **World Wide Web**, or WWW for short, is a system of sharing information through the Internet. It was invented by British scientist **Timothy John “Tim” Berners-Lee** in 1989.

The Web contains web pages that have hyperlinks. Clicking on one of these **hyperlinks** will bring you to a web page, a part of a web page or to a file or program found on the web page.



How Does E-mail Work?

E-mail, or electronic mail, is a way to send and receive messages through the Internet, and is created using an electronic device like a computer. This method of sending and receiving messages was created by Raymond Samuel Tomlinson in 1971.

An email account is required for you to create an e-mail. An **e-mail account** is a personal account where you will create, send and receive messages. You need to use a username and password for your account, so think about what you would use for these. The **username**, or account name, is the name that identifies your e-mail account. It's also called an **email address**. Just like your house address, your e-mail address tells other people where to send e-mails to you. A password is like a private key made up of letters, number or symbols, so nobody else can use your account, just like only you should use your own house key to enter your house. Do not share your password with anyone else, and always keep your username and password in mind. You will need it to access your e-mail account.

Safety Precautions when Using a Computer, Laptop, Tablet or Smartphone

Using a computer, laptop, tablet or mobile phone can be dangerous if these are not used properly. Before you use one of these devices, read, follow and remember these safety rules for your own protection:



1. Don't eat near your computer or laptop. Spilling food or liquids on these devices can damage their internal parts and could destroy them.
2. Do not use your device while it's charging.
3. Turn off the power and unplug the device after you're done using it.
4. When plugging and unplugging, don't touch the metal part of the plug. Hold only the plastic or rubber part of the plug.
5. Keep your working space clean and organized.
6. Don't get too close to your computer's monitor, or your device's screen, because doing so will cause eyestrain and headaches.

Safety Precautions in Using Software, the Internet and E-mail

Along with computers and the Internet came a number of tools that invade privacy at different levels which is alarming. Any information about you that is found on the Internet can be seen and used by people all over the world.

Some tools on the Internet that invade privacy are like malware. A malware is a kind of software that steals data or harms a computer. A common example is a computer virus.

A computer virus is as harmful to a computer as a living virus is to a human being. A computer infected with a virus can spread the virus once it is connected to the Internet. It is important for you to learn how computer viruses work so you can protect your computer.

Here are some ways to protect your computer from viruses:

1. Turn on security features of your computer to protect it from viruses.
2. Install antivirus software like McAfee VirusScan, Norton AntiVirus, and PC-cillin.
3. When you download from the Internet, make sure the source is trustworthy.
4. Be wary of the websites you visit. You can get malware and viruses by just visiting a one. Avoid clicking random buttons on websites which can trick you to download a malware or virus.
5. Be cautious in using memory cards and flash drives. They can spread viruses because they are used on different computers.
6. Do not open an e-mail attachment that has the following file extensions: .exe, .com, or .vbs, unless you are expecting it from someone you know.

Safe and Responsible Use of Computers, the Internet and E-mail

1. Protect your computer from malware. Follow safety rules when using the Internet or inserting flash drives in your computer.
2. Use computers and the Internet for learning or to do productive activities.
3. When surfing the Internet, let your parents see the sites you are visiting so they can check if they are safe for you. If something on a website bothers you, tell it to your parents right away.
4. Let your parents install or switch on security features so they can limit your postings and access to certain websites.
5. Information and photos you have posted online may be seen by other people, so make sure that you post only those things you are willing to let others see. If you are not comfortable sharing something about yourself, then do NOT post it.
6. Be cautious when chatting online or joining forums. If you feel uncomfortable or sense something wrong with a certain message sent to you or with the person you are chatting with, quit the chat, then tell your parents about it.
7. Keep in mind to always say who you are when messaging someone. Be polite with your words and don't forget to add greetings.
8. Don't engage in chain e-mails or forwarding malicious messages.
9. Reply to emails, if possible, as soon as you receive them. Do not reply to those that seem suspicious. Allow your parents or an adult you trust to check these kinds of e-mail.
10. Keep all the files in your computer and e-mail inbox organized.

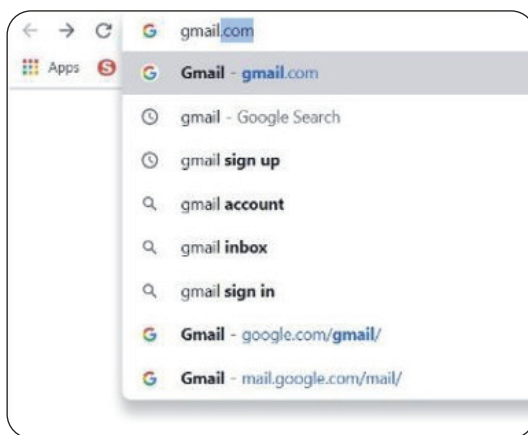
Tools and Materials Needed

To start creating an e-mail, you first need a computer, a laptop, a tablet or a smartphone. Turn on your device and connect it to your Internet provider. Once you have done this, you can create your e-mail account.

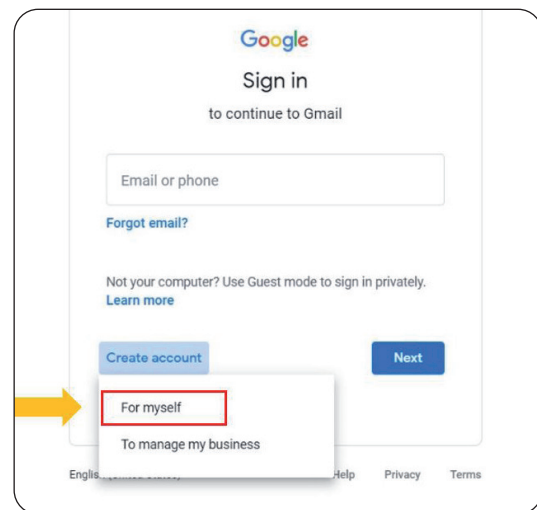
Getting Started in Using Email

When exchanging emails, both the sender and recipient are required to have an **e-mail account**. There are different e-mail providers that you can choose for your e-mail account. Among the popular email providers are Gmail and Yahoo! Mail. For the purposes of this lesson, you will create an account in Gmail.

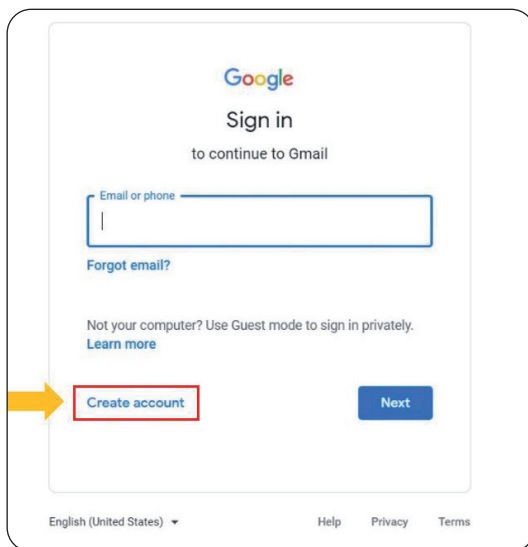
1. Visit the webpage of Gmail, or type "gmail.com," in the search box of your browser.



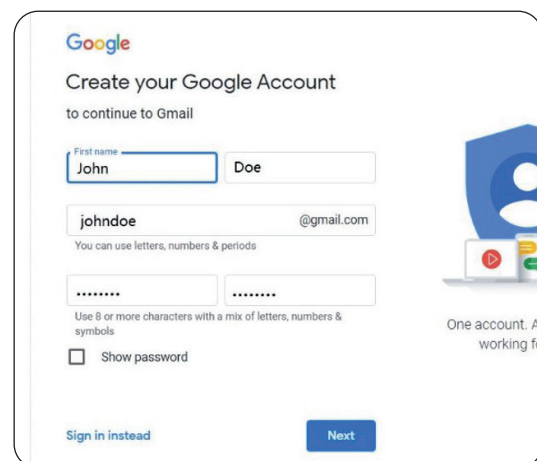
3. Click on the option, **For myself**.



2. On the Sign in page of Gmail, click on the **Create account** button.

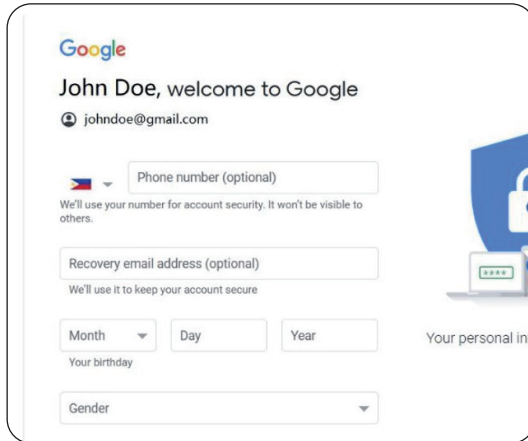


4. The page will now change. On this new page, create your **username** and **password**.



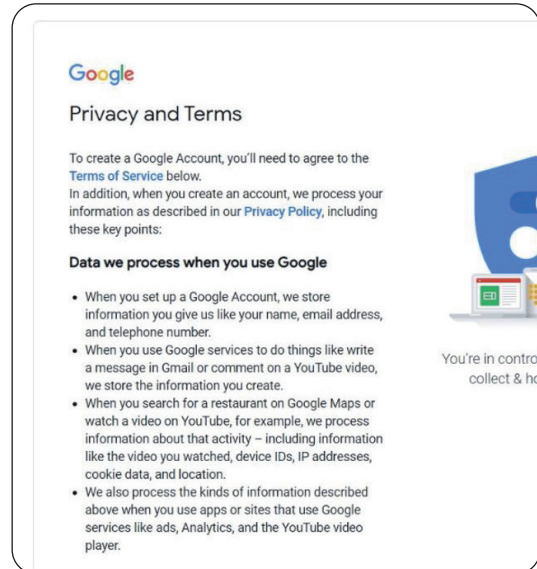
Once you're done creating your username and password, click **Next**.

5. Gmail will now open up another page and ask you for information, such as your phone number. You can leave most of these blank, but you need to give your birthday and gender to create your account.

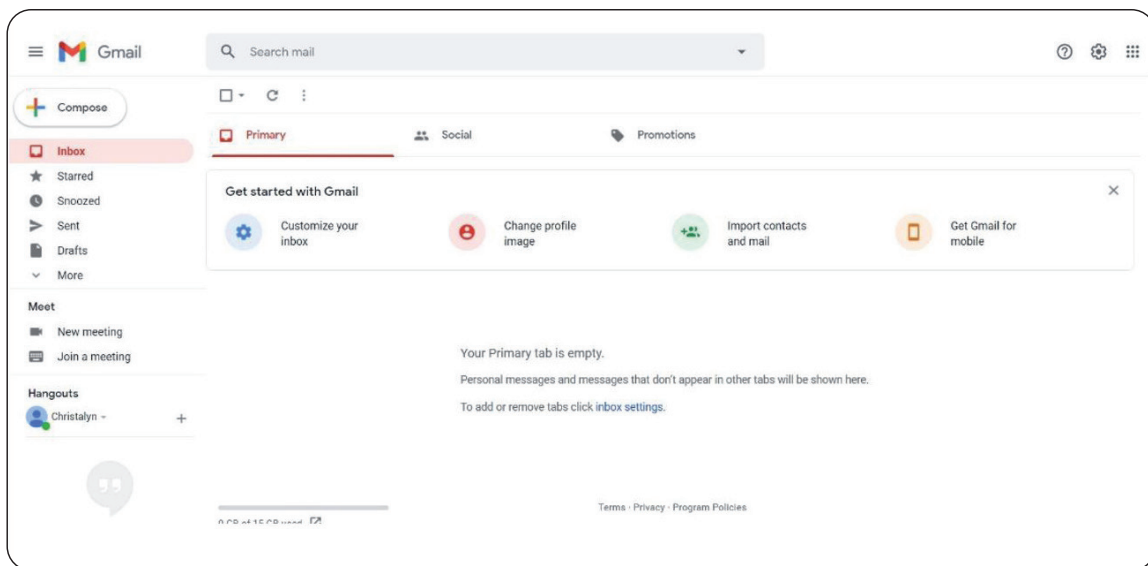


Once you're done, click the **Next** button.

6. Google will then open up the last page and ask you to agree on their Terms of Service. You will have to scroll down and click the **I agree** button on the bottom of the page to proceed to the next step.



7. Once you agree to the Terms of Service, you will be directed to your e-mail account page.

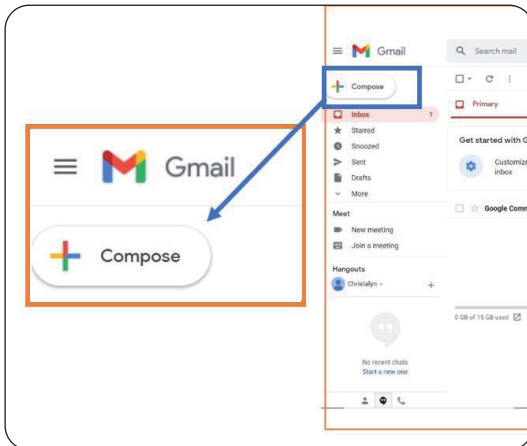


Congratulations! You just created your e-mail account!

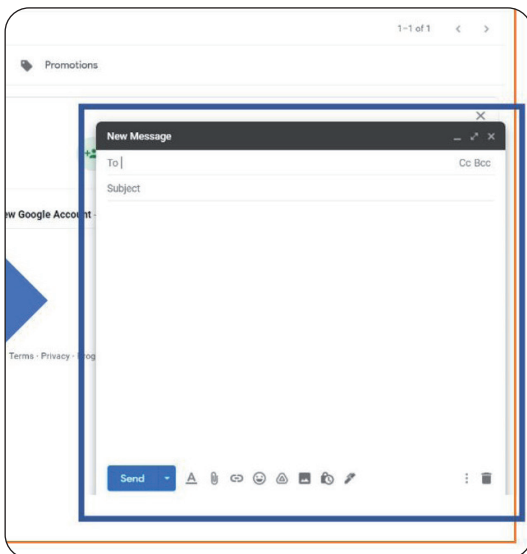
Sending an E-mail

How to create and send an e-mail in Gmail.

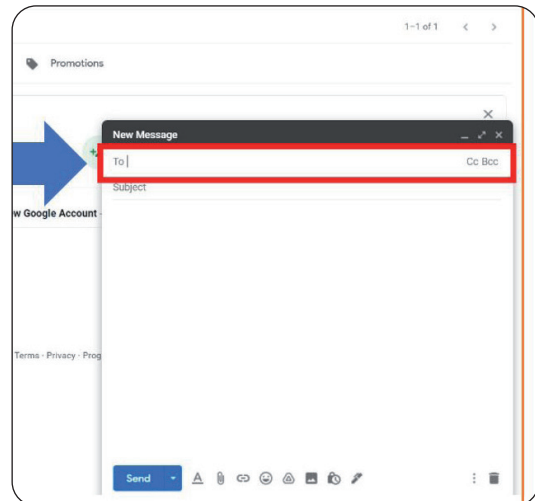
1. Click the Compose button. The **Compose** button is found at the top left of the page, or below the Gmail logo.



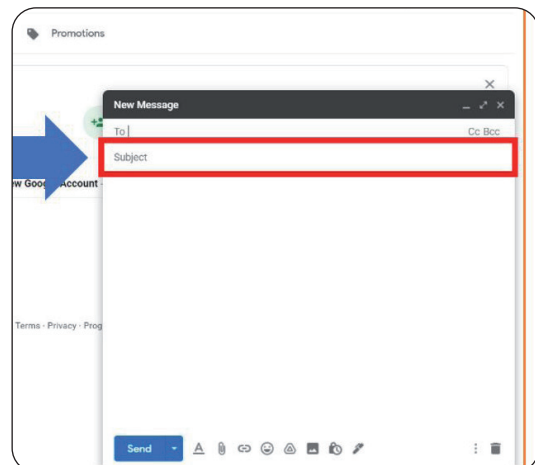
2. After clicking the compose button, a box will appear at the bottom right of the page. This box says **New Message**, and is where you'll compose your message.



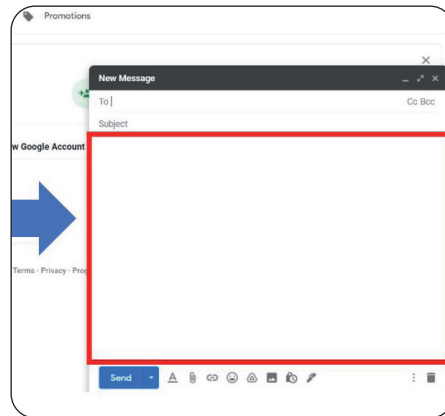
3. On the **New Message** box, you will see a "To" section. The "To" section is where you will input the username or e-mail address of the person to whom you will send your message.



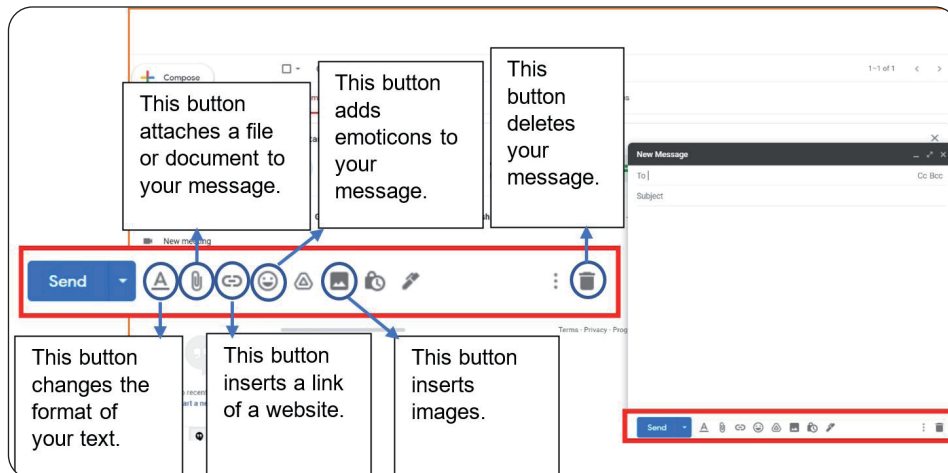
4. Below "To" is "Subject." The Subject section is where you will create the title of your message. You need to make a title for your message so the receiver of the message will know what your message is about.



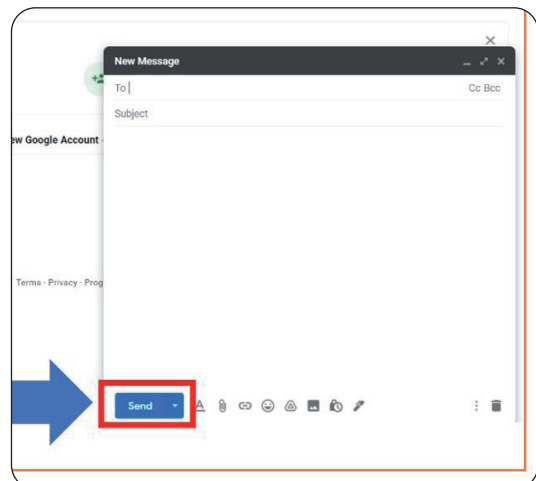
5. The third, and largest section of the box is where you'll compose your message.



6. Before clicking the **Send** button after you've composed your message, look at the icons on the bottom section of **New Message**. These icons represent things you can add in your e-mail, such as emojis/emoticons, images, documents and links.

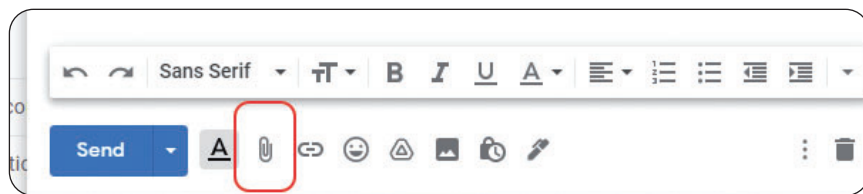


7. Once you're done composing your message, check to see if the e-mail address is correct, the subject fits with the message, and that your message is complete. Once everything is okay, click the **Send** button.

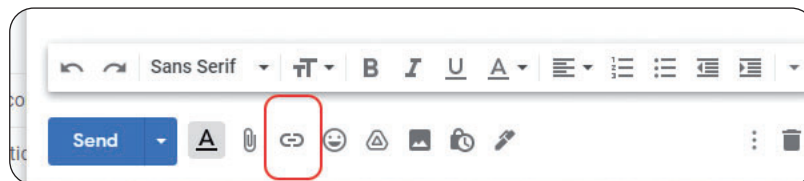


How to Attach Documents, Links and Photos to an E-mail

1. Log into your e-mail account.
2. Click the button for composing a new message or replying to someone's e-mail.
3. You will see a space where you can compose your message; under this space is a toolbar with the buttons for attaching a document or other things you want to add in your e-mail.
4. To attach a document file, click the paper clip icon.



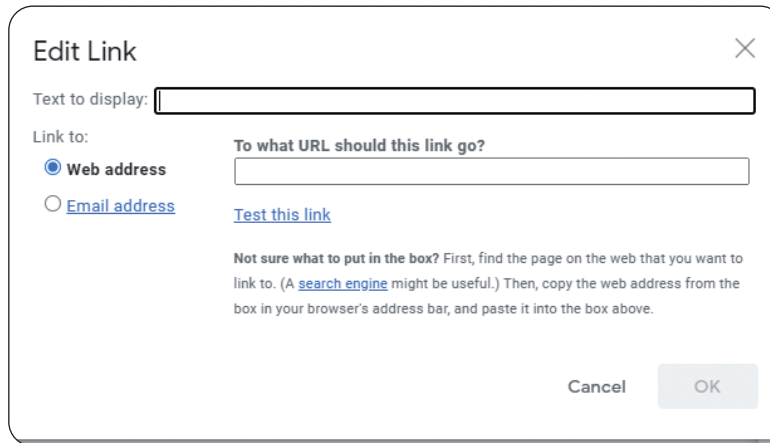
5. A window will appear that will allow you to find the file that you want to attach in your e-mail. Once you've found and selected the file, click Open.
6. Wait until the file has finished uploading, then click Send.
7. Now, if you want to add a link in your e-mail, click the button next to the paper clip icon. The button has an icon shaped like a chain.



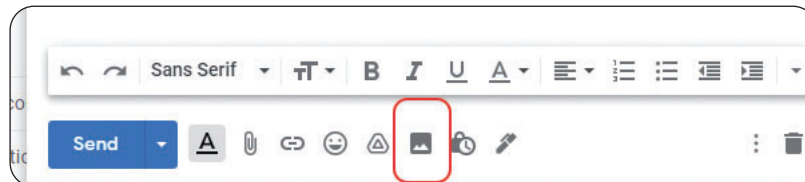
A dialog box will then appear.

8. Copy the whole web address that you want to attach, and paste it into the box indicated for web addresses.

You can use words, phrases or sentences as links instead of the whole web address to make it shorter. To do this, type in the word or words in the box labeled “Text to display”

The image shows a 'Edit Link' dialog box with a close button (X) in the top right corner. It contains a 'Text to display:' text box. Below this, under 'Link to:', there are two radio buttons: 'Web address' (selected) and 'Email address'. To the right of the 'Web address' radio button is a text box labeled 'To what URL should this link go?'. Below the 'Email address' radio button is a blue link labeled 'Test this link'. At the bottom, there is a paragraph of instructional text: 'Not sure what to put in the box? First, find the page on the web that you want to link to. (A search engine might be useful.) Then, copy the web address from the box in your browser's address bar, and paste it into the box above.' At the bottom right are 'Cancel' and 'OK' buttons.

9. If you want to insert photos directly into the body of the email, click the icon/button that says “Insert Photo”. Another dialog box will appear on your screen, which will show you several options of where and how you can add images in your e-mail. *Note to artist: add the icon/button for inserting a photo in Gmail.



Aside from Gmail, another e-mail provider you can use is **Yahoo! Mail**. Gmail and Yahoo! Mail have almost the same features. You can send messages from Gmail to Yahoo! Mail and Yahoo! Mail to Gmail. Setting up an account in Yahoo! Mail is similar to setting up an account in Gmail.

How to create an e-mail account in Yahoo Mail:

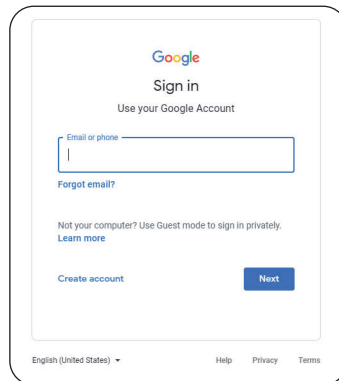
- Type “yahoo mail” or “yahoomail.com” in the search box of your browser.
- On the **Sign in** page, click **Create an account** and fill in the information needed. Click Continue when you’re done.
- On the next page, Yahoo! will ask you to verify your phone number.
- After verifying your phone number, click **Done**, and you have created your Yahoo! E-mail account.

Replying to an E-mail

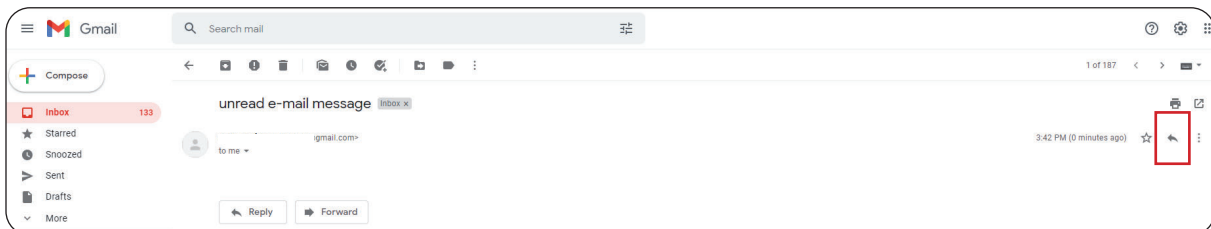
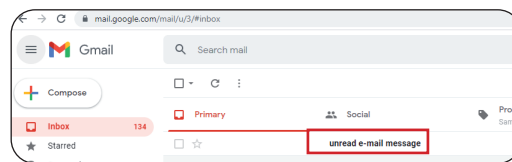
To reply to an e-mail is not a complicated matter. You only need to identify where the reply button is located.

How to reply to an e-mail:

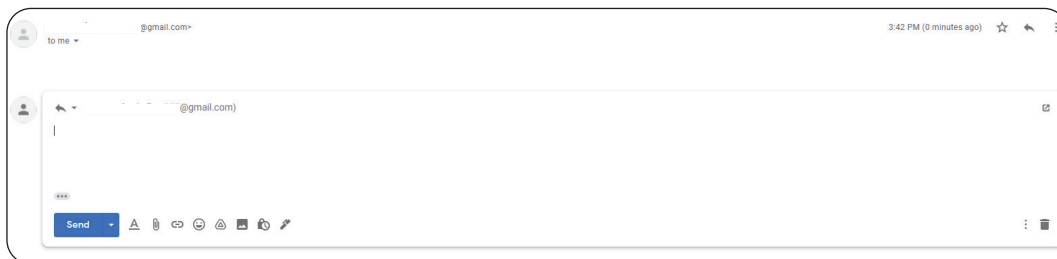
1. Sign-in to your e-mail account.



2. The Inbox folder is where you'll see unread e-mail messages. You can click on the Subject headings of the e-mails to open them.



3. Depending on the e-mail service you're using, the reply button is either placed above or below the sender's message.

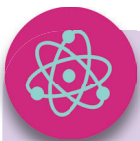


In Business

Online business, or e-commerce, is the exchange of goods and services over computer networks. Thanks to the Internet, people can now sell their products and services through social media and online shopping apps.

Participating in online business has its challenges. You'll need to know how to use a camera and learn a bit about photo editing or graphic design to make your products look appealing; after all, people can't pick up your product to get a close look at it. You also have to prove to customers that your products work and are reliable. If you look at some online shopping apps, you'll see that there are review sections where the customers tell their experiences with the product they've purchased. People who are interested in buying that product will look at the review section to see if the product is worth buying. So, if you plan to sell online, be honest with what you post and be courteous when replying to your customers.

Some of the major concerns of online businesses are fraud and theft. Fraud is the act of deceiving people to gain something, and theft is stealing. Both of these can happen online, since people can hide behind their computers and devices to trick others. Thus, always be careful with those you contact online. Just as in real life, don't talk to strangers on the Internet, and don't give any of your private information to them.



SUMMARY

Communication is important to people, and over the years, methods of communicating have changed due to technology. Communication today has become fast and widespread, thanks to the Internet and electronic devices such as the computer and mobile phone. These technologies have also changed how information is used and exchanged.



EXERCISES



Exercise 1

Answer True if the following statements are correct and False if they are incorrect.

- _____ 1. The World Wide Web is another term for the Internet.
- _____ 2. A computer virus is an example of malware.
- _____ 3. Malwares are good for computers.
- _____ 4. There are no guidelines for safe and responsible use for computers, the Internet and e-mail. It's up to you how you're going to use them.
- _____ 5. Replying to an e-mail is not a difficult thing to do.
- _____ 6. Gmail is an example of an e-mail provider.
- _____ 7. An e-mail is defined as an interconnected network of computers.
- _____ 8. Aside from sending a message, you can also attach documents, links and photos along with it.
- _____ 9. ICT stands for International Communications Technology.
- _____ 10. The World Wide Web is not the Internet.

Exercise 2

Identify the incorrect word in the following sentences. Write your answer on the space provided.

- _____ 1. The Philippines was linked to the world through the Internet on Tuesday, March 29, 1994 at 10:18 AM, at the University of San Carlos (USC), Talamban, Manila.
- _____ 2. ACT refers to all network technologies and devices that are involved in information and communication.
- _____ 3. The monitor is the part of the computer that processes and stores data.
- _____ 4. The Internet is defined as the interconnected network of telephones.

- _____ 5. The World Wide Web is often abbreviated to 3W.
- _____ 6. Gmail is an example of an Internet service provider.
- _____ 7. A laptop is composed of three or more separate components.
- _____ 8. An e-mail address is a personal account that you use for creating, sending and receiving messages.
- _____ 9. A desktop computer's components are put together to form a single device.
- _____ 10. A username is like a private key that you need to remember to open your e-mail account.

Exercise 3

In relation to exercise 2, give the correct word that replaces the incorrect words in that exercise. Write your answer on the space provided.



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LESSON OUTPUT

Create an e-mail account in Gmail or Yahoo! Mail. Compose a “thank you” message to your teacher and send it to your teacher’s e-mail address. You can compose a message in a form of a song or poem. Also, attach your message here for grading.

Lesson Output Rubrics

CRITERIA	5	4	3	2	1	POINTS
1. Content/ Functionality	All of the objectives were completed. Objectives: - Create an email account. - Compose a “thank you” message. - Send the message to the teacher’s email address. - Attach the message on the lesson output section.	Only three of the objectives were completed. Objectives: - Create an email account. - Compose a “thank you” message. - Send the message to the teacher’s email address. - Attach the message on the lesson output section.	Only two of the objectives were completed. Objectives: - Create an email account. - Compose a “thank you” message. - Send the message to the teacher’s email address. - Attach the message on the lesson output section.	Only one of the objectives was completed. Objectives: - Create an email account. - Compose a “thank you” message. - Send the message to the teacher’s email address. - Attach the message on the lesson output section.	None of the objectives was completed. Objectives: - Create an email account. - Compose a “thank you” message. - Send the message to the teacher’s email address. - Attach the message on the lesson output section.	
2. Creativity	The student showed outstanding creativity in composing the message.	The student showed adequate creativity in composing the message.	The student showed a fair level of creativity in composing the message.	The student showed some creativity in composing the message.	The student did not know how to compose the message.	
3. Promptness	The lesson output was completed two or more days ahead of the given deadline.	The lesson output was completed one day ahead of the given deadline.	The lesson output was completed by the given deadline.	The lesson output was completed one to two days after the given deadline.	The lesson output was completed three days after the given deadline.	

TOTAL

Lesson 3

Use of ICT

TRIVIA

In 2008, the 14th and former president of the Philippines, Gloria Macapagal Arroyo, declared in Proclamation No. 802 that National ICT Month should be celebrated in June every year. This event is meant to promote and develop ICT systems and communication facilities and services in the Philippines.



LESSON OUTCOMES

At the end of the lesson, you are expected to:

1. Know the uses of ICT.
2. Identify the different ways ICT helps in gathering information.
3. Differentiate between getting information online and offline.
4. Discuss basic features and function of a web browser and a search engine.
5. Point out use of computers and the Internet as tools for gathering information.



ENGAGE

Let's recall how the Internet works by watching this short animation video:

<https://www.youtube.com/watch?v=UXsominDkntI>



EXPLORE

Part I.

Choose the letter that you think gives the correct answer for each item.

- _____ 1. You can watch videos from YouTube by connecting your computer, laptop, tablet or smartphone to the _____.
- a. outlet
 - b. power source
 - c. Internet
 - d. World Wide Web

- _____ 2. YouTube is an example of this _____.
- a. World Wide Web
 - b. Internet
 - c. website
 - d. web page
- _____ 3. This is called the system of sharing information using an interconnected network of computers.
- a. World Wide Web
 - b. Internet
 - c. website
 - d. YouTube
- _____ 4. This is described as the “supernetwork” of computers or interconnected network of computers.
- a. World Wide Web
 - b. Internet
 - c. website
 - d. Online learning
- _____ 5. _____ learning is described as learning using the Internet and electronic devices like the computer, laptop, tablet or smartphone.
- a. Online
 - b. Offline
 - c. Inline
 - d. Outline

Part II.

Identify if each given situation shows the use of ICT. Answer Yes if it does and No if it does not.

- _____ 1. Rosie loves reading books. She lends some of them to her classmates who are also interested in reading.
- _____ 2. Maya and her mom, who works in South Korea, spend hours talking to each other through video calls.
- _____ 3. Ken was able to save his time by not going to the library, since he was able to buy the books he needed for his research using the Internet.
- _____ 4. Your teacher gave an assignment where you need to compose a poem. However, you weren't able to pass it because you were excused from class to do an extracurricular activity. She asked you to submit it to her through email, so you can still pass it on time.
- _____ 5. Carl's favorite past time is drawing and painting during the weekends.



RESEARCH

Research at least (5) uses of ICT.



EXPLAIN

The use of ICT can be found anywhere. It has helped many people perform better in their jobs and manage their tasks better.

At present, people around the world are able to connect and gather information with the help of the Internet. This development made it possible for teachers to teach and for students to learn without seeing each other face-to-face. Adapting this method is very helpful in situations where it's not good to go outside and meet other people in person.

Definition of Terms

Information - facts you learn about someone or something.

Website - is composed of web pages where information is posted or shared.

Web page - is where information on the Web is seen or displayed.

Web browser - a software application where you can access websites and web pages on the Web.

Online learning - is the use of the Internet and an electronic device like a computer, laptop, tablet or smartphone to learn.

Offline learning - is learning without the use of the Internet or a device like a computer, laptop, tablet or smartphone to learn.

Uses of ICT

In the previous lesson, ICT was defined as technologies developed for communication and in gathering of information such as the computer, smartphone and the Internet. These technologies are heavily relied on by people today who have found great uses for them. Among these are:

In Education

- Helps lessen the use of natural resources for creating tools in teaching and learning.
- Helps teachers save time in creating their teaching materials.
- Helps teachers keep records of their students' outputs and manage their paper works such as in grading, creating exams, developing lesson plans and many more.
- Helps students easily gather information for their assignments.
- Helps students create unique outputs of their projects or assignments.
- Gives other ways for students to continue learning and teachers to continue teaching even if they're not in school.

In Medicine

- Helps doctors in detecting diseases of patients.
- Helps doctors or people working in the hospital to keep and manage their patients' health data.
- Helps hospitals spend less in keeping and managing their patients' records.
- Helps hospitals in improving the quality of care for their patients.
- Helps in sharing information for faster treatment for a patient's disease.

In Engineering

- Helps engineers develop drawing plans of buildings, houses, and other types of structure.
- Helps engineers identify correct measurements, mathematical computations, and proper assessment of their plans.

In Security

- Helps malls, shops, houses, monitor their spaces (e.g., through CCTV).
- Helps people secure their personal files in their computers or smartphones (e.g., passwords, facial recognition, thumbprint).

Gathering Information Through the Internet

Easy access to information is now experienced by people around the world because of the Internet. Through it, a system called the World Wide Web, which is where information can be accessed and shared, was developed.

The World Wide Web (WWW)

The World Wide Web and the Internet are not the same. The Internet is a global supernetwork of networks, while the World Wide Web, or simply the Web (generally spelled with a lowercase “w”), is the system of sharing information using that supernetwork.

On the Web, various information can be found. They are placed as “locations” on the Web called websites, which are created by a person or a group of people. Examples of websites are google.com, yahoo.com and youtube.com. These websites are composed of web pages where information is posted or shared.

In order to access websites on the Web, a web browser must be installed in your computer or electronic device that you use for connecting to the Internet. Popular web browsers are Google Chrome, Microsoft Edge (its old version was called Internet Explorer), Mozilla Firefox, and Apple Safari.

Google Chrome



image credit: Google

Microsoft Edge



image credit: Microsoft

Mozilla Firefox



image credit: Mozilla Corporation

Safari



image credit: Apple Inc. Vectorization

A web browser is developed with a **search engine**. A search engine is where you'll input the information you want to look for on the Web. Among the known search engines are Google and Microsoft Bing.

A search engine works by using “web crawlers”, called search engine bots, or more commonly, spiders, to gather data or information on the Internet. Spiders do this by following links in websites, then adding new information to a database once it

is available. The collected information is then stored (Data mining) and arranged systematically (Indexing).

Query processing is described as a mathematical process that compares a question entered into a search engine to all the information that it has previously collected from the Internet revealing either exact or related results as the case may be.

Safety Precautions when Using a Computer, Laptop, Tablet or Smartphone



Using a computer, laptop, tablet or mobile phone can be dangerous if these are not used properly. Before you use one of these devices, read, follow, and remember these safety rules for your own protection:

1. Don't eat near your computer or laptop. Spilling food or liquids on these devices can damage their internal parts.
2. Do not use your device while it's charging.
3. Turn off the power and unplug the device after you're done using it.
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5. Keep your working space clean and organized.
6. Don't get too close to your computer's monitor or your device's screen, because doing so might cause eyestrain and headaches.

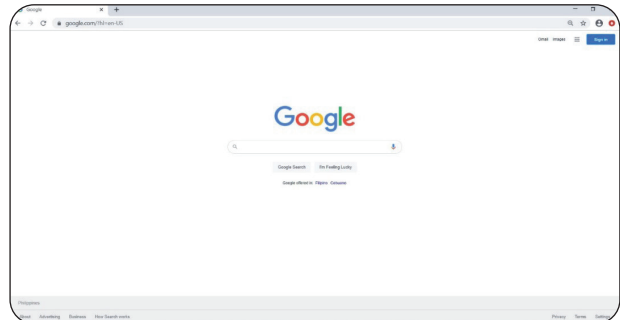
Tools and Materials Needed



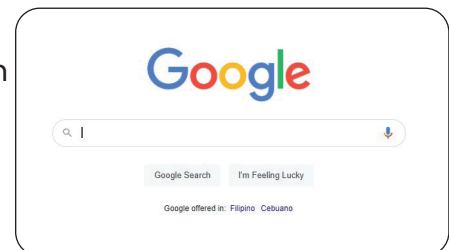
To start using the Web, you first need a computer, a laptop, a tablet or a smartphone. Turn on your device and connect it to your Internet provider. Once you have done this, you can begin exploring the Web.

How to Access the World Wide Web:

1. Check if your computer, laptop, tablet or smartphone has a web browser.
2. Click or tap the web browser to open it.
3. If the browser you use on your computer is Google Chrome, this is what you will see once you've opened it:



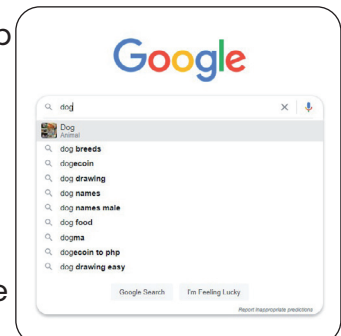
4. What follows is the Google logo where you will type the word or topic you want to know or find on the Web. For example, let's type "dog."



While typing, you'll see that Google will suggest other web searches that are related to what you're looking for. Let's try clicking "dog breeds".

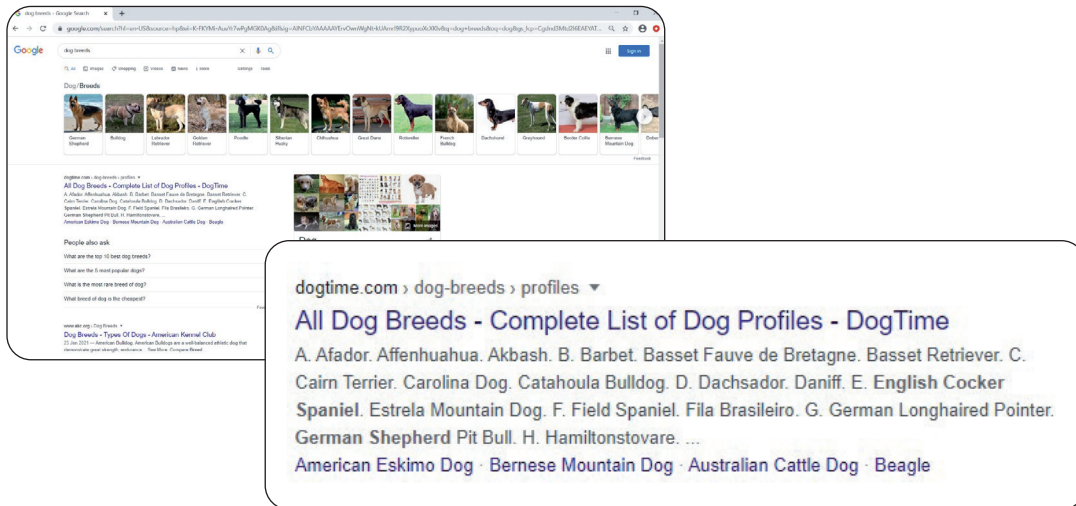
After clicking, you will be directed to a page where different websites about dog breeds will appear.

You will also see that there are **blue** and **black** text on the

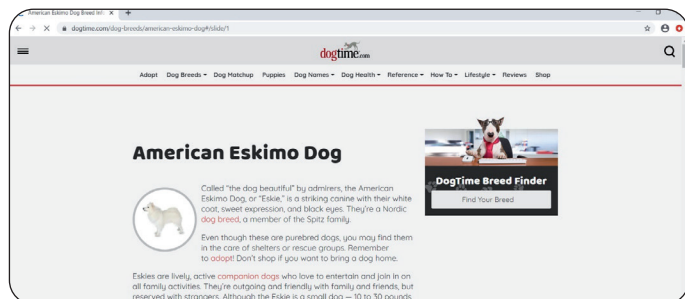


page. The blue text are called **hyperlinks**. Clicking them will direct you to a web page where information about that hyperlinked word is displayed.

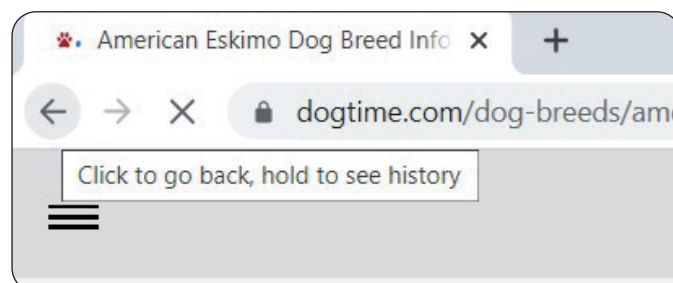
Also, the blue text with a larger font size is the main web page, while the smaller blue text below that are web pages within that web page.



5. Moving forward, let's try clicking "American Eskimo Dog". The next thing that will happen is you will be directed to a web page where information about the American Eskimo Dog is displayed. Scroll down to get the full information on the American Eskimo Dog posted on that web page.

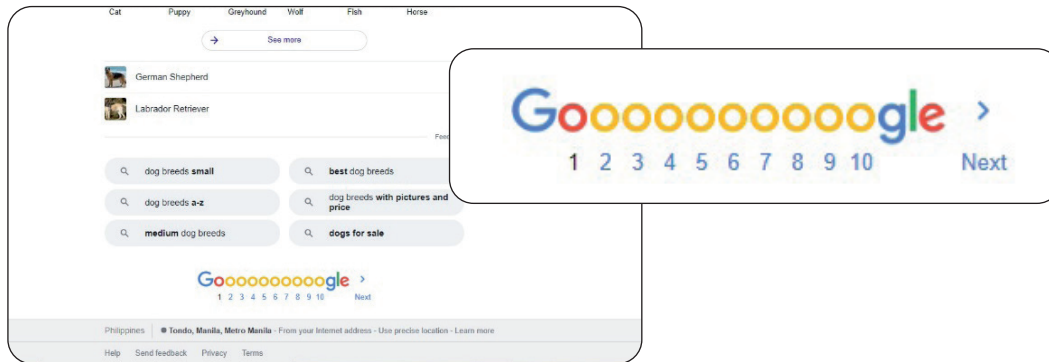


6. Now, if you want to go back to a previous page, click the **back arrow** button found on the upper left corner of the browser. The button that is beside the back arrow is the **forward button**. The back and forward buttons are used for moving back and forth to a page you have been to or want to visit again.

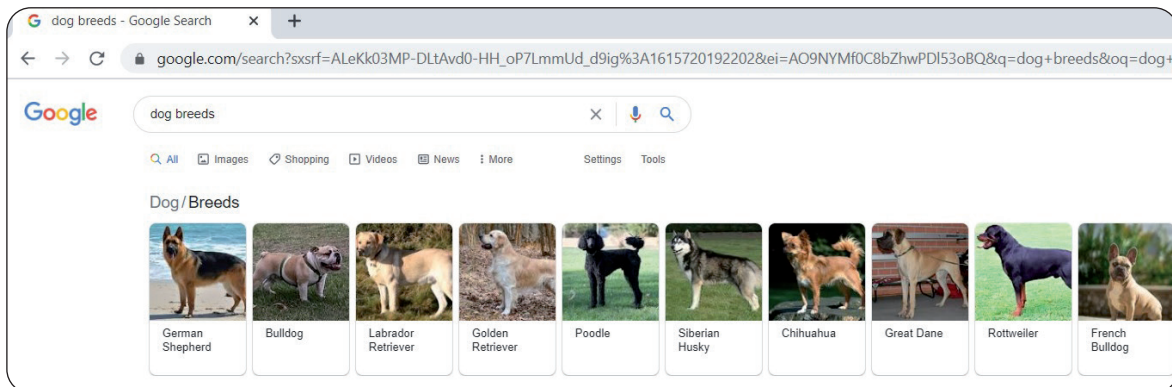


7. After clicking the back arrow button, we go back to the page where we started. Scrolling down, you'll see this part at the bottom of the page.

The repeated letter “o” are links to other pages where new sets of websites or webpages about dog breeds or topics related to it are seen.



8. Another way to use the web browser for easier web searching is by opening browser tabs. **Browser tabs** allow you to switch from one website to another. To open one, look at the top section of the web browser and you will see a + icon beside your current tab. You can also use this keyboard shortcut to open a new tab: (ctrl) + (N)



Other Sources of Information that Are Also ICT

Radio

Apart from the Internet and electronic devices like the computer and smartphone, the radio is also a type of device that shares information wirelessly. The radio is one of the older ICT inventions that people use to get information. It was around the year 1900 when it was first used as a tool for sending information to people.

Radio waves are the ones that carry information from a radio station to a receiver or to someone else's radio. If you will imagine the waves of the sea carrying a bottle with a message inside, that is how information is carried by radio waves.

Television

The television is also an example of an ICT device. Unlike the radio, it communicates information using moving pictures and sounds.

A television broadcast system is composed of three parts: the **TV camera** which turns images and sound into a signal; the **TV transmitter** that sends the sound and picture signal through the air; and the **TV receiver** (your TV at home) which captures that signal and turns it into images and sound again.

How Does Getting Information Online Differ from Getting It Offline?

People have the means for creating and sharing information using various methods or tools. One method is by talking or using their mouth. Another method is through writing and reading. The other common method at present is through the Internet using a computer or smartphone (combined with the other two).

With the use of the Internet and these electronic devices, learning is possible even if you're not in school. **E-learning or online learning** is the way through which a student learns using the Internet and an electronic device like a desktop computer, laptop, tablet or smartphone. **Offline learning**, on the other hand, is learning without the use of the Internet.

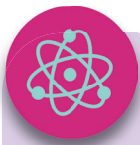
Getting Information Online	
Advantages	Disadvantages
- You can gather information without visiting a physical library. - You can find and gather information faster. - You won't need to find a book and track pages to get the information you need. - You can learn through different ways: video, audio, articles and games. - People living in areas where there are few schools or libraries can still access information.	- There's no guarantee if the information you're going to get and use from the Web is correct. - Spending too much time using a computer or smartphone is bad for anyone's health. - The Internet is filled with both good and bad websites. The bad websites contain unhelpful information. - Slow Internet and frequent disconnection of your device from the Internet can be a waste of time and money. - Accessing information on the Web cannot happen for those who don't have a computer or mobile phone.

Getting Information Offline	
Advantages	Disadvantages
- You can trust that the information you're going to get is correct. - You don't need to pay monthly to an Internet provider or spend daily to buy data. - You won't be exposed to bad habits or acquire health problems associated with using the computer or smartphone too much. - You will get to physically interact and meet other people.	- Unlike on the Web, getting information from a library or from someone can be limited. - Gathering full information on something or someone could take a while. - Looking for sources of information, either from a person or books without the Internet takes a lot of time.

In Business

ICT is useful for businesses as ICT devices help in their management, reach and attract more customers, and promote products or services. The Web is now a common source of information used by people with websites such as YouTube, Facebook, Twitter, and Instagram frequented by people to share information, connect with others, and engage in online transactions.

Social media are online platforms where entrepreneurs can promote their business through blogs and videos. Blogs are like written essays created by individuals called bloggers. A product or business can be promoted through blog posts that detail its unique characteristics or emphasize useful things about it. Apart from that, video sharing on popular platforms such as YouTube is also helpful for businesspeople.



SUMMARY

ICT is useful for people as it can help an individual teach, learn, and do things. This includes the Internet and the World Wide Web wherein computers from all over the world can share and access information.



EXERCISES

Exercise 1

Answer **Yes** if the situation shows the use of ICT and **No** if it does not.

- _____ 1. Akio loves creating origamis. He takes videos of his creations and uploads them on YouTube. One of his videos have reached one million views, which caused his YouTube channel to grow from 1000 to 100 thousand subscribers.
- _____ 2. Hannah and her family travels twice a year. They love keeping memories of their adventures by taking pictures. Her mom uploads these pictures on social media to share their experiences to their friends and relatives.
- _____ 3. Isabelle is a self-taught dancer. She learned by watching video tutorials and dance routines uploaded on the Internet.
- _____ 4. Your classmate's family loves spending the weekends outdoors where technology is not present.
- _____ 5. Amy's father loves to write using pen and paper.

Exercise 2

Identify the missing word in each sentence.

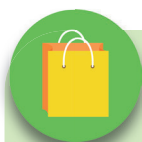
- _____ 1. A _____ is where you will enter a word or topic you want to find on the Web.
- _____ 2. Is a software application to access websites on the Web.
- _____ 3. Are the ones that carry information from a radio station to a receiver or another radio.
- _____ 4. A _____ communicates information using moving pictures and sound.
- _____ 5. _____ Chrome is an example of a web browser.

Exercise 3

Answer **A** if the scenario is about an advantage of *getting information **online***, or answer **D** if it is about a disadvantage.

On the other hand, answer **X** if the scenario tells the advantage of *getting information **offline***, while answer **Y** if it tells its disadvantage.

- _____ 1. Anna was disappointed because she got a low score for submitting an assignment filled with plenty of wrong information she gathered from the Internet.
- _____ 2. Sheila wasn't able to pass her research on time because she had a difficult time finding the books she needed in the library.
- _____ 3. Travelers visiting Manila were able to go to different tourist spots on their own with the help of maps found on the Web.
- _____ 4. Even though Aiden had to sacrifice a lot of time visiting the library, his hard work was worth it for he got the highest score for the project he submitted to his teacher.
- _____ 5. Students from class 4-A were glad that they were able to see actual lions, birds, dolphins and other animals at the zoo, which they wouldn't have experienced using the Internet.



LESSON OUTPUT

Look for an informative article and video on the Internet, then write a short essay on what you've found, detailing the things you have learned from them. Include the links to the article and video at the end of your essay.

Lesson Output Rubrics

CRITERIA	5	4	3	2	1	POINTS
1. Content/ Functionality	All of the objectives were completed. Objectives: - Find an informative article on the Web. - Find an informative video on the Web. - Write an essay about the things learned from the article and video. - Include the links.	Only three of the objectives were completed. Objectives: - Find an informative article on the Web. - Find an informative video on the Web. - Write an essay about the things learned from the article and video. - Include the links.	Only two of the objectives were completed. Objectives: - Find an informative article on the Web. - Find an informative video on the Web. - Write an essay about the things learned from the article and video. - Include the links.	Only one of the objectives was completed. Objectives: - Find an informative article on the Web. - Find an informative video on the Web. - Write an essay about the things learned from the article and video. - Include the links.	None of the objectives was completed. Objectives: - Find an informative article on the Web. - Find an informative video on the Web. - Write an essay about the things learned from the article and video. - Include the links.	
2. Creativity	The student showed outstanding creativity in writing the reaction paper.	The student showed adequate creativity in writing the reaction paper.	The student showed a fair level of creativity in writing the reaction paper.	The student showed some creativity in writing the reaction paper.	There was no creativity in the writing of the reaction paper.	
3. Promptness	The lesson output was completed two or more days ahead of the given deadline.	The lesson output was completed one day ahead of the given deadline.	The lesson output was completed on the given deadline.	The lesson output was completed one to two days after the given deadline.	The lesson output completed three days after the given deadline.	

TOTAL

Lesson 4

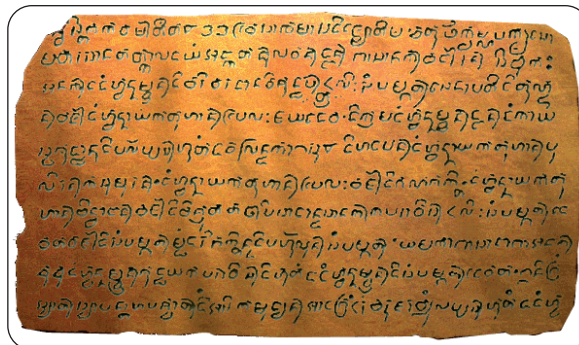
Organizing Files and Data with ICT

TRIVIA

Did you know that the earliest known written document found in the Philippines dated back to the year 900 AD?

The **Laguna Copperplate Inscription** is the earliest known written document of the Philippines. This artifact was found in 1989 in a construction site near the Lumbang River, in the town of Lumban in Laguna. At first, no antique dealers gave any interest to it, until a Dutch anthropologist, Antoon Postma, translated what was written on the plate. He said that the written document is for the freedom of the children of Namwaran, in exchange of being able to pay the family's debt. The writing system used was said to be the Kawi Script, which believed to have originated from Java, Indonesia, and was once widely used in Southeast Asia.

To this day, the artifact resides in the National Museum of the Philippines.



LESSON OUTCOMES

At the end of the lesson, you are expected to:

1. Learn what a computer file system is.
2. Sort and filter data or information in MS Excel.
3. Create tables and charts in MS Word and MS Excel.



ENGAGE

Re-arrange the items in Table I according to their proper groups. Write your answers in Table II.

Table I

Noun	Verb	Adjective
dancing	neat	flower
ICT	modern	yellow
create	beautiful	fast
singing	Art	sort
write	tables	computer

Table 2

Noun	Verb	Adjective



EXPLORE

Answer the following multiple-choice questions. Choose the correct letter for each item.

- What is a file?
 - type of computer
 - a software
 - a collection of data
 - something you keep

2. What does a computer file system mean?
- a. process of checking if files are labelled correctly
 - b. method for keeping files organized
 - c. way of organizing downloaded files
 - d. the system of turning a physical file to a computer file
3. Is the word "cell" only used in science?
- a. No, "cell" is another word to call files.
 - b. Yes, the word "cell" only means the building blocks of life.
 - c. No, cells can also be found in a spreadsheet.
 - d. Yes, because cells can only be found in a human body.
4. MS Excel has _____.
- a. text animation
 - b. paint
 - c. paragraph layout design
 - d. rows and columns
5. MS Word is for _____.
- a. creating documents
 - b. editing pictures
 - c. making presentations
 - d. none of the above
6. A table in MS Word and MS Excel has _____ and _____.
- a. number and formulas
 - b. lines and colors
 - c. charts and symbols
 - d. rows and columns
7. _____ is a set of cells in a table that goes from left to right
- a. row
 - b. column
 - c. table
 - d. chart
8. _____ is a set of cells in a table that goes from the top to the bottom.
- a. row
 - b. column
 - c. table
 - d. chart
9. What is a chart?
- a. another way for organizing data
 - b. a graphical representation of data
 - c. also has rows and columns
 - d. a way for designing a paragraph

10. What is the difference between a chart and a table?

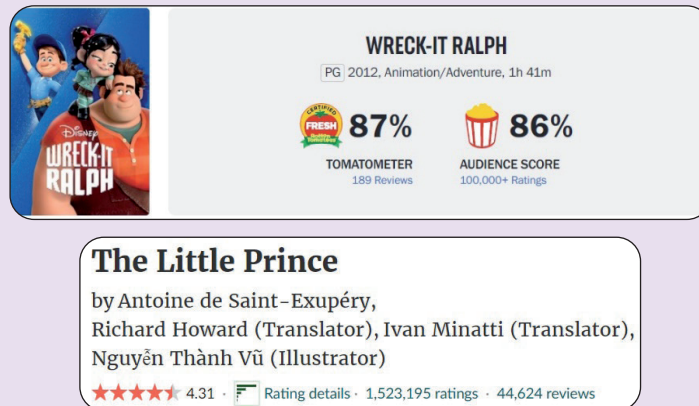
- a. a chart is used to record data, while a table is used to present data from the chart.
- b. a table is used to record data, while a chart is used to present data from the table.
- c. a chart is created in MS Word, while a table is made in MS excel
- d. a table is created in MS Word, while a chart is made in MS excel



RESEARCH

List down (5) book titles or (5) movie titles. Note their ratings or score from (3) movie or book review websites.

Example of ratings/score:



Keep this list for you will need it to accomplish the lesson output.

The following are websites where you can look for book or movie ratings/scores, but you are also free to look for other websites.

For movies:

- <https://www.metacritic.com/>
- <https://www.rottentomatoes.com/>
- https://www.imdb.com/?ref_=nv_home

For books:

- <https://www.librarything.com/work/15442190>
- <https://www.goodreads.com/genres/fantasy>
- <https://play.google.com/store/books>



EXPLAIN

Definition of Terms

chart – a visual representation for data.

sort – to systematically arrange anything, such as an information or data.

Creating and Working with Files

A **computer file system** is a method of keeping computer files organized to have quicker or easier access to them.

All data or information you put in your computer is stored as a file. A **file** can be a document, an image, a video, an audio, or a program. Within a storage media, files of different kinds may be saved. Each one is identified by the **filename** you chose when you last saved it.

Naming Files



When you save a document, spreadsheet, presentation, or anything you have worked on using your computer, you will be asked to provide a filename. For example, you might name a letter you have written to your grandmother, using the program Microsoft Word, as “lola.docx”.

A filename has two parts, which are separated by a dot (.): the **filename proper** (lola) and the **extension** (docx). The extension tells you the format or the kind of file you have just saved.

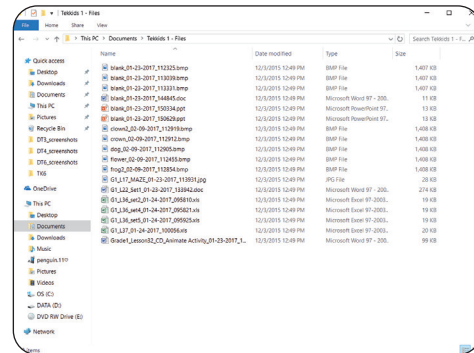
In the given example, the extension “docx” tells you that the file is a document that can be read using Microsoft Word. On the other hand, the filename “friends.xlsx” will tell you that the file is a spreadsheet that can be read using Microsoft Excel.

The filename could be any name you wish to use as a label for your file. It is a good practice to create a name that is associated with the contents of the file. The file extension is usually added automatically by the software you are using upon saving.

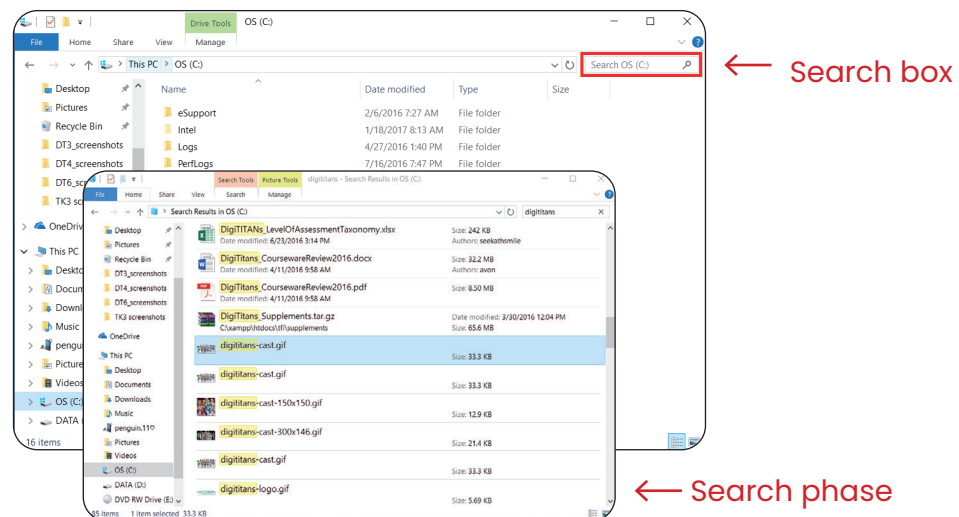
Managing Files

File management programs, such as Windows® Explorer or Finder (for Macintosh® computers), let you do the following tasks:

- open, delete, rename files and folders
- move and copy files and folders
- launch applications
- see a preview of the file's contents using a file viewer

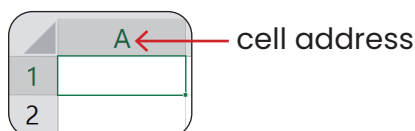


In case you have forgotten where you have saved a file but remember a few details about it, you can use the **Search or Find** feature of the computer to locate the file. You can use the Search box at the top right corner of Windows Explorer. Just click the directory where you want to search, then type the name of the file or even just the first few letters. The search pane will appear, displaying search results.



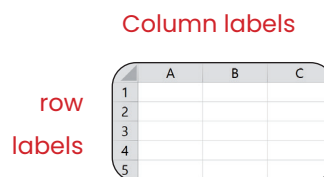
MS Excel: The Basics

Spreadsheet software like MS Excel helps you record numerical data into workbooks and perform computations using formulas. Every workbook is composed of one or more worksheets. A **worksheet** is composed of **rows** and **columns**. Each row is identified by a row number, while each column is identified by a column letter. The intersection between a row and a column is called a **cell**. The **cell address** is based on the column number and the row number. For example, cell A1 is located at column A and Row 1. The Name Box on the toolbar shows you the name of the cell.

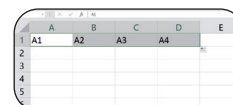
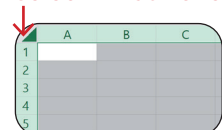


Selecting Cells

1. To select a cell, click on the cell once.
2. To select an entire row, click on the row label. Row labels are the numbers on the leftmost side of the worksheet.
3. To select an entire column, click on the column label. Column labels are the letters on the topmost side of the worksheet.
4. To select an entire worksheet, click on the Select All button at the top left corner of the worksheet.
5. To select a range of cells, drag the mouse across the cells. Another way is to hold down the SHIFT key while pressing the arrow keys.
6. To edit the contents of a cell, double-click on the cell.



Select All buttons



Moving Cells Around

Cutting and Pasting Cells

1. Select the cell or range of cells you want to cut.
2. On the Home tab, in the Clipboard group, click on the Cut icon.
3. Click on the cell where you want to paste the data.
4. Click on the Paste icon.

Copying and Pasting Cells

1. Select the cell or range of cells you want to copy.
2. In the Clipboard group of the Home tab, click on the Copy icon.
3. Click on the cell where you want to paste the data.
4. Click on the Paste icon.

Dragging and Dropping Cells

1. Select the cell or range of cells you want to move.
2. Bring the pointer over a border of the selected cell or cells. The pointer changes into a cross.
3. Hold down the left mouse button and drag the mouse. Bring the selected cell or cells to its new location.
4. Release the left mouse button. The selected cell or cells will be moved.

Inserting Worksheets, Rows, and Columns

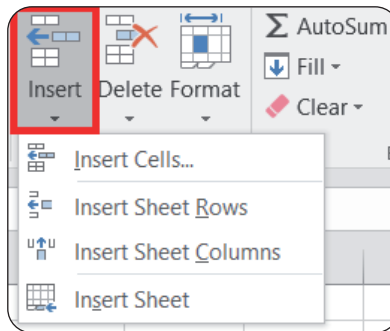
Inserting a Worksheet

1. To insert a worksheet at the end of the existing worksheets, click on the Insert Worksheet tab at the bottom of the screen.



2. To insert a worksheet before an existing worksheet, click on the worksheet's tab. Then on the Home tab, go to the Cells group and click on the Insert arrow > Insert Sheet.

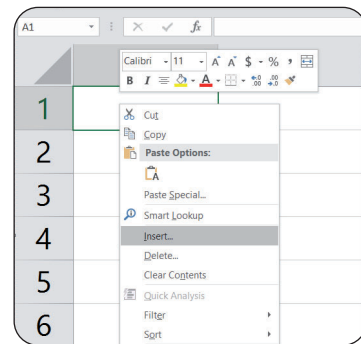
You can also right-click on the tab of an existing worksheet, and then click on Insert.



Inserting a Row or a Column

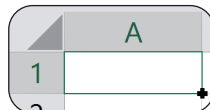
To insert a row or column before an existing sheet row or column, you can do one of the following.

1. Click on the label of the existing row or column. In the Cells group of the Home tab, click on the Insert arrow. Then click on Insert Sheet Rows to insert a row, or click on Insert Sheet Columns to insert a column.
2. Right-click on a row label or a column label. Click on Insert on the shortcut menu.



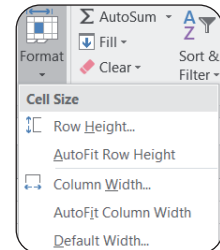
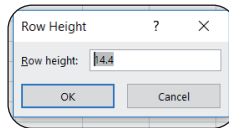
Resizing Rows and Columns

1. Choose a row or column you want to resize.
2. To resize a row, bring the pointer to the row label and move it to the top border or bottom border of the label. To resize a column, bring the pointer to the column label and move it to the left border or right border of the label.
3. When the pointer turns into a double arrow, drag the border until the row or column is resized the way you want.



You can also resize a row or column through the Home tab.

1. Click on a row or column label.
2. On the Home tab, in the Cells group, click on Format. On the drop-down menu, go to the Cell Size options.
3. To resize a row, click on Row Height... To resize a column, click on Column Width... The Row Height window or the Column Width window appears.
4. Type in the new height or width. Then click on OK.

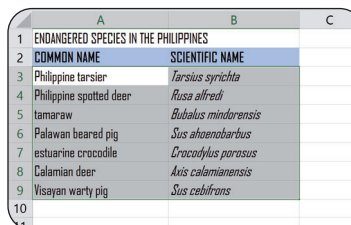


Sorting Cells

When you sort things, it means you are arranging them in some order. You can sort words in **ascending**, or alphabetical, order. You can also sort them in **descending** order, starting from Z to A. You can sort numbers from the lowest value to the highest value.

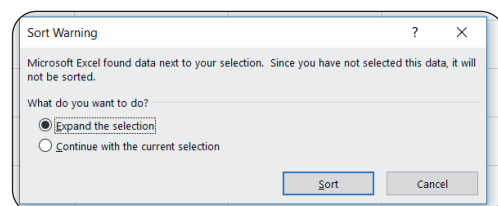
You can sort the cells in your worksheet, too. Sorting can be based on one or more columns.

Sorting Based on One Column

A screenshot of an Excel worksheet titled 'ENDANGERED SPECIES IN THE PHILIPPINES'. The data is organized in two columns: 'COMMON NAME' and 'SCIENTIFIC NAME'. The rows contain the following information:

COMMON NAME	SCIENTIFIC NAME
Philippine tarsier	<i>Tarsius syrichta</i>
Philippine spotted deer	<i>Rusa alfredi</i>
tamaraw	<i>Bubalus mindorensis</i>
Palawan bearded pig	<i>Sus ahoenobarbus</i>
estuarine crocodile	<i>Gracilylus porosus</i>
Calamian deer	<i>Axis calamianensis</i>
Visayan warty pig	<i>Sus cebifrons</i>

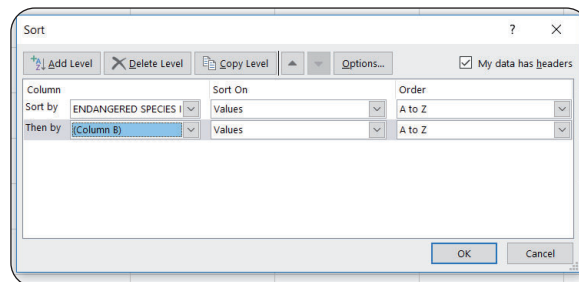
1. Select the cells to be sorted.
2. In the Editing group of the Home tab, click on Sort & Filter.
3. On the drop-down menu, click on either Sort A to Z or Sort Z to A. If you are sorting only one column and there is data in the column beside it, the Sort Warning window will appear.
4. If you are going to sort the cells only in the selected column, click on Continue with the current selection. Only the selected cells will be arranged.



You can also find the Sort A to Z and the Sort Z to A buttons in the Sort & Filter group on the Data tab.

Sorting Based on Multiple Columns

1. Select the cells, rows, or columns to be sorted.
2. In the Editing group of the Home tab, click on Sort & Filter > Custom Sort... The Sort window will appear.
3. If your selection contains column headers and you do not want to include them, check the box beside My data has headers.



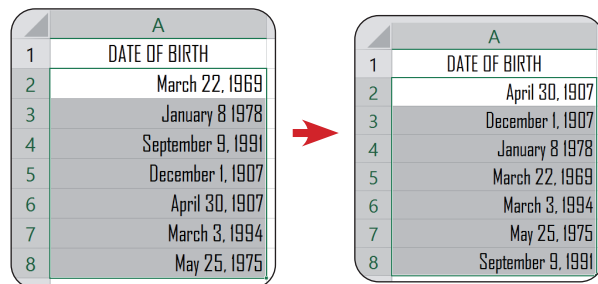
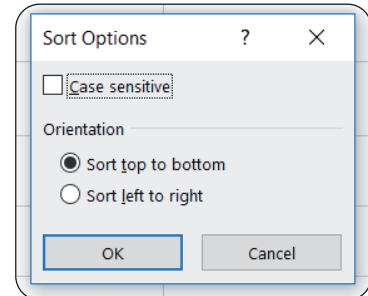
4. Indicate how you want your data to be sorted. Click on the arrow beside the Sort by field. Click on the header name of the column you want to be arranged. Then in the next column, indicate the basis of sorting. In the third column, click on the order you want the data to be sorted.
5. To include another level—that is, another column—click on the Add Level button, and then indicate your preferences.
6. To reorder the levels, just click on the Up or Down button. Just remember, the topmost level will be the first to be sorted.
7. When you are done, click on OK. The cells will be arranged accordingly.

	A	B	C	D
1	ENDANGERED SPECIES IN THE PHILIPPINES			
2	COMMON NAME	SCIENTIFIC NAME	CONSERVATION STATUS	
3	Calamian deer	<i>Axis calamianensis</i>	Endangered	
4	estuarine crocodile	<i>Crocodylus porosus</i>	Least Concern	
5	Palawan bearded pig	<i>Sus ahaenobarbus</i>	Vulnerable	
6	Philippine spotted deer	<i>Rusa alfredi</i>	Endangered	
7	Philippine tarsier	<i>Tarsius syrichta</i>	Near threatened	
8	tamaraw	<i>Bubalus mindorensis</i>	Critically endangered	
9	Visayan warty pig	<i>Sus cebifrons</i>	Critically endangered	
10				
11				

Sorting Dates or Times

To sort dates or times from the most recent or from the earliest, do the following:

1. Select the cells to be sorted.
2. In the Editing group of the Home tab, click on Sort & Filter > Custom Sort... The Sort window will appear.
3. Click on the Options... button. The Sort Options window will appear.
4. Select Sort top to bottom, and then click on OK.
5. In the Sort window, in the Order column of the level you are sorting, select Newest to Oldest to sort the dates from most recent to earliest. Select Oldest to Newest to sort from earliest to most recent.
6. Click on OK. The selected cells will be arranged accordingly

A diagram showing two Excel tables side-by-side with a red arrow pointing from the first to the second, indicating a sort operation. The first table has dates in column A, and the second table shows the same dates sorted from newest to oldest.

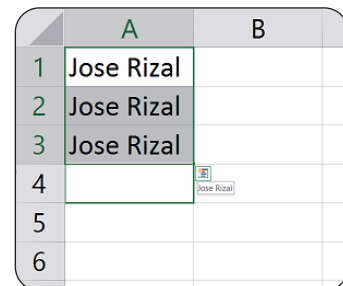
	A
1	DATE OF BIRTH
2	March 22, 1969
3	January 8, 1978
4	September 9, 1991
5	December 1, 1907
6	April 30, 1907
7	March 3, 1994
8	May 25, 1975

	A
1	DATE OF BIRTH
2	April 30, 1907
3	December 1, 1907
4	January 8, 1978
5	March 22, 1969
6	March 3, 1994
7	May 25, 1975
8	September 9, 1991

Auto Fill

You may find the need to type in the same data repeatedly. If so, you can use Auto Fill to enter the data much more quickly. Auto Fill can be used for numbers, dates, or text. Below are the steps in auto-filling data in a sequence.

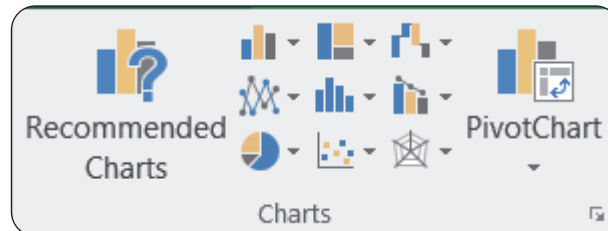
1. Type in the data (the number, date, or text) that will begin the sequence.
2. Bring the pointer to the bottom right corner of the cell. Drag the cell down or across to as many cells as you want to fill.
3. Release the left mouse button. The selected cells will be filled with the same repeating data.

The image shows an Excel grid with columns A and B and rows 1 through 6. In column A, rows 1, 2, and 3 contain the text 'Jose Rizal'. A small square handle is visible at the bottom right of cell A3, indicating the Auto Fill operation. The cells in column B are empty.

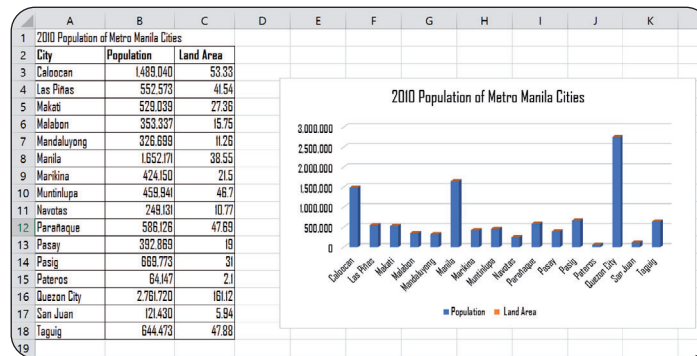
	A	B
1	Jose Rizal	
2	Jose Rizal	
3	Jose Rizal	
4		
5		
6		

Creating a Chart in MS Excel

MS Excel can present your data in chart form. To create a chart, use the Charts group on the Insert tab of the Ribbon.



1. Prepare the data that you want to plot in a chart. Select the range of cells that you want to appear in the chart, and make sure you include the column headers.
2. On the Insert tab, go to the Charts group. Choose a chart type and click on its button. A drop-down menu of subtypes appears.
3. Click on the Chart subtype that you want to use. (You can always select a new chart type if you change your mind.) The chart is embedded in the worksheet—that is, the chart is placed in the same worksheet as your data.



Changing the Chart's Location

If you do not want your chart to be on the same worksheet as your data, you can move it to a chart sheet or to another worksheet.

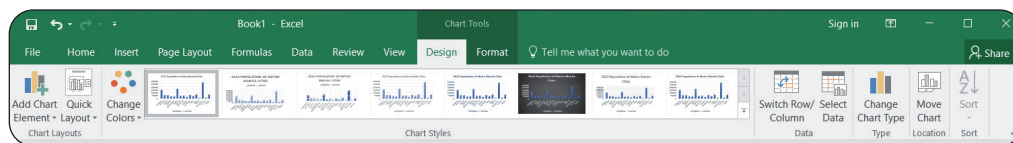
1. Click on the chart you want to move. Notice the Chart Tools appear. Under these tools, you have the Design, Layout, and Format tabs.
2. Go to the Design tab. In the Location group, click on the Move Chart button. The Move Chart window appears.
3. Under Choose where you want the chart to be placed, do one of the following:

- To place the chart in a chart sheet, click on New sheet. You can rename this sheet by typing in a new name in the New sheet box.
- To place the chart as an embedded chart in another worksheet, click on Object in. Then click on a worksheet label in the Object in box.

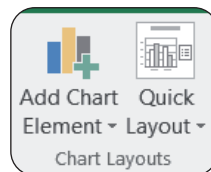
Formatting a Chart

You can format your chart through the tabs under Chart Tools. These tabs appear when you click on a chart.

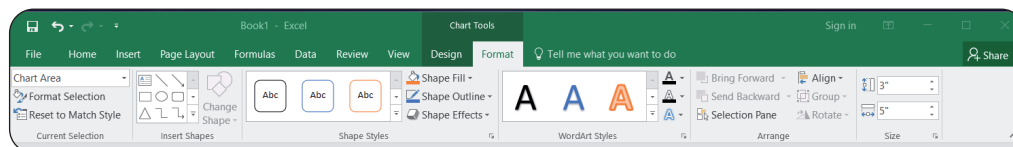
The **Design tab** is used to change the chart type, save a chart as a template, display the data series by row or by column, modify the source data of the chart, select preset chart styles, and relocate the chart.



The **Chart Layouts group** is used to change the display of chart elements (such as chart titles, data labels, and background), add pictures, shapes, and text boxes. It also allows you to modify the properties of the chart.



The **Format tab** is used to change the appearance of the chart elements. It lets you add fill colors, change line styles, apply special effects, add WordArt, and arrange and resize chart elements.



Coloring the Chart

1. Click on the chart.
2. In the Current Selection group of the Format tab, click on the drop-down menu on the top to select the chart element you want to format.
3. In the Shape Styles group, you can use a preset style for your chart. Notice that bringing the pointer to a style gives you a preview of the resulting chart.

You can also choose a shape fill or shape outline for your chart. You can even apply shape effects. Fill, outline, and effects palette options are similar to those in MS Word and MS PowerPoint.

Deleting the Chart

1. Click anywhere on the chart area.
2. Press the DELETE key on the keyboard.

Printing a Chart

When your chart is embedded in the same worksheet as its data source, you have the option to either print only the chart or print the chart with the data.

1. Do one of the following:
 - To print the chart with worksheet data, click on the worksheet tab or anywhere outside the chart area.
 - To print only the chart, click on anywhere inside the chart area.
2. Click on the File tab and then click on Print. You can also press CTRL+P on the keyboard.

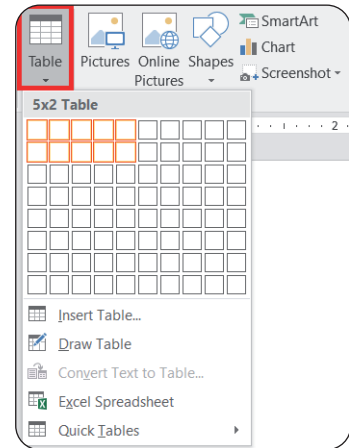
The Print option under the File menu displays a preview of your spreadsheet and also lets you make changes to the print settings.

Tables and Charts in MS Word

Creating a Table in MS Word

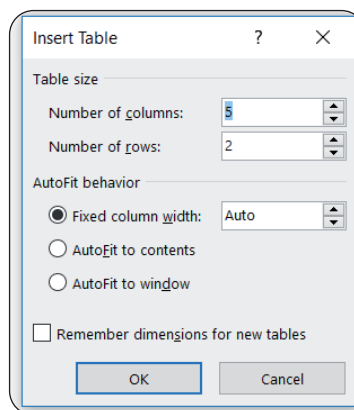
Documents can be organized by using tables. A table allows text to be organized into rows and columns. A row is a set of cells in a table that goes from left to right. A column is a set of cells in a table that goes from the top to the bottom. They are used to list information or data that may not be clear in paragraph format.

The **Insert Table group** lets you make a table. Click the Insert tab, and then Table. You will see a set of squares.



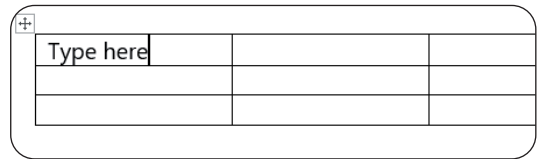
Moving Around the Table

The blinking bar cursor will appear where you click inside the table or cell. A **cell** is one box in a table. The **Tab key** and the **arrow keys** will let you move in the table. When the bar cursor is in the last cell of the table, pressing the Tab key will make a new row at the bottom.



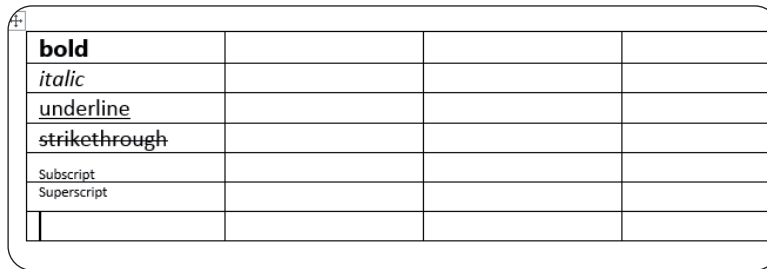
Typing and Formatting Text in a Table

To type text in a table, click on the cell where you want your text to be. You will see the cursor blinking in the cell. You are now ready to type in your text.



Type here		

You can format your text to give it style. You can make it bold or add an underline to it. Just use the formatting functions. If text is present, simply highlight the cell, column, or row where the text is and use the proper format.



bold			
<i>italic</i>			
<u>underline</u>			
strikethrough			
Subscript			
Superscript			

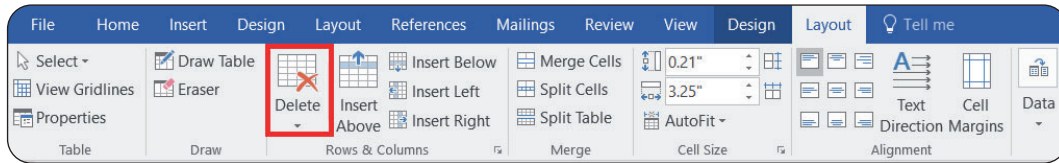
Inserting and Deleting Rows, Columns, and Cells

To insert or delete rows, columns, or cells, highlight the part of the table you want to change.

To highlight a cell or group of cells, place the cursor on the inner left side or the top part of a cell.

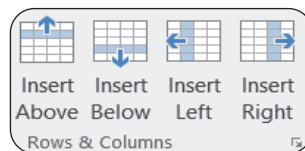
The cursor will change into a small black arrow. One click will highlight the cell or column the arrow is on. A double-click will highlight more than one cell in a row. Clicking and dragging will let you highlight as many cells you want to change.

If you have clicked on your table or your typing cursor is active in a cell, the Design and Layout tabs will appear on the menu bar. If you click the Layout tab you will find Delete in the Rows & Columns group.



You can also find the Delete Cells option in the pop-up box that appears after you right-click when the black pointer is over a cell.

After a row or column is highlighted, you can add either rows or columns of cells. You will also find Insert Above, Insert Below, Insert Left, and Insert Right in the Rows & Columns group. The blue bars and arrows show you what will be inserted—if it's going to be a row or column and also where it will appear.



Creating a Chart in MS Word

1. To insert a chart in MS Word, go to the Insert Table group and click the Chart button.
2. Clicking that button will display a selection chart.
3. Choose the type of chart that will clearly understand the information or data you need to present.
4. After selecting the chart design for your data, click Ok.
5. The chart you selected will display and a MS Excel spreadsheet will appear.
6. Fill the spreadsheet with data to turn it into a chart.

In Business

Managing files and data are important for businesses. Business owners need to have records of multiple files and data in order for their business to run properly. Using technology is essential to them, as it has made data and file storage easy and secure.



EXERCISES

Exercise 1

Complete the following sentences.

1. A _____ can be a document, an image, a video, an audio, or a program.
2. A file is identified by creating a _____.
3. A filename has two parts, which are separated by a dot and the _____.
4. A _____ in MS Excel is composed of rows and columns.
5. The intersection between a row and a column is called a _____.
6. The _____ is based on the column number and the row number.
7. You can also sort data in MS Excel in _____ order, starting from Z to A.
8. Use _____ to enter the data much more quickly.
9. The _____ group is used to change the display of chart elements (such as chart titles, data labels, and background), add pictures, shapes, and text boxes.
10. Documents can be organized by using _____.

Exercise 2

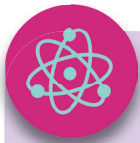
Match the following item in Column A to the items in Column B. Answer the correct letter for each number.

Column A

- ___ 1. To insert a worksheet at the end of the existing worksheets,
- ___ 2. To resize a row,
- ___ 3. If your selection contains column headers and you do not want to include them,
- ___ 4. Prepare the data that you want to plot in a chart. Select the range of cells that you want to appear in the chart,
- ___ 5. It lets you add fill colors, change line styles, apply special effects, add WordArt, and arrange and resize chart elements.

Column B

- a. and make sure you include the column headers.
- b. click on the Insert Worksheet tab at the bottom of the screen.
- c. check the box beside My data has headers.
- d. The Format tab is used to change the appearance of the chart elements.
- e. bring the pointer to the row label and move it to the top border or bottom border of the label.



SUMMARY

Developments in information technology have made work easier and data more organized and secure. Files do not have to be stored inside cabinets anymore, since they are now computer files and do not really need to have a physical copy. The software that helps users do this are MS Word and MS Excel. Using these productivity tools, you can create tables and charts that are used to save and present data clearly.



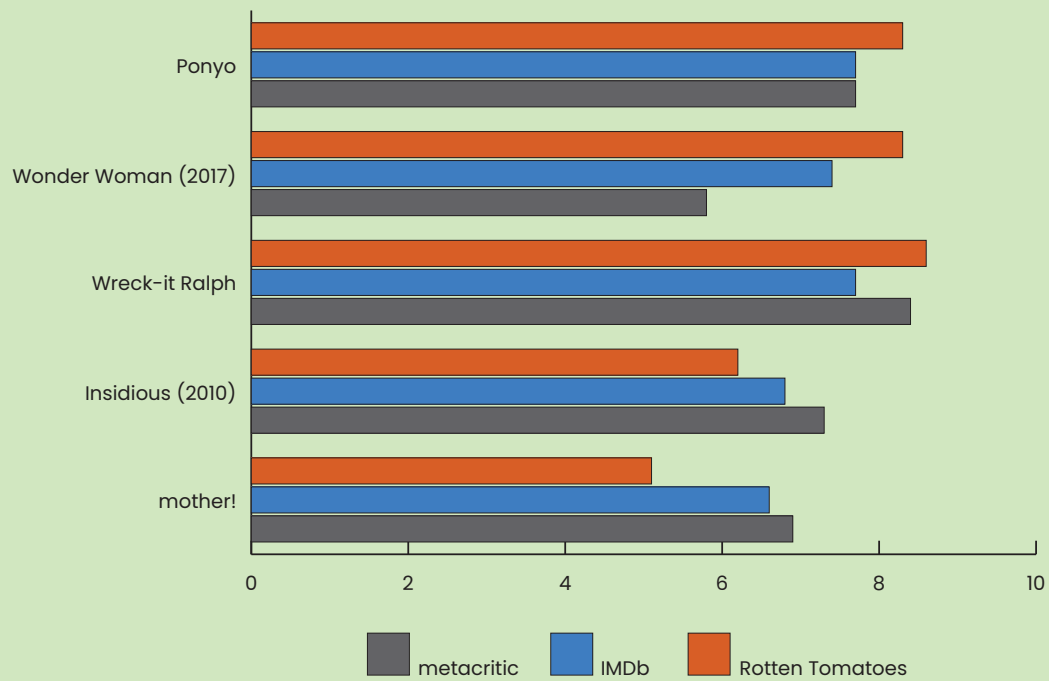
LESSON OUTPUT

Create a table and chart for the (5) movies or (5) books you listed along with their ratings or scores from (3) different online sources. All should be in the same format. Convert the ratings either in percentage or decimal form if they don't have the same format. Accomplish this either in MS Word or MS Excel

Example:

Title of the Movie	Rotten Tomatoes	IMDb	metacritic
mother!	5.1	6.6	6.9
Insidious (2010)	6.2	6.8	7.3
Wreck it Ralph	8.6	7.7	8.4
Wonder Woman (2017)	8.3	7.4	5.8
Ponyo	8.3	7.7	7.7

Comparison of Movie Ratings



Rubrics

Objectives:

- list 5 movies/ books.
- list 3 ratings from 3 different websites.
- All ratings have the same format
- Create both a table and a chart
- Use MS Word or MS Excel

CRITERIA	5	4	3	2	1	POINTS
1. Content/ Functionality	All 5 objectives for the activity were met.	All 5 objectives for the activity were met but were not exactly as instructed.	Only two of the objectives for the activity were exactly met.	Only one of the objectives for the activity was exactly met.	None of the objectives for the activity was met.	
2. Creativity	The student showed outstanding creativity by adding elements that made the output visually appealing.	The student showed adequate creativity by adding decorative elements in the activity output.	The student showed a fair level of creativity with the additional decorative elements.	The student showed some creativity with the additional decorative elements.	The student used only the given template and the answers were inadequate.	
3. Promptness	The output was completed two or more days ahead of the given deadline.	The output was completed one day ahead of the given deadline.	The output was completed by the given deadline.	The output was completed one to two days after the given deadline.	The output was completed three days after the given deadline.	
TOTAL						

Lesson 5

Basic Graphic Software

TRIVIA

In the Philippines, tattooing is a cultural art form practiced by many ethnic groups. Before the Spaniards arrived in the country, ancient Filipinos practiced a traditional way of tattooing. It is described as creating tattoos by tapping a stick against a thorn that pricks the skin.

The tribes of the mountains of Northern Luzon called this as “batok”.



For men, batok signifies bravery and strength, while for women it means beauty. In the village of Buscalan in Tinglayan, Kalinga province, a 100-year old woman named Apo Whang-Od is the last surviving mambabatok, or traditional tattoo artist. The tools she uses to make her tattoos are thorns from a calamansi tree, bamboo sticks, and charcoal dust or soot mixed with water and sugar cane as her ink.



LESSON OUTCOMES

At the end of the lesson, you are expected to:

1. Learn to use basic drawing software.
2. Edit photos using basic photo-editing tools.
3. Create a report with tables, charts, photos or drawings.



ENGAGE

Let's begin the class with a song and a video to get inspired in art.

- We Call it Art Song! by Sesame Studios
https://www.youtube.com/watch?v=IUPxCSQt_kc
- How to Draw Mickey Mouse in MS Paint
https://www.youtube.com/watch?v=F-o87_OCspc



EXPLORE

Choose the correct letter for each item.

1. Which tool is used for drawing?
 - a. scissors
 - b. sharpener
 - c. pencil
 - d. eraser
2. Which tool can create a line?
 - a. pen
 - b. eraser
 - c. paint
 - d. ruler
3. Which tool can add colors to a drawing?
 - a. black marker
 - b. eraser
 - c. paint
 - d. ruler
4. Which tool allows you to paint?
 - a. pencil
 - b. brush
 - c. crayon
 - d. markers
5. What is photo-editing?
 - a. a process of adding text to a photo
 - b. a process of taking pictures
 - c. a process of selling pictures
 - d. a process of making changes to an original photo
6. What does "cropping an image" mean?
 - a. to trim the size of an image
 - b. to cut an element of an image
 - c. to add colors to an image
 - d. to increase or decrease the brightness of an image
7. When do you use MS Paint?
 - a. for drawing or painting using a computer and a mouse
 - b. for writing a document
 - c. for editing photos
 - d. for editing videos

8. Which application can edit a photo?
- a. MS Paint
 - b. MS Excel
 - c. MS Photos
 - d. MS Access
9. Where can you create a report with text and pictures?
- a. MS Word
 - b. MS Access
 - c. MS Paint
 - d. MS Photos
10. What do images add to a report or presentation?
- a. more things to look at
 - b. visual impact
 - c. motion
 - d. nothing



RESEARCH

Gather information anything related to the Philippines. Research anything, like its history, culture or its geography. The data you will collect is needed to accomplish the lesson output, where you will create a report with pictures, drawing, tables or charts.



EXPLAIN

Definition of Terms

graphic software - a computer program for manipulating images.

photo editing - process of enhancing or changing the appearance of a photo.

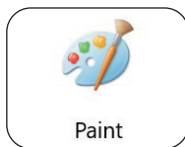
As you are reading this book, think about how different it would look like if there were no images along with the words. On the other hand, what would you feel if there were pictures along with the words on the page?

Adding images to a page helps in explaining to readers the ideas that you are trying to say. It also helps in keeping their attention. If a person only sees lines of words, they might find it hard to stay focused.

To make your page look more attractive, you will need to put pictures or a simple drawing into your page and put them where they will catch someone's attention.

Today, there are many tools you can use to draw or paint using a computer or smartphone, an example of which is graphic software. Some kinds of graphic software have many different tools, while others have enough basic tools for you to create artwork digitally. Among these basic software tools for drawing or painting digitally is Microsoft Paint or MS Paint.

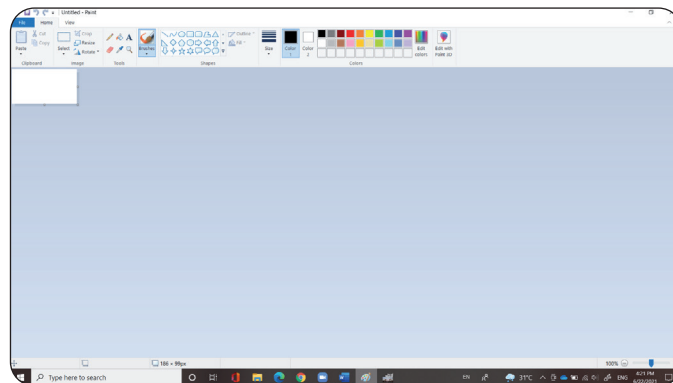
Introducing MS Paint



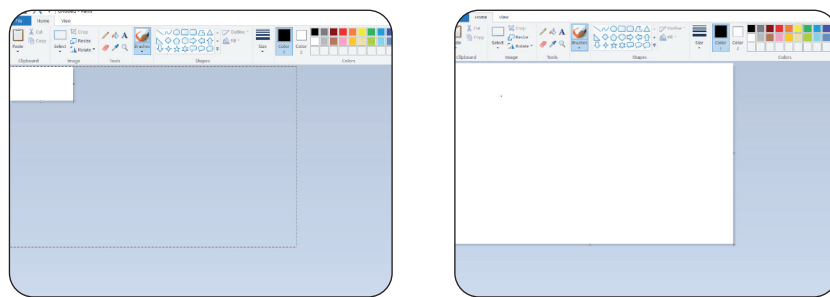
MS Paint consists of a set of basic tools to make simple artwork. To access MS Paint, type “paint” on the search box beside the Start menu and click Open.

You can use your mouse or a pen tablet to work with MS Paint.

MS Paint’s Parts and Tools

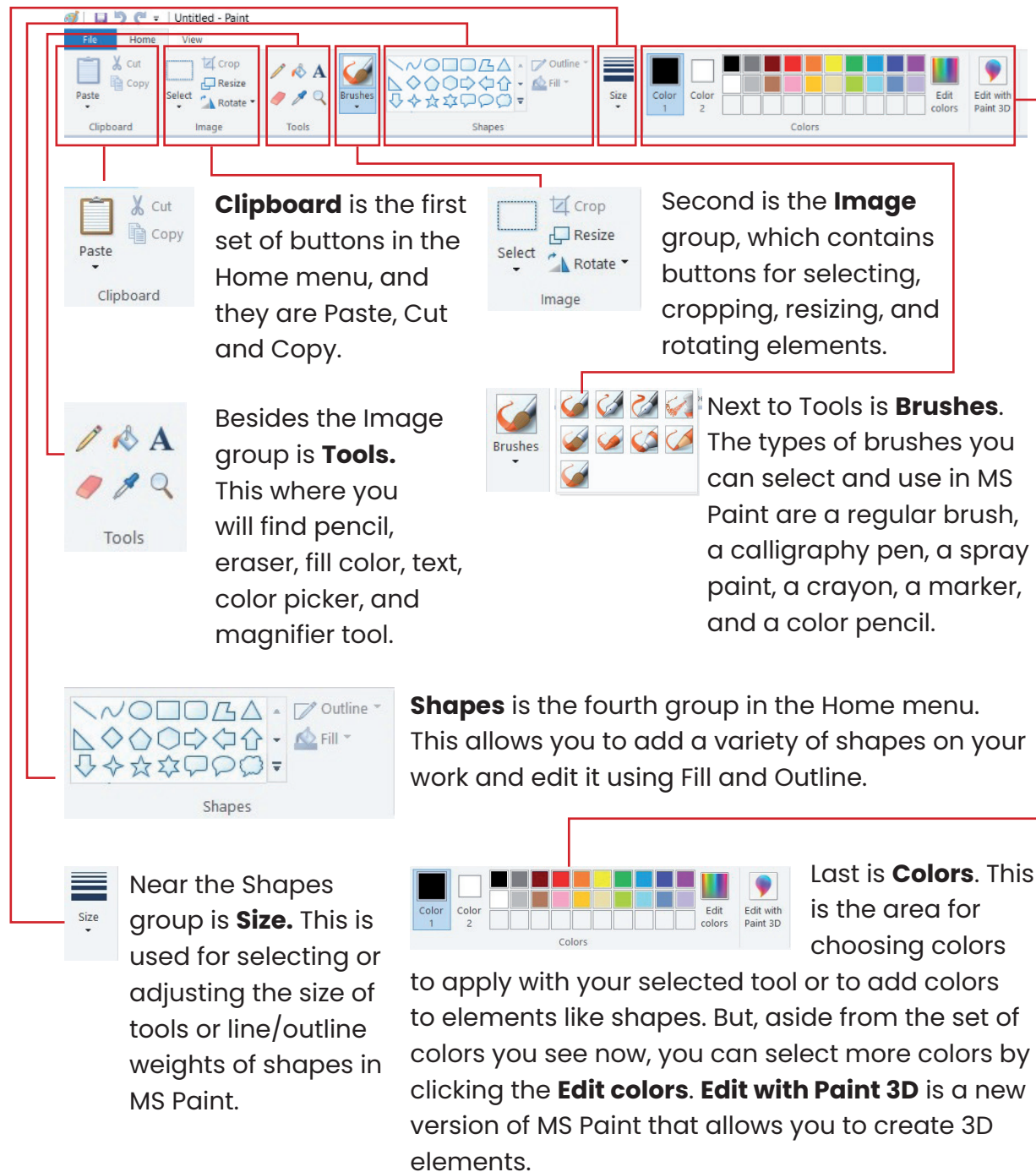


This is MS Paint’s working space. As you can see, the drawing area is quite small to draw or paint on. To resize it, click and drag the small squares or handles around it until enough space is given for you to create an artwork.



Moving on to the bar above the canvas are the three menus of MS Paint: **File**, **Home** and **View**.

The Home menu is where the basic tools for drawing and painting are, such as the brush tool, pencil and eraser tool, color picker, and buttons for cropping, copying and pasting elements.

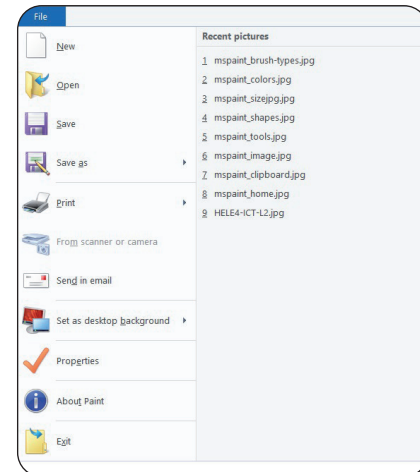
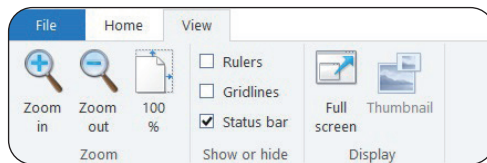


The screenshot shows the MS Paint application window with the Home ribbon selected. Red lines and boxes highlight specific groups of icons, each with a corresponding text box explaining its function.

- Clipboard:** The first set of buttons in the Home menu, containing Paste, Cut, and Copy.
- Image:** The second group, containing buttons for Select, Crop, Resize, and Rotate.
- Tools:** The group next to Image, containing the pencil, eraser, fill color, text, color picker, and magnifier tools.
- Brushes:** The group next to Tools, containing various brush types like regular brush, calligraphy pen, spray paint, crayon, marker, and color pencil.
- Shapes:** The fourth group in the Home menu, allowing users to add and edit various shapes using Fill and Outline options.
- Size:** The group near Shapes, used for selecting or adjusting the size of tools or line/outline weights of shapes.
- Colors:** The last group, used for choosing colors to apply with the selected tool or to add colors to elements like shapes. It includes a color palette, 'Edit colors', and 'Edit with Paint 3D' buttons.

The **File menu** of MS Paint is where you create a new canvas, open files, save and print your work, and access other features of the software.

The **View menu**, on the other hand, comprises of buttons for zooming in or out the canvas, for enabling rulers and gridlines and a button for allowing the output to be seen in full screen.



At the topmost section of the software are more buttons, such as the quick access button for saving, the Undo and Redo buttons, and Customize Quick Access Toolbar button.



Basic Photo-Editing Apps

Similar to drawing apps, there are also many options for editing images. Among these apps are Pixlr and MS photos, which have the tools to accomplish quick photo editing.

Pixlr X

Pixlr X is an online application for editing images. It is one of the applications of Pixlr. Here, you can edit and layout photos quickly, but using this requires Internet connection. To access it, visit Pixlr's website or use this link: <https://pixlr.com/x/>

To familiarize yourself with Pixlr X, here are its **tools**:



Arrange & Style – allows quick enhancements or changes to an image.



Add Text – lets you add and edit texts.



Cutout – is used for keeping or removing elements or background of an image.



Crop and Rotate – allows you to trim, flip and rotate an image.



Layout & Template – allows you to resize the image and canvas, as well as edit the background color.



Add Element – lets you add decorative elements to an image such as overlay, border, shape and stickers.



Adjust & Filter – allows you to make adjustments on the image's color, vibrance, lighting, and also where you can create an image filter.



Add Image – lets you add images from online sources, your computer/ smartphone, or from Stock by Pixlr.



Effect – lets you add image filters on your photo.



Liquify – tool for shrinking, enlarging or pushing areas of the image to make creative distortions.

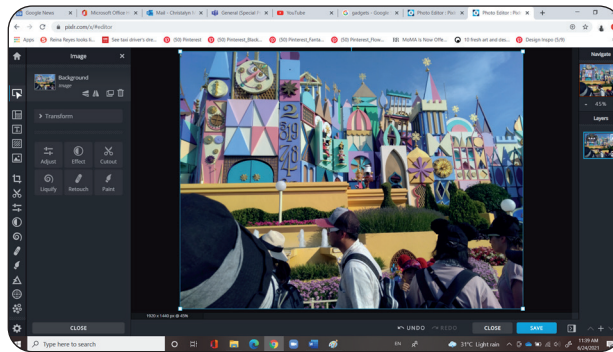


Retouch – comprised of tools to use for removing unwanted elements, cloning areas of the image, adjusting or adding sharpness or blurriness, and brightening or darkening an area of the image.

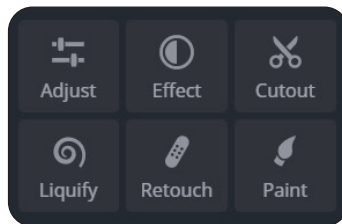


Draw – tool to draw and create elements.

How to Edit Photos in Pixlr X

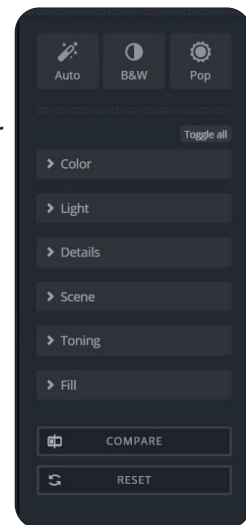


To apply simple edits in Pixlr X, click **Arrange and Style**. This will open a panel where you can access other editing tools, such as Adjust, Effect, Cutout, Liquify, Retouch, and Paint tool.



The **Adjust** tool has 6 selections of adjustments to enhance the appearance of a photo:

- **Color** can change a warm color display of a photo to a cooler color display.
- **Light** can increase or decrease the brightness of a photo.
- **Details** can blur or sharpen a photo.
- **Scene** can add the element vignette to a photo.
- **Toning** can change a cool tone to warm tone.
- **Fill** can apply a shade of color to the whole image.



Next to Adjust is **Effect**. Clicking it will open a set of filters you can apply to a photo to change its overall mood.

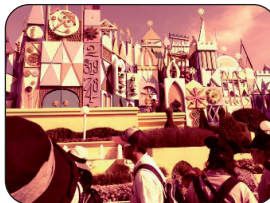
Example:



Original photo



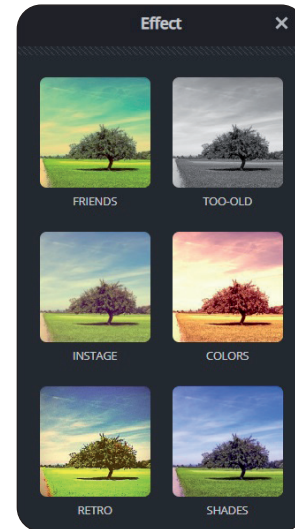
Effect 1



Effect 2

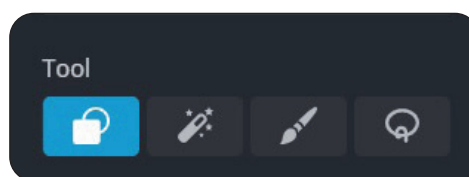


Effect 3

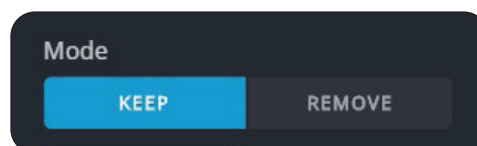


The third tool on the Arrange and Style is **Cutout**. This is used for keeping or removing elements of a photo, such as its background. To use this, first select a tool for cutting out a certain element of your image.

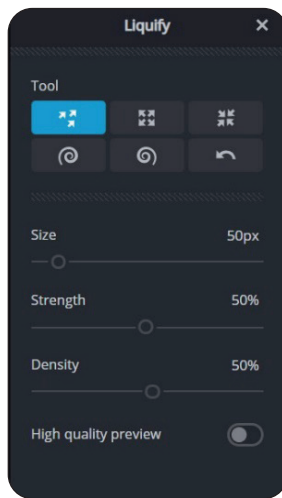
The cutout tools are **Shape Cutout**, which uses shapes to either keep or remove an element, **Magic Cutout** is used on more detailed areas, **Draw Cutout** uses a brush tool to remove or keep elements, and last is **Lasso Cutout**, which lets you control the shape and amount of element you want to select.



After selecting a tool, choose whether you are going to keep or remove an element. The blue colored button on Mode means that is the button enabled or selected.



Next, below Adjust is **Liquify**. This tool allows you distort the original image similar to this:

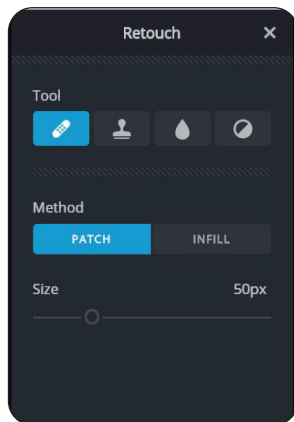


Original photo



Edited photo

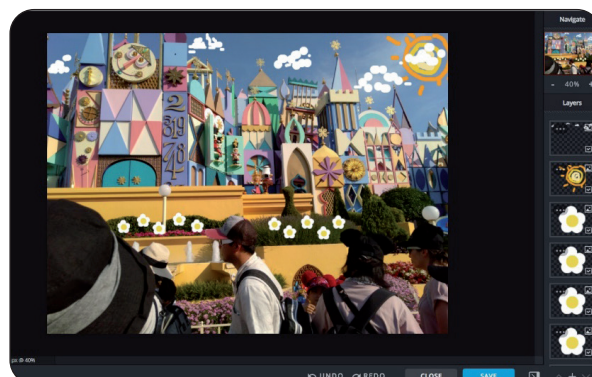
You can select from six different kinds of direction the distortions are to appear. You can adjust the size, strength and density of the liquify tool using the sliders below the six selections.



Next to Liquify is **Retouch**. The Retouch panel contains the tools for applying touch-ups or finishing touches to your image.

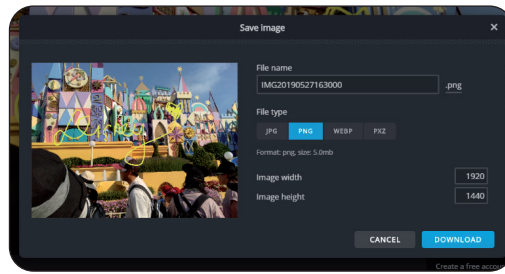
The first button is **Heal/Repair** used for removing blemishes or small unwanted elements. Second button is **Clone Stamp**, which is used for copying a certain part of a photo. Third is **Sharpen/Blur** used for adjusting the sharpness or blurriness of a photo. Fourth and last is **Dodge/Burn**, which are used for brightening or darkening a specific part of an image.

The last tool on the Arrange & Style panel is **Draw**. This contains tools for creating design elements or drawings on photos.



Saving Your Work

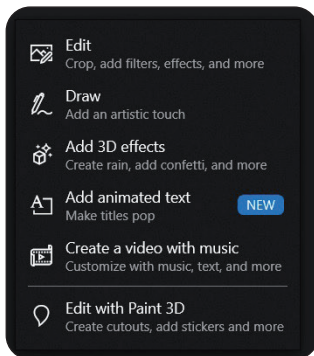
To save your work in Pixlr X, look at the bottom section of the editor. There you will see the **Save** button. Once you click it, a dialog box will appear. Here, you can change the filename of the image and select the type of image file you need. To get a copy of your work, click the **Download** button.



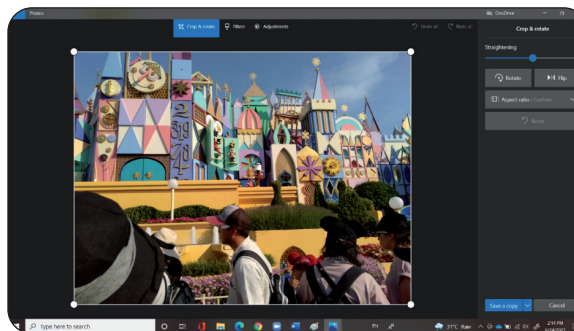
Desktop Photo Editor

MS Photos is a free photo editor of Windows. You can access it by typing “MS Photos” on the search box. Other method is to select and click a photo on your computer.

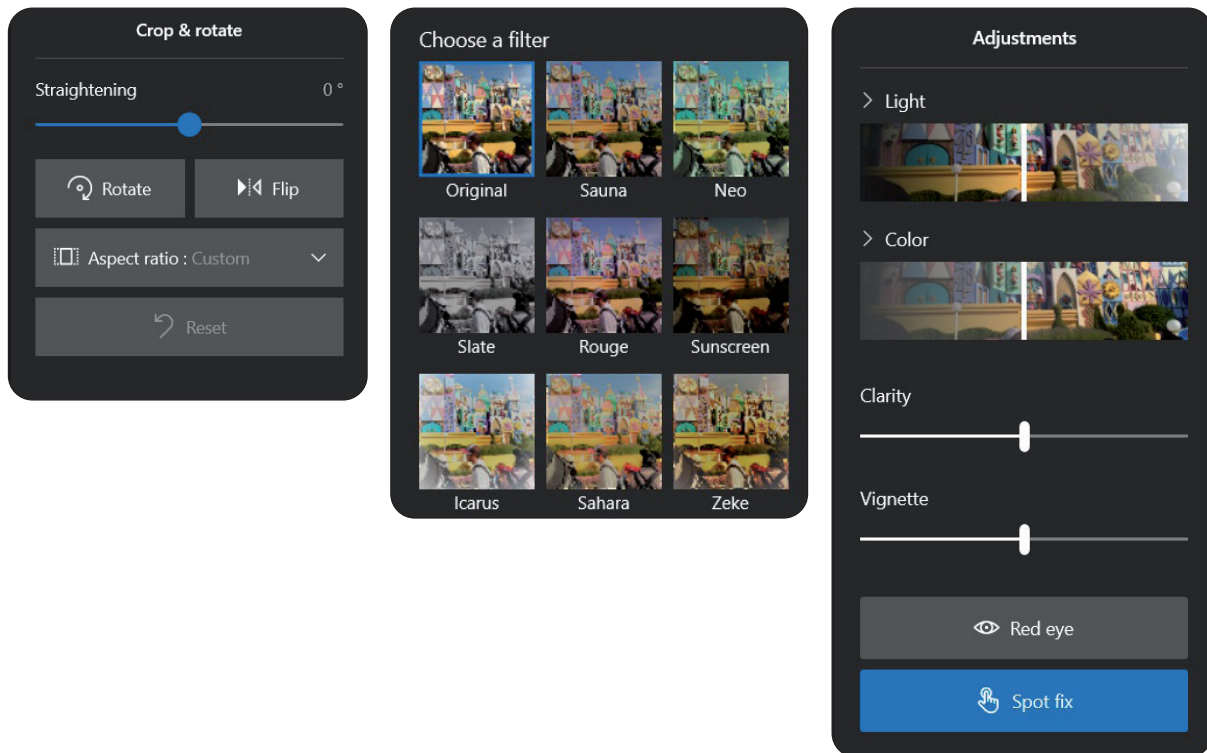
To use its photo editor, locate and click the Edit & Create button on the topmost section of the app.



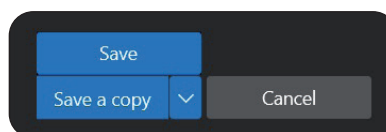
Clicking Edit & Create will reveal a selection of editing features. Select **Edit** to make image adjustments in MS photos



In Edit, you can apply simple enhancements like crop and rotate, add filters, increase or decrease its brightness and exposure as well as remove blemishes.



To save your edited image, click the Save button at the bottom section of the app. You can either save changes on the original file or have another copy, without changing anything on the original image.



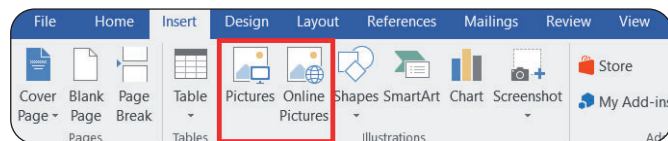
Creating a Document with Pictures

Inserting Pictures

Inserting pictures, or putting them into your page, is fairly easy.

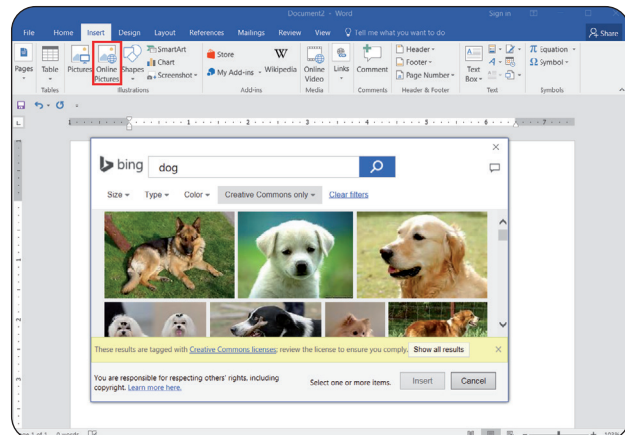
First, click on the Insert tab, then, look at the Illustrations group. On the left part of that group are the two commands you will use to insert a picture: Pictures and Online Pictures.

Inserting an image from Online Pictures into your page is easy, as it is just like inserting an image in PowerPoint 2016. Just click on the Online Pictures command button.

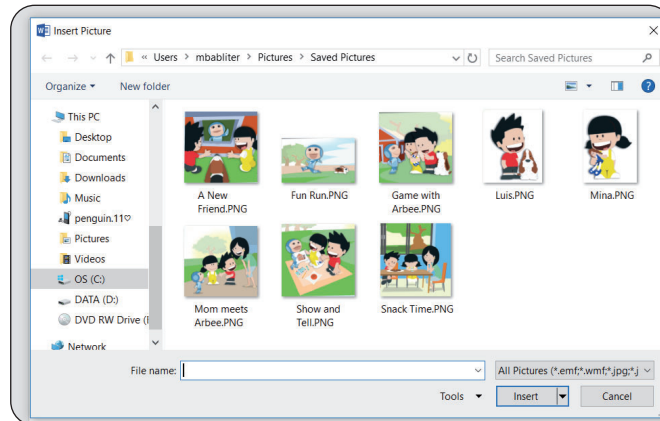


As with PowerPoint, click on the picture that you want and it will appear in your page.

If you want to insert a picture from another file, click on the Pictures command button. The Insert Picture window will then appear.

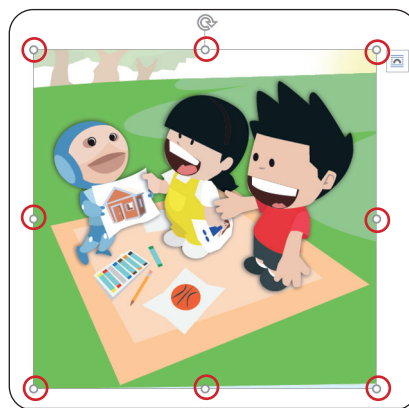


To get to the picture you want, go through the file directory the way you would for any file that you would open. Click on the file you want to use, then click on the Insert button at the bottom of the window. The picture will appear in your page.



Sizing Pictures

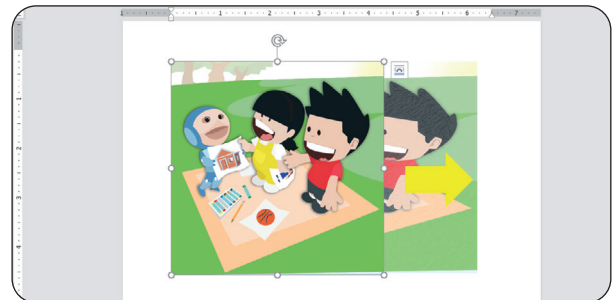
Let's say you already have on your page, a picture that you want to use, but it's either too big or too small to fit in the space that you want to put it in. Can you change your picture's size so it can fit? Of course! First, start by clicking on the picture itself. You will see a box around the picture, along with four small circles in the middle of the box lines, and four small circles on the corners. These are the **nubs** or handles, which you





will use to change the size of your picture. Pull on a circular nub by clicking and dragging on it. This will cause the picture to get bigger or smaller, depending on where you click and drag your mouse. Notice that, when you click and drag, your picture will always have the same **proportions**. That is, your picture will be resized to be a larger or smaller version of the original picture.

Now, pull on a circle nub in the middle of the box line by clicking and dragging on it. The picture will **distort**, which means that it will not look like a smaller or larger version of the original picture. If you pull on a circle nub in the middle of the box line on the side, for example, the picture will stretch sideways.



If you pull on a circle nub in the middle of the box line on the bottom, the picture will stretch downwards.



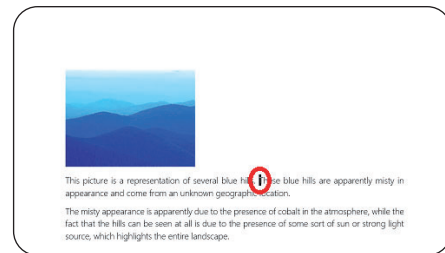
Positioning Pictures in Documents

Using the Position Command

You can now start laying out the picture in your page with any text that you may have typed out.

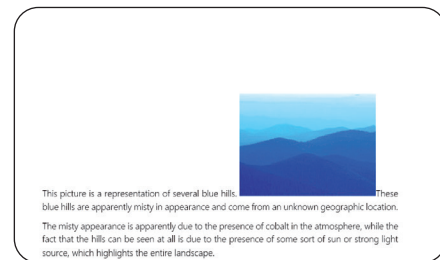
Let's say you have text and a picture on your page which looks like this:

Let's say you want to change the location of the picture—right between the first and second sentences of the first paragraph, for example. All you have to do is click and drag on the picture and bring it there!



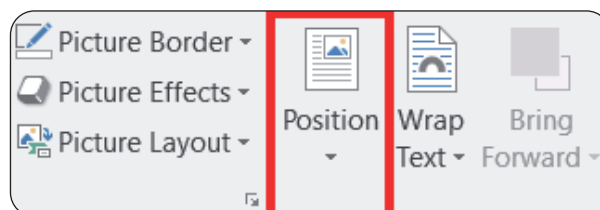
Notice the gray line which shows where the picture will go? It's been encircled in red.

Now, the picture might be okay where it is, but what if you wanted your text to appear in the white space to the left of the picture? You can't do that by just clicking and dragging the picture.

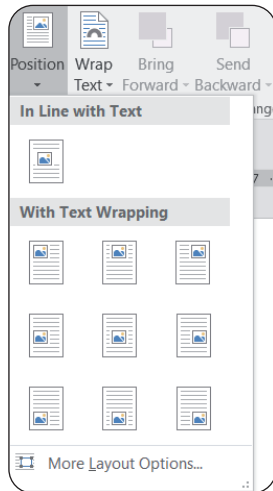


You might be able to use a text box, but an easier way to do that is to use the Position command.

To get to the Position command, first click on the picture, and then click on the Picture Tools Format tab. You will see the Position command button in the Arrange group.



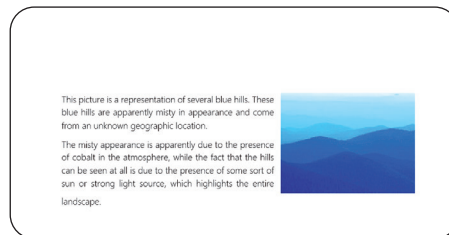
When you click on the Position button, the following selection box will appear:



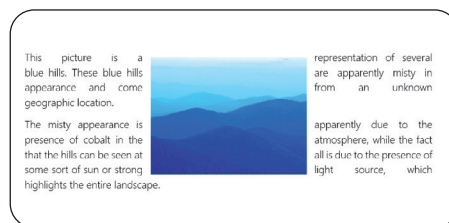
The **In Line With Text** option is the usual option where the picture is placed along with the lines of text. It's the one that usually applies when the picture is clicked and dragged.

The **With Text Wrapping** option puts the picture on that part of the page shown by the icon with the text wrapped around it. If you picked the icon with the picture on the lower left of the page, for example, the picture will appear on the lower left of the page, with text filling the right side.

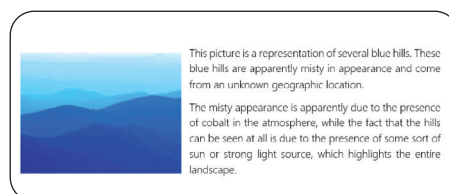
Let's say you want your picture to be on the upper right part of the page. After following the instructions, you should wind up with a page that looks like this:



And, if you wanted the picture in the middle top of your page, the picture would look something like this:

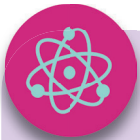


And, if you wanted it to appear on the upper left part, the page would look something like this:



In Business

Creating reports and presentations are also important for businesses. These are done to know what's happening in and around a company. However, a report or presentation without pictures or other elements beside text can be difficult to absorb. Simply adding images can be enough to improve your report or presentation. However, making time to use graphic software to create an attractive report or presentation is an effort worth appreciating.



SUMMARY

Adding photos or design elements to a document or report makes it interesting to see. A few changes to a photo or a simple drawing can help make a document or report engaging to read. The good thing is there are applications for drawing or photo-editing that are easy to learn, like MS Paint, MS Photos and Pixlr X. Inserting images or drawings to documents can be done using a word processing tool like MS Word.



EXERCISES

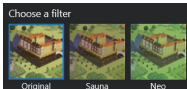
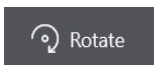
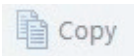
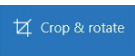
Exercise 1

True or False?

- _____ 1. Adding images or designs to a report is not helpful.
- _____ 2. Editing a photo requires a person to hire a professional.
- _____ 3. MS Paint is a software for editing photos.
- _____ 4. MS Photos is another software of Microsoft for photo-editing.
- _____ 5. You can select and crop elements in MS Paint.
- _____ 6. Pixlr X can be used offline.
- _____ 7. Quick photo-editing can be done in Pixlr X.
- _____ 8. You can add filters to images in MS Photos.
- _____ 9. The Liquify tool of Pixlr X can cutout parts of an image.
- _____ 10. Edit with Paint 3D is another online app of Pixlr X.

Exercise 2

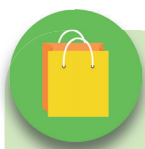
Identify which application each tool belongs to. Write **Paint** for MS Paint, **X** for Pixlr X, and **Photos** for MS Photos.

- | | | | |
|----------|---|-----------|---|
| _____ 1. |  | _____ 6. |  |
| _____ 2. |  | _____ 7. |  |
| _____ 3. |  | _____ 8. |  |
| _____ 4. |  | _____ 9. |  |
| _____ 5. |  | _____ 10. |  |

Exercise 3

Supply the missing words of each sentence.

- _____ 1. To insert a picture on a document page, click on the _____ tab.
- _____ 2. Button for Pictures and Online Pictures can be found in the _____ group.
- _____ 3. To insert pictures from the Internet, use _____ Pictures.
- _____ 4. There are _____ or handles around the picture to change its size.
- _____ 5. When you click and drag, your picture will always have the same _____.
- _____ 6. The picture will _____, which means that it will not look like a smaller or larger version of the original picture.
- _____ 7. If you pull on a circle nub in the middle of the box line on the side, for example, the picture will stretch _____.
- _____ 8. You will see the Position command button in the _____ group.
- _____ 9. The _____ option is the usual option where the picture is placed along with the lines of text.
- _____ 10. The _____ option puts the picture on that part of the page shown by the icon with the text wrapped around it.



LESSON OUTPUT

Create a report of the data you have research with tables, charts, photos or drawings. Take a screenshot of what graphic software you used to edit photos or create drawings. Include it at the end of your report.

Lesson Output Rubrics

Objectives:

- Gather data anything related to the Philippines.
- Create a report with tables, charts, photos or drawings.
- Use a productivity tool or graphic software.

CRITERIA	5	4	3	2	1	POINTS
1. Content/ Functionality	All 3 objectives for the activity were met.	All 3 objectives for the activity were met but were not exactly as instructed.	Only two of the objectives for the activity were exactly met.	Only one of the objectives for the activity was exactly met.	None of the objectives for the activity was met.	
2. Creativity	The student showed outstanding creativity by adding elements that made the output visually appealing.	The student showed adequate creativity by adding decorative elements in the activity output.	The student showed a fair level of creativity with the additional decorative elements.	The student showed some creativity with the additional decorative elements.	The student used only the given template and the answers were inadequate.	
3. Promptness	The output was completed two or more days ahead of the given deadline.	The output was completed one day ahead of the given deadline.	The output was completed by the given deadline.	The output was completed one to two days after the given deadline.	The output was completed three days after the given deadline.	

TOTAL

Agriculture

**Gardening Tools
and Equipment**



**Basic Gardening
(Crops and Ornamental)**



**Preparing Plants for
Food Consumption**



**Livestock/Poultry
Care at home**



Lesson 1

Gardening Tools and Equipment

Trivia



In the Philippines, many families have a vegetable garden in their own backyard made with simple recycled tools, like an old, rusty knife used as a trowel for turning the soil. Improvised tools for gardening have helped Filipinos provide for themselves and their families in times of crisis. Recycled implements such as eating utensils and other metal objects can easily be repurposed for growing food in gardens. During World War 2, when food was scarce, the common crop, based on the wartime stories of elders, was kamote (sweet potato).



LEARNING OUTCOMES

1. Define gardening.
2. Identify the different tools and equipment in gardening.
3. Discuss correct methods of planting.
4. Perform the proper way of using the tools in gardening.



ENGAGE

Watch the video about how to start a garden.

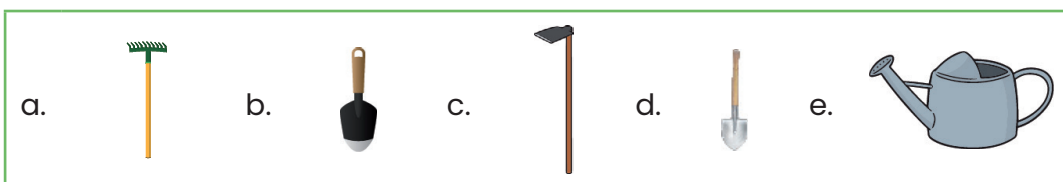
<https://youtu.be/IKIAoKHkss0>

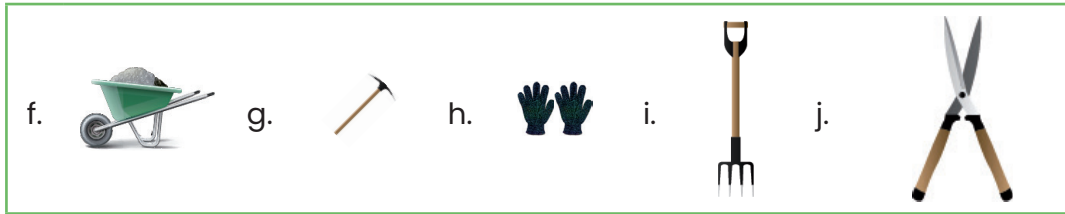


EXPLORE

What do you already know about gardening?

Identify the different garden tools and equipment. Choose the letter of your answers from inside the choice box.





- _____ 1. It keeps hands and fingernails dry and clean.
- _____ 2. A hand tool with a pointed, tapered metal blade and wooden, metal or plastic handle.
- _____ 3. A container used to sprinkle water on plants or irrigate soil.
- _____ 4. It consists of a fixed toothed bar used for loosening, and breaking up flattened soil, as well as for raking leaves, grass and other garden debris.
- _____ 5. It has a pair of long handles and two blades for trimming or cutting stems or branches.
- _____ 6. It has a broad flat blade with a sharp lower edge with a long wooden handle that ends in a hand grip. It is used with two hands for digging up soil.
- _____ 7. It has a long handle and a wide flat blade at the end that's designed to remove weeds and cultivate the soil before planting or sowing.
- _____ 8. It is a small cart with just one wheel and two handles at the rear. It can carry compost, move dirt and transfer garden supplies.
- _____ 9. It is a heavy two-handed tool used for digging, removing rocks, and trenching the ground. It has a long handle and either a vertical pointed blade or a horizontal cleaver.
- _____ 10. It is used for moving loose materials such as hay, compost, and manure. It usually has a wooden handle with a "D" or "T" handle at one end and looks like a giant fork.



RESEARCH

After watching the video about gardening, answer the following questions:

1. What is your observation about the video?
2. How will you start to make a garden?
3. Why are these tools and equipment important in gardening?



EXPLAIN

Gardening is the activity of preparing, growing, and implementing planting techniques to be able to produce a good harvest. It can bring profit and food for the family.



In the Philippines, many families have a vegetable garden in their own backyard made with simple recycled tools, which may be as simple as an rusty, old knife reused as a trowel for turning the soil. Gardening requires time and effort to clear the ground, till it, plant it, and harvest the produce. Gardening tools and equipment make it easier to work with crops for food. With the right tools, homegrown plants can provide food for a hungry family and prevent malnutrition. By working together in a garden, family members can become closer and achieve a comfortable life.

Gardening is also a form of exercise. Gardening at home ensures safe and healthy food for a household especially when the world is battling the COVID-19 pandemic. As people were quarantined and discouraged to go out, many have turned to home gardening. The term “plantito” or “plantita” which comes from the word plant + tito/ tita (Filipino for uncle or aunt) has since become popular and it refers to a person who is into plants or gardening.

Remember the song “Bahay Kubo” that mentions several vegetables that can be grown at home? That song literally depicts how rich our soil is to grow these plants. Thus, gardening helps to promote good health among Filipino families. It also aims to address nutrition concerns by encouraging all families to use indigenous or local seeds as well as organic fertilizers to produce healthy vegetables within households.

Gardening is an easy word to say but it requires time, effort, engagement, and most importantly, knowledge of methods and the skills to grow, propagate, improve and maintain the garden. In order to achieve a good yield in gardening, there is a need to use the proper tools and equipment. While expensive fertilizer and spraying chemicals can be used for a garden, they are not needed to begin gardening.

Safety Precautions

Gardening tools can be used for:

A. Digging

A pickaxe, spade, and garden hoe are pushed into the soil with one's foot and pulled back using the handle much like pulling a drawer. The digging fork, hand trowel and crowbar are also used for digging or breaking down firmly packed soil before the sowing of seeds. Gloves are used with these tools to keep the hands from getting hurt.

B. Levelling

The bow rake is used to clear, gather and collect leaves, hay, grass, and straw as well as for leveling the soil. Make sure there is no one behind you that might get hurt getting poked by the long handle.

C. Cutting

The bolo, splitting axe and cutting shears are all used to cut weeds, tree stems, tall grass, and even the trunk of trees. It should be swung away from the body and no one should be in the way of the blade.

D. Transferring/Transporting

The wheelbarrow and hand trowel are both used to assist in moving soil, compost, stacks of leaves, and seedlings to flower beds and should carry only enough weight for the person pushing it so its contents will not topple over.

E. Protection

Garden gloves are essential tools as they protect your hands from dirt and injury from splinters, scratches and scrapes. They help a lot when dealing with thorny plants in the garden. Gloves should be cleaned after every use to prevent infection from germs.

F. Polishing

A grindstone is used for sharpening garden tools. It should be steady and flat on the ground or floor. It must not slip because if it does, the blade you are sharpening might also slip and cut you.

G. Watering/Spraying

The water hose, sprinkler, and sprayer are intended for spraying and watering plants. You should not sprinkle on surfaces not meant to be wet, like electrical devices and power outlets that can cause electrocution.

Tools and Materials Needed

Tools/ Equipment	Name	Description/Use
	Hand trowel	A hand tool with a pointed, tapered metal blade and wooden, metal or plastic handle.
	Digging fork	It is used for moving loose materials such as hay, compost, and manure. It usually has a wooden handle with a "D" or "T" handle at one end and looks like a giant fork.
	Garden hoe	It has a long handle and a wide flat blade at the end that's designed to remove weeds and cultivate the soil before planting or sowing.
	Bow rake	It consists of a fixed toothed bar used for loosening, and breaking up flattened soil, as well as for raking leaves, grass and other garden debris.
	Wheelbarrow	It is a small cart with just one wheel and two handles at the rear. It can carry compost, move dirt and transfer garden supplies.

	Garden spade	It has a broad flat blade with a sharp lower edge with a long wooden handle that ends in a hand grip. It is used with two hands for digging up soil.
	Garden gloves	It keeps hands and fingernails dry and clean.
	Garden hand sprinkler	A container used to sprinkle water on plants or irrigate soil.
	Cutting shears	It has a pair of long handles and two blades for trimming or cutting stems or branches.
	Pickaxe	It is a heavy two-handed tool used for digging, removing rocks, and trenching the ground. It has a long handle and either a vertical pointed blade or a horizontal cleaver.
	Splitting axe	A tool with a flat but heavy sharp blade designed for cutting logs and tree branches.
	Crowbar	A long iron bar ending on one end with a flat prong that is used for loosening hard soil or for prying rocks loose.
	Bolo	A bladed iron tool, usually with a wooden handle designed for chopping things like bamboo, coconuts or wood.

	Grindstone	It is used to sharpen iron or steel bladed tools.
	Garden Hose	This is used for watering a garden.
	Sprayer	It is used for spraying water, fertilizer or insecticide onto plants.

Steps/Procedure for Safety

1. Make sure the tool is clean and does not have any loose parts before using it.
2. Use the tool only as intended.
3. If the tool is designed for two-handed use, do not use it with only one hand.
4. Clean the tool after every use.
5. Do not leave the tools in the way of people.
6. Store the tools in a secure place where they will not fall and cause injury.

The following are important information that you should know before beginning to plant:

1. Know the right tools and equipment.
2. Learn to apply the correct planting method for specific kinds of seeds or plants.
3. Prepare the right components that a seed needs to grow properly.
4. Develop patience. Plants don't grow in a day or two.
5. Enjoy the process. Growing plants is a productive activity. You will learn a lot from it.

Plant the Right Way

Planting is not just about burying a plant in some soil. There are correct methods to follow in order for a plant to grow well and healthy.

Direct seeding and indirect seeding are the two methods for planting or sowing seeds in the soil. Direct seeding means directly placing the seeds in a permanent soil bed. Indirect seeding, on the other hand, means having to plant, first, the seeds in a temporary location before transferring them in a permanent one.

Both methods of planting are guaranteed to work for certain types of seeds. These also have their respective advantages and disadvantages.

Direct Seeding/Planting

Type of seeds to plant:

- Big seeds
- Seeds that grow fast
- Seeds and plants that don't need extra care during the seeding stage.
- Examples: cucumber, radish, okra, beans, carrot

Advantages

- Has only few steps to follow for seeds to develop and grow well.
- Plants don't undergo stress or risk their roots getting damaged because they don't need to be transferred from one location to another.
- Seeds mature only for a week or more (7 to 10 days)

Disadvantages

- Seeds are exposed to pests like rats, birds and snails, which may eat them even before they start growing.
- Weeds commonly grow alongside seeded plants, competing for the needed nutrients for growth and development.

Indirect Seeding/Planting

Type of seeds to plant

- Small seeds
- Seeds that need extra care during their development stage.
- Examples: tomato, pechay, pepper, eggplant

Advantages

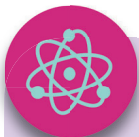
- Extra care means better growth development.
- Being in a temporary location means being able to be kept in safe places when bad weather occurs.
- Soil is protected from pests.
- You have better control of the seeds' growth.

Disadvantages

- More work/steps to be done.
- Can be an expensive method due to the extra care needed.
- Plants undergo stress due to transplanting or having to transfer from a temporary location to a permanent one.

In Business

As Filipinos like to use improvised tools, it can sometimes be dangerous since these items aren't really designed for gardening (like a broken kitchen knife used as a trowel). Therefore, it is a good thing for real gardening tools to be available for local gardeners to use whether it is at home or in a farm. This makes selling gardening tools a good business especially if they will help make gardening work easier and safer.



SUMMARY

Gardening is a very useful activity for a family and its household as it can be socially uplifting and a good source of income. It does not take much to start gardening since simple household tools can be reused for gardening purposes, but it's still best to know about and use tools designed specifically for gardening.



EXERCISES

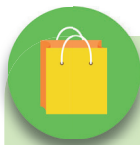
How much have you learned?

Choose the letter of the correct answer.

1. A hand tool used for digging, removing rocks and chopping roots when digging or trenching soil.
a. Garden spade b. Garden hoe c. Pickaxe
2. A simple container with a snout to sprinkle water onto plants.
a. Garden hand b. Garden hose c. Sprayer
sprinkler
3. A tool with a flat and sharp blade used to chop trees and their branches.
a. Cutting shears b. Splitting axe c. Bolo
4. A hand tool with a pointed blade and a wooden, metal, or plastic handle that's used for loosening the ground.
a. Hand trowel b. Digging fork c. Crowbar
5. It has a fixed toothed bar which is perfect for smoothing, loosening, breaking up compacted soil, as well as for collecting or gathering dried leaves, hay, straw, grass and other garden debris.
a. Bow rake b. Garden Spade c. Digging fork

Write YES if the statement is correct and NO if it is not correct.

- _____ 1. Gardening is a form of exercise and activity.
- _____ 2. A garden sprayer is used to water the plants.
- _____ 3. Gardening is profitable.
- _____ 4. Friendship and camaraderie are boosted by gardening.
- _____ 5. Gardening requires expensive fertilizer and spraying chemicals.



LESSON OUTPUT

Using one (1) gardening tool or equipment, send a 30-second video demonstrating the proper way of using it. Be creative in presenting your video. You will be rated based on the overall evaluation.

Rubrics for demonstrating the proper way of using a gardening tool

CRITERIA	5	4	3	2	1	POINTS
1. Proper use of gardening tools	Excellent in demonstrating proper use of tools and equipment.	Good in demonstrating proper use of tools and equipment	Average in demonstrating proper use of tools and equipment	Fair in demonstrating proper use of tools and equipment	Poor in demonstrating proper use of tools and equipment.	
2. Time Management	Completed early in the allotted time.	Completed on the allotted time.	Completed on the deadline.	Went beyond the allotted time.	The allotted time was ignored.	
3. Safety/ Sanitation/ Cleanup in doing the activity	The student demonstrated all the proper safety practices beyond expectations.	The student demonstrated the proper safety practices exceedingly.	The student demonstrated the proper safety practices adequately.	The student demonstrated some proper safety and sanitation practices.	The student demonstrated none of the proper safety practices.	
4. Adherence to the steps in using gardening tools	The student adhered to all the steps in using gardening tools.	The student adhered to more than half but not all of all the steps in using gardening tools.	The student adhered to half of all the steps in using gardening tools.	The student adhered to less than half of all the steps in using gardening tools.	The student adhered to none of the steps in using gardening tools.	

TOTAL

Lesson 2

Basic Gardening (Crops and Ornamental)

TRIVIA

Did you know that some ornamental plants can also be eaten? A good example is the santan plant which produces long-necked flowers with a sweet nectar inside. Children enjoy picking the flowers from clumps and sipping out the nectar as if from a straw. But aside from this fun fact, santan flowers can also be used in cooking as a garnish for dishes. They are not only decorative but also provide nourishment.



LESSON OUTCOMES

1. Differentiate between crops and ornamental plants.
2. Identify basic needs of crops and ornamental plants.
3. Learn correct cultivation methods/planting ornamental plants.
4. Discuss significance of ornamental plants to the family and community.
5. Explain specific skills and knowledge of planting ornamental plants as source of livelihood.
6. Enumerate proper methods of harvesting and marketing ornamental plants.
7. List crops and ornamental plants that you can see in your environment.



ENGAGE

Watch the following videos about ornamental plants and backyard gardening of food crops.

<https://youtu.be/Tn9X8-14rol>

https://youtu.be/0LLB_83f9mY



EXPLORE

Part I.

What do you already know about crops and ornamental plants?

- _____ 1. A harvested food for human consumption.
 - a. ornamental plant
 - b. crop
 - c. trees
 - d. flowering plant
- _____ 2. It can be used for aesthetic features and grown for decorative purposes.
 - a. vegetable
 - b. root crop
 - c. ornamental plant
 - d. industrial crop
- _____ 3. It is a process of improving aeration of roots for fast absorption of nutrients by the soil.
 - a. cultivating
 - b. weeding
 - c. watering
 - d. growing
- _____ 4. A combination of substances which are added to the soil and promotes growth of plants.
 - a. insecticide
 - b. pesticide
 - c. fertilizer
 - d. multi-insect repellent
- _____ 5. It is used to prevent the growth and spread of plant diseases.
 - a. pesticide
 - b. fertilizer
 - c. soil digging
 - d. insecticide
- _____ 6. Which of the following is an example of an ornamental plant?
 - a. eggplant
 - b. rose
 - c. string beans
 - d. tomato
- _____ 7. It is essential for growth and sustaining the freshness of plants.
 - a. soil
 - b. water
 - c. insecticide
 - d. sunlight
- _____ 8. Which of the following does not belong to the group?
 - a. santan
 - b. rosal
 - c. fortune plant
 - d. lady finger

_____ 9. Which statement is TRUE?

- a. Soil pH is the condition of acidity and alkalinity of the soil.
- b. Pesticides will encourage the spread of plant diseases.
- c. Cultivation can increase the growth of weeds.
- d. Usage of fertilizers decreases the amount of food crops.

_____ 10. Why do we need to take good care of plants?

- a. Plants wither when properly watered.
- b. Plants need water, air, sunlight, nutrients, and good soil in order to grow healthy.
- c. Plants obtain their own food and fertilizer for survival.
- d. Improper watering leads to easy development of food crops.



RESEARCH

After watching the video about ornamental plants and food crops, answer the following questions:

1. What is your observation about the video?
2. How will you differentiate ornamental plants from food crops?
3. Why is it important to provide the basic needs of ornamental plants and food crops?



EXPLAIN

Having plants in a certain garden or backyard space can be a very rewarding experience. There is joy and happiness upon seeing these fruit-bearing plants (food producers) and decorative plants (flowering or non-flowering) that grow around us. Both kinds are useful for human beings and contribute significantly to the economy. Planting can be also considered as a form of recreation for the whole family at home.

Every plant in a backyard or garden has needs such as water, soil, fertilizer, sunlight, etc. These are needed by plants for them to create produce and look beautiful. To grow and increase the harvest of food crops and sustain the life of ornamental plants, here are the basic needs.

Soil

Good and healthy soil is one of the most important needs of plants. It holds nutrients from decaying matter to support growth. Soil pH is the level of acidity and alkalinity of the soil. You can imagine acidic soil to be on the “sour” side while soil that’s more alkaline is more “bitter.” Bone meal, oyster shell, pulverized eggshells, and lime waste will make soil less acidic. Cultivating the soil improves underground air circulation and the absorption of nutrients by the roots of the plant.



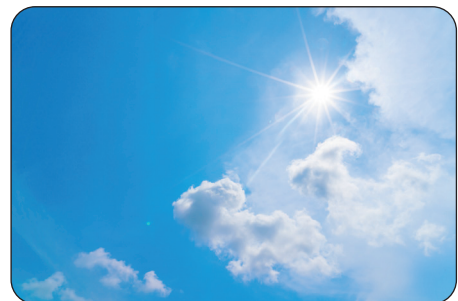
Water

Just like human beings, plants need to drink water in order to live. Water can also contain nutrients which are absorbed through the leaves and roots of the plant. It is important to water the soil of the plant if it dries up. Without water, plants will die. Watering plants should be done carefully because plants differ in their need for water. A cactus, for example, needs very little water. Plants grow healthy when properly watered.



Sunlight

Sunlight is needed by plants to be strong, fruitful, and flowery. This is because plants use sunlight to make food. They do this in their leaves in a process called photosynthesis. Too little sunlight will make plants weak and cause the leaves to fade, and later, fall off. Too much direct sun will burn plants.



Fertilizer

A fertilizer is a combination of substances which is added to soil to make it healthier for plants. Nitrogen, phosphorous, and potassium are nutrients in fertilizer that plants need to produce more flowers and fruit. Potassium helps plants by making them less prone to getting sick. Nitrogen helps produce greener leaves. Phosphorous makes the roots of the plant stronger and helps flowers to bloom.



There are two kinds of fertilizer: inorganic and organic. Inorganic fertilizers are odorless, liquid, soluble, and granular substances. These can be harmful to animals and the soil itself if too much is used. Organic fertilizers are natural and made of decomposed plant and animal waste products.

Two Kinds of Fertilizer	
INORGANIC	ORGANIC
Odorless	Natural
Liquid	Decomposed
Soluble	Plant matter waste
Granular	Animal waste

Examples of Organic Fertilizers	
Humus	Soil mixed with decayed plant and animal matter
Manure	Mainly waste from livestock like poultry
Compost	Made from decaying plant matter and food waste
Liquid	Comes from plant extracts mixed and decomposed together, like sugar and molasses

Clean Air

Clean and fresh air is needed by plants just as we do. Air that has smoke and harmful gases will harm plants by making them produce less food. Plants need to breathe in clean air. The gas they need the most is called carbon dioxide, which is breathed out by animals and people.

Proper Temperature

Plants differ in how they like the sun's heat. Some plants like it hot while some like it cool. A plant that likes to be under the sun may die if it is placed in the shade. On the other hand, a plant that likes being under the shade can burn if it suddenly gets exposed to direct sunlight. Knowing what a plant prefers will help make it grow better to bear flowers, fruits, and vegetables.

Space

Most plants need space to grow well. Some need good air flow and exposure to sunlight. Others like it crowded and moist. An improper environment will increase the chances of a plant suffering from diseases and limit its ability to grow and be nourished.

Control of pests and insects

An insecticide is a mix of poisons for get rid of insects harmful to plants, like aphids. It is either natural (organic) or man-made (artificial; synthetic). Insecticides can work, but insects that are always exposed to them can build up resistance to the poisons. Insecticides can be toxic to humans in large amounts so these need to be used carefully.

Ornamental Plants

Ornamental plants include trees, shrubs, or herbs that are cultivated for decorative purposes. They may be flower-bearing or non-flower-bearing plants. Either way, they are known for their pleasing appearance. Ornamental plants can be grown inside or outside of the house. Lovely plants bring beauty and freshness into our homes. Some types can repel mosquitoes and other bugs.



Ornamental plants can be a source of income, with the “new normal” situation creating increased interest in plants. Gardening is one of the many ways people who’ve lost their jobs during the pandemic have found a new way to earn a living.

The following are the common ornamental plants that you could easily grow in your garden: rose, desert rose, marigold, rosemary, lily, tulip, daffodil, snake plant, sampaguita, and amaryllis.

Growing Ornamental Plants

Like any other plants, ornamentals need the following basic needs: soil, water and sunlight. But aside from these, planning to grow ornamentals will need you to learn correct planting methods.

Prepare planting soil.

How to Make Garden Soil at Home:

Tools/Materials Needed:

- Gloves
- Hand Trowel
- Pots/recycled containers like plastic cups, bottles, etc.
- Soil
- Compost
- Cocopeat or rice hull or peatmoss
- Carbonized rice hull (sinunog na balat ng palay)
- Large container (for mixing the components of the garden soil)

Procedure:

1. Get the soil, compost, cocopeat/rice hull/peatmoss and carbonized rice hull
 - There are different types of soil in the market. Research them or try asking a seller. It’s OK to use soil that you find near your home, but remember to separate stones or pebbles out of the soil before using it.
 - A compost is a mixture of organic waste materials like animal waste, food peelings and dead leaves, used as a nutrient-rich soil fertilizer. You can also create compost at home or buy packed compost from the market.

2. Use 3-1-1-1 measurement to create the mixture of all the components for a garden soil. 3 cups for the soil, 1 cup for the compost, 1 cup for the cocopeat/rice hull/ peatmoss, and 1 cup for the carbonized rice hull. Pour them one by one into the large container.
3. Mix the components using your hands or with a hand trowel. After that, you can now place them on pots.

Select the right ornamental to plant.

There are different types of ornamental plants.

- Ornamental Trees – these are types of trees that don't bear fruits.
- Ornamental Shrubs – a type of ornamental plant that do not grow into tall trees.
- Ornamental Flowering Plants – these are ornamentals that bear flowers that can have amazing scents.
- Ornamental Grass – a type of ornamental that only grows foliage or leaves but has no flowers.
- Ornamental Herbs – ornamental plants that are not only for decorations, but whose leaves can also be used in cooking or therapy.

If you will visit a garden center or seller of ornamental plants, you should first know what a quality-ornamental looks like:

- Bare-root ornamentals or those that are sold without pots, should not have dried roots. They should have white roots, healthy-looking leaves and flexible stems.
- A good quality ornamental does not have thick or large roots. It should have a fine, fibrous or smaller size of roots.

Water plants before sowing them in the soil. This is done to avoid roots from drying.

After planting, water the plant once more to settle the soil.

Place 3 to 5 inches of mulch to preserve moisture.

- Mulch is used to hold moisture of the soil and prevents growth of weeds. Organic mulch is composed of dried leaves, wood chips and tree bark. Inorganic mulch is composed of rocks, gravel or marble.

Give the right amount of water to your plants.

Overwatering can kill the roots of your plants, while underwatering will cause leaves to dry out, but the plant can still be saved once enough water is given.

Gardening (Ornamental Plants) as Livelihood

Ornamental plants are bought by customers who want to beautify their homes. They are used as decorative pieces in backyards or inside homes.

Commercial gardening benefits not only you, but other people as well. Having a space to view plants at home helps relieve stress and improve moods. Plants are also a way to bring the benefits of nature to a community; they clean the air, prevent soil erosion, can be used as ingredients for medicine, beautify spaces, and can help lessen the effects of global warming.

Crops

Crops are cultivated plants or the products of these plants that can be harvested. A crop can produce fruit, grains, or vegetables, which are edible for human consumption. Crops harvested from a garden can provide essential sources of energy, minerals and vitamins for healthy and nutritious food servings for the family. It can also be a good source of income to provide for the needs of family.



Here are some crops that you might find in your surroundings: tomato, winged beans (sigarilyas), squash, Malabar spinach (alugbati), sweet potatoes (kamote), lady finger, eggplant, Chinese pechay, bitter melon (ampalaya), and radish.

The raising of food crops and ornamental plants is not an easy chore. There is a lot of effort needed and many methods to learn and follow. It requires investing time, energy, money and other resources. It can take away time for other household chores. Even so, taking care of plants can be satisfying.

Basic Tools Required

In gardening, the simplest tools needed would only be those that can...

1. dig into soil.
2. loosen hard soil.
3. transfer plants into soil.
4. cut stems
5. water plants
6. protect from sun and dirt

Safety Measures for Basic Gardening

1. Wear personal protective equipment such as a face mask, gloves, apron, and boots.
2. Read the instructions on how to use insecticide.
3. Check the condition of tools, such as sprayers, before using them.
4. Focus when using a gardening tool.
5. Avoid too much exposure to insecticide.
6. Clean up after working on soil (take a bath with soap and water).

You can show how you love and care for plants by giving plants' needs for soil, water, sunlight, fertilizer, clean air, the right temperature, space, and a pest-free environment. In return for making them healthy, plants will provide you with their fruits and beauty.

Methods in Harvesting and Marketing Ornamental Plants

Harvesting ornamental plants:

When the leaves or flowers of an ornamental plant are abundant enough to be grouped into smaller pots, that is the time when you may divide them and transplant them. Transplanting means replanting or transferring a plant or tree to another soil bed.

Needed Tools:

Gloves, Hand trowel, Garden pruner or garden scissors.

Procedure:

1. Gently pull the plant along with the soil out from its pot.
2. Use a garden pruner or garden scissors to cut a one-inch portion from the bottom part of the soil.
3. Then, make cuts on the sides of the remaining clump of soil.
4. Next, to divide the plant, check which stems are closely grouped together. Use that as the indicator for dividing the plant.
5. Use the hand trowel or any sharp tool to divide the plant along with the soil and roots.
6. When replanting the divided plants on smaller pots, put first a layer of soil in the pot.
7. After that, sow the plants on their soil. Add another layer once they are planted, but don't fill the whole pot with soil.

Watch this video to have a clearer idea of the procedure:

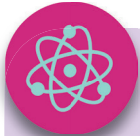
<https://youtu.be/v-JN-6g7uK8>

How to market ornamental plants:

- a. Use social media. Engage customers to buy by posting or sharing important information like ways how useful ornamental plants are.
- b. If you can, try to create a YouTube channel and upload videos about ornamental plants.
- c. Join groups of ornamental sellers or an online market for selling ornamental plants.
- d. If it is possible, create a display of ornamental plants outside your house, where people in your community or those who will pass by your house will see them.

In Business

There are many ways to earn in gardening either ornamental plants or crops. The plants themselves can be bought for either their beauty or being a source of food. Plants can be propagated to produce more plants. This way, there can be a continuous supply for customers.



SUMMARY

Crops and ornamental plants are essential to people. Both kinds can be grown in a garden. Ornamental plants can bring both joy and income to a family because of their beauty. Crops are mainly for consumption as food and medicine. Ornamental and crop plants provide many benefits. Planting is a fun, family-friendly activity. It allows the family to spend time together providing the needs of growing garden plants.



EXERCISES

Exercise 1

Choose the letter of the correct answer.

1. All these are plants' basic needs except...
 - a. salt
 - b. water
 - c. soil
 - d. sunlight
2. It is a combination of substances added to the soil used to promote the healthy growth of plants.
 - a. fertilizer
 - b. soil
 - c. air
 - d. space
3. Which sentence states an improper action in gardening?
 - i. Not taking a bath after working with soil
 - ii. Wearing of protective equipment when working with insecticide
 - iii. Lack of focus when using a gardening tool
 - iv. Checking the condition of a tool before using it
 - a. i,ii
 - b. i, iii
 - c. ii,iii
 - d. ii,iv
4. The level of acidity and alkalinity of the soil.
 - a. nitrogen
 - b. potassium
 - c. soil pH
 - d. nitrogen
5. It is absorbed through the roots from the soil.
 - a. fertilizer
 - b. soil
 - c. insecticide
 - d. humus

6. Known for their aesthetic features.
- a. ornamental plants
 - b. food crops
 - c. food crops
 - d. grains
7. Designed to kill only insects, some of which may be harmful to plants.
- a. fertilizer
 - b. insecticide
 - c. pesticide
 - d. toxic substance
8. Used by plants to make their own food in their leaves.
- a. air
 - b. fertilizer
 - c. sunlight
 - d. space
9. Can be toxic to humans in large amounts since they contain poison.
- a. water
 - b. potassium
 - c. vitamins
 - d. insecticide
10. Which of the following is NOT an example of an organic fertilizer?
- a. humus
 - b. soluble chemicals
 - c. compost
 - d. green manure



LESSON OUTPUT

Create a 30-second video showing yourself with a gardening tool tending to a crop or an ornamental plant found in your surroundings. Be artistic in presenting your video.

Lesson Output Rubrics

CRITERIA	5	4	3	2	1	POINTS
1. Content/ Functionality	Shows excellent examples of a crop and an ornamental plant.	Shows two good examples of a plant, but they are only either both a crop or ornamental.	Shows only one plant, which is either a crop or an ornamental.	Shows plants that are neither clearly a crop nor ornamental.	Shows plants that are not real or are just pictures.	
2. Creativity	The student adhered to all 5 requirements in the instructions.	The student adhered to only 4 requirements in the instructions.	The student adhered to only 3 requirements in the instructions.	The student adhered to only 2 requirements in the instructions.	The student adhered to only 1 requirement in the instructions.	
3. Promptness	The project was completed and sent in well ahead of the given deadline.	The project was completed and sent in just before the given deadline.	The project was completed and sent in by the given deadline.	The project was completed and sent in right after the given deadline.	The project was completed well beyond the given deadline.	
TOTAL						

Lesson 3

Preparing Plants for Food Consumption

TRIVIA

Edible plants are a group of plants which are safe to cook, serve, and eat. The edible parts include the roots, stems, leaves, flowers, fruits, and seeds, which can be eaten. There are almost 20,000 species of plants in the world, but fewer than 20 species provide 90% of the plants used for our food.



Growing plants in a garden space or backyard is a popular activity. The planting of fruits and vegetables in a garden provides fresh produce for the table as well as reduces the daily expenses for food items. Edible plant parts are easiest and least expensive to regrow in the garden. Vegetable cuttings can grow into a new plant, depending on what works best for the plant.



LESSON OUTCOMES

1. Demonstrate the systematic method of caring for plants.
2. Identify edible plants for cooking.
3. Differentiate between types of crops (fruits, vegetables, root crops, and non-traditional crops)
4. Demonstrate how to regrow a vegetable cutting



ENGAGE

Watch the following videos about planting and harvesting vegetable crops and regrowing a vegetable cutting.

<https://youtu.be/nGYDLwfEfE8>

<https://youtu.be/f5DvNHxCyGw>

<https://youtu.be/Ocp2R98T5w0>



EXPLORE

Part I.

What do you already know about edible plants, different types of crops and ways of regrowing a vegetable cutting? Choose the letter of your answer.

- _____ 1. Plants which are used as food by human beings.
 - a. edible
 - b. crops
 - c. ornamental
 - d. decorative
- _____ 2. Which of the following DOES NOT belong with the other three?
 - a. string bean
 - b. snake plant
 - c. cauliflower
 - d. celery
- _____ 3. This refers to the fresh edible portions of certain non-woody stems.
 - a. root crops
 - b. seeds
 - c. vegetables
 - d. flower
- _____ 4. This part of the plant contains health-promoting components such as essential minerals, significant vitamins, antioxidants, and fiber.
 - a. ornamental
 - b. seeds
 - c. fruits
 - d. roots crops
- _____ 5. These grow underground and absorbs nutrients from the soil.
 - a. fruits
 - b. vegetables
 - c. non-traditional crops
 - d. root crops
- _____ 6. This group includes soybeans, sugarcane, rice, cotton, coconut, and corn.
 - a. root crops
 - b. non-traditional crops
 - c. fruit crops
 - d. vegetable
- _____ 7. What are edible plants?
 - a. Plants used for clothing.
 - b. A group of plants that are safe to eat and prepared for food.
 - c. Plants which can produce starch and essential minerals needed by the body.
 - d. Plants which grow naturally in the backyard.

- _____ 8. Which of the following best describes fruit crops?
- Fruit crops are great sources of fiber, vitamins, and other medical compounds.
 - These grow off the underground stems and are used for food.
 - These are made mostly of starch and sugar.
 - These are used for clothing and other products.
- _____ 9. Which of the following is TRUE?
- Root crops contain Vitamin C and other minerals.
 - Vegetable crops are a great source of energy and carbohydrates.
 - Non-traditional crops are more delicious and nutritious when inorganic fertilizer is used.
 - Vegetable crops are grown for food and play an important role in human nutrition.
- _____ 10. Why do we need to regrow a vegetable cutting?
- It makes the soil unfertile.
 - It is expensive.
 - It takes time to prepare.
 - It is easy to plant.



RESEARCH

After watching the video about edible plants, different types and regrowing vegetable cuttings:

- What are your observations on what was shown in the video?
- How can you differentiate types of crops (fruits, vegetables, root crops, and non-traditional crops)?
- Why is it important to regrow a vegetable cutting?



EXPLAIN

Definition of Terms

Edible plants – plants which can be consumed by people.

Fruit crops – plants whose fruit is eaten as food.

Vegetable crops – group of plants whose edible portions are non-woody stems.

Vegetable cuttings – stems of plants that are easily regrown.

Caring for Plants

Keep in mind that growing healthy plants for food consumption is very important. Anything that goes into your body should be safe for eating or does not contain harmful substances. Thus, a system of caring of plants is needed in order to take really good care of them.

1. **Sunlight:** Place your plants where they can catch direct sunlight. Plants can differ on the amount of light they need per day. Make time to research about the number of hours your plant needs to absorb.
2. **Watering:** Make sure they are watered enough and regularly.
3. **Fertilizing:** fertilize plants every few weeks. This is done to give more nutrients to plants.
4. **Cleaning:** Plants that are kept indoors are prone to being covered with dust. Either wipe them using a wet cloth (use warm water), or rinse them under running warm water.

Edible plants can be consumed by humans either cooked or raw. Not all parts of just any plant are edible, but all parts of edible plants are safe to eat. You just have to know which ones. Edible plants have a high nutritional value and are delicious and nutritious when cooked. Common edible plant parts are pods with seeds, roots, flower, leaf, fruits with seeds, top swollen stem, fruit-interior pulp and seeds, young flower, rind of fruit, stem shoots and immature flowers.

Some edible plants used for cooking are:

- Starchy staples, such as sweet yam, sweet potato, cassava, taro, rice, corn;
- Legumes, such as snake bean or string beans (sitaw), cowpea (balatong), winged bean (sigarilyas), pigeon pea (kadyos), lima beans (patani), Baguio beans, lablab beans (bataw), mongo beans;
- Leafy vegetables, such as kangkong, pechay, pako, mustasa, saluyot, kamote tops;
- Fruits, such as banana, guava, papaya, jackfruit, pomelo, mango, mangosteen, guyabano, rambutan;
- Vegetables, such as lady fingers (okra), eggplant, squash, ampalaya, sayote, patola;
- Root crops, such as sweet potato, radish, taro, sweet yam, cassava, garlic, turnip, carrots and ginger;
- Nuts;
- Herbs;
- Seeds;
- Other foods (malunggay, sili, pepper, avocado, coconut, lemon grass (tanglad)).

Different types of crops provide different nutrients.

Fruit crops are plants whose fruit is eaten as food, either fresh and raw or cooked, such as a jam.

Fresh fruits are usually high in fiber, Vitamin C and water, as well as Vitamin A, iron, antioxidants, fibers and other important nutrients the body needs to fight and protect against disease. Fruit crops are cultivated for their high nutritional value.



Vegetable crops are a group of plants whose edible portions are non-woody stems. Many parts of vegetable crops, such as the leaves, stems, seeds, flowers and mature fruits, are eaten as part of a meal. Vegetables are low in fats and carbohydrates but are an essential source of certain nutrients, minerals and vitamins for humans. Vegetables supply dietary fiber, antioxidants (Vitamins A, C, and E) which reduce the possibility of such illnesses as cardiovascular diseases, cancer, and stroke. Most nutritionists encourage people to eat at least five servings of vegetables a day.



Root crops are plants whose roots are eaten as food. These absorb, from the soil, the nutrients they need these absorb the nutrients they need from the soil. Root crops are rich in starch or sugar which, when taken in by the body, are broken down into glucose, which is the body's main source of energy. These also provide essential nutrients our body needs, such as iron, calcium, folate and Vitamin B.



Non-traditional crops and their products are grown primarily for their high cash sale values and export potential. They are not part of the customary diet of the local population. These crops include coconut oil, dried coconut, dried mangoes, pineapples, dried bananas, durian and cacao. The growth and demand of non-traditional products require technology and money to generate profit, as non-traditional crops require a lot of effort to grow. All such crops must also meet the manufacturing standards, sanitary and phyto-sanitary requirements of the country they are exported to.



Regrowing a vegetable cutting is one way to reduce waste in the kitchen. Doing so also saves money, since buying fruits and vegetables from the store or the market costs money. Each type of plant has a certain part which is used for regrowing. Vegetable cuttings, like the stems of camote tops, kangkong, celery, radish, parsley, thyme, scallions and lettuce are easily regrown.

In Business

Raising and selling fruits, vegetables and root crops are the main source of income for farms, while raising and selling non-traditional crops are also another kind of business opportunity. These crops require a large amount of space to be profitable, if you go into this, you should learn from others who are already experts, such as farmers, as well as learn what technologies are available (such as tractors and fertilizers) to help you grow your crops.



EXERCISES

Exercise 1

Choose the letter of the correct answer.

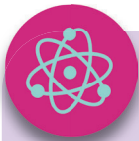
1. Which statement is CORRECT?
 - a. Edible plants are safe to eat.
 - b. Edible plants have no nutritional value.
 - c. Any part of an edible plant has toxins that can cause digestive problems.
 - d. Edible plants should not be eaten.

2. Why do you think edible plants are consumed by human beings?
 - a. These contain few vitamins and minerals.
 - b. These have nutrients which are needed by the human body.
 - c. These gives dietary fiber that strengthens chronic ailments.
 - d. Edible plants are easy to grow and harvest.

3. Which pair are fruit crops?
 - i. banana-cabbage
 - ii. coconut-mango
 - iii. string beans-cowpea
 - iv. carrot-durian
 - a. ii
 - b. iii
 - c. i
 - d. iv, ii

4. What are fruit crops?
 - a. These produce sugar rich food.
 - b. These can be cooked on their own.
 - c. These provide nutrients which help our bodies fight and protect against disease.
 - d. These make our surroundings look attractive and beautiful.

5. Which of the following sentences describes vegetable crops?
 - a. These bear fruits which are then only sold for export.
 - b. These are low in fat and carbohydrates but high in dietary fiber.
 - c. These can be broken down into glucose.
 - d. These give energy to our body.
6. Which statement is FALSE?
 - a. Vegetables carry mostly starch and sugar.
 - b. Vegetable crops are plants whose edible portions are non-woody stems.
 - c. Edible plants can be eaten raw or cooked.
 - d. Non-traditional crops are plants grown primarily for their high sale value and export potential.
7. Which of the following absorb nutrients from the soil that allow them to grow taller and faster?
 - a. fruit crops
 - b. vegetable crops
 - c. root crops
 - d. non-traditional crops
8. Which crop is usually high in fiber, Vitamin C and water?
 - a. root
 - b. fruit
 - c. vegetable
 - d. non-traditional crops
9. What are non-traditional crops?
 - a. These are grown to reduce heart ailments.
 - b. These include products like coconut oil, dried coconut, dried mangoes, pineapple, dried bananas, durian and cacao.
 - c. These are rich in starch or sugar which are utilized by the body as sources of energy.
 - d. These are plants whose edible portions are certain non-woody stems.
10. Why might regrowing of a vegetable from a cutting be practiced?
 - a. Doing so increases the food budget.
 - b. This is an extra task to do.
 - c. This promotes self-sufficiency and reduces household expenses.
 - d. It gives something to worry about.



SUMMARY

Edible plants are useful to us as food. Examples of these are fruits, vegetables and root crops. Non-traditional crops are grown to be sold and exported to other countries.



LESSON OUTPUT

Demonstrate regrowing a vegetable cutting (e.g., sprouted scallions) using a slide show. Be artistic in presenting your slides.

Lesson Output Rubrics

CRITERIA	5	4	3	2	1	POINTS
1. Content/ Functionality	The slideshow is what is desired, is free of mistakes, is neatly and clearly presented and works as expected.	The slideshow is free of mistakes and is what is desired / works as expected, but the presentation isn't neat or clear.	The slideshow is free of mistakes and is what is desired / works as expected, but there is one mistake visible. The presentation isn't clear.	The slideshow is what is desired / works as expected, but there are two or more mistakes visible. The presentation is messy.	The slideshow isn't what is desired / doesn't work as expected.	
2. Creativity	The student's output was unique to the student and based on first-hand research, i.e. he/she interviewed an authority on the topic.	The student's output was in the student's own words and was based on second-hand content researched on the project.	The student's output was essentially rephrased from second-hand research material.	The student conducted research but essentially copy-pasted directly from another source.	The student did not attempt to research for the project.	
3. Promptness	The project was completed two or more days ahead of the given deadline.	The project was completed one day ahead of the given deadline.	The project was completed by the given deadline.	The project was completed one day after the given deadline.	The project was completed two or more days after the given deadline.	
TOTAL						

Lesson 4

Livestock/Poultry Care at Home

TRIVIA

In 2019, the Philippines produced 2.3 million tons of hogs, making it the most-raised livestock in the country. This showed that livestock and poultry raising has been increasing and becoming popular in the Philippines as a way to earn money.



LESSON OUTCOMES

1. Learn the benefits of taking care of animals at home.
2. Identify animals that can be raised at home.
3. Enumerate proper ways of caring for animals at home.



ENGAGE

Watch this video and learn facts about farm animals.

What are Farms??? by Ellie Explorer- Wild Brain

<https://www.youtube.com/watch?v=cSSLYfparXM>



EXPLORE

Answer the following.

1. What do chickens give us?
 - a. milk
 - b. eggs
 - c. butter
 - d. wool
2. What do cows give us?
 - a. milk
 - b. eggs
 - c. transportation for food
 - d. wool
3. What do pigs give us?
 - a. milk
 - b. eggs
 - c. wool
 - d. meat
4. What do animals provide for us?
 - a. food
 - b. profit
 - c. business
 - d. all of the above
5. Which among these choices is a basic need of animals?
 - a. toys
 - b. clothes
 - c. shelter
 - d. none of the above
6. Which among these choices is another basic need of animals?
 - a. food
 - b. clothes
 - c. other animals
 - d. all of the above
7. Which of the following you SHOULD NOT do when raising animals?
 - a. Give them shelter
 - b. Provide them clean water and healthy food
 - c. Disinfect their area
 - d. Put them in small spaces where they can't roam around
8. Which of the following you SHOULD NOT do when raising animals?
 - a. Visit them regularly
 - b. Casually touch pregnant animals
 - c. Give them love and care
 - d. Stay calm when you're around them

9. Which of the following you SHOULD do when raising animals?
- a. Get many helpers for 2-3 livestock or poultry
 - b. Give water from unsafe water source
 - c. Provide proper shelter and food
 - d. Clean their area at least twice a month
10. Which of the following you SHOULD do when raising animals?
- a. Be calm around them
 - b. Get many helpers for 2-3 livestock
 - c. Casually touch pregnant animals
 - d. Clean their area at least twice a month



RESEARCH

From the video you just watched, kindly list down the things you have learned.



EXPLAIN

Definition of Terms

self-sufficient – the ability of a person to provide his/her own needs

livestock – domesticated mammals like cattle, cow, horses and pigs that provide meat or milk

poultry – domesticated birds that provide eggs and meat

non-biodegradable – waste that does not decompose naturally

Livestock and poultry raising is one of the ways people earn money. It is also a way for livestock or poultry raisers to provide food to their families. However, with the global pandemic affecting supplies of resources, more people became aware of just how important a steady food supply is, and how they might benefit from developing survival skills such as animal raising.

Just like planting, there are also important things that must be learned before becoming a animal raiser, such as knowing the right animals to raise in your home, what their basic needs are, and how to take proper care of them.

Advantages of Raising Livestock and Poultry at Home

1. **Help the family become self-sufficient.** Livestock and poultry are sources of food. Having available animals in the backyard secures the family food supply for a period of time. It also helps the family to survive difficult situations, like a pandemic, where it prevents the family from hunger.
2. **Saves costs on food.** Another benefit of animal raising is it saves the family's budget on food. Instead of spending it on restaurant meals or on market ingredients, it can be saved for other needs of the family.
3. **Earn money to support the family.** Aside from having a consistent food source, raising animals is a way to earn money. You can raise and sell live animals, or make products out of their meat and sell them.
4. **Become responsible.** Taking care of plants or animals is a lot of work, but it helps you understand what it means to survive. Because of this, you learn to put more effort in making sure they grow well and healthy.
5. **Lessens non-biodegradable waste.** Producing your own food also helps lessen the use of non-biodegradable packaging. Most products in the market use some kind of plastic packing material. These materials harm the environment and are one of the main reasons of heavy floods in the country.

Animals to Raise at Home in the Philippines



Chickens lay eggs and are sources of protein. They are energetic and friendly animals.

In raising them, they need to be in a secured space where animals, like dogs, can't attack them.

Hens or female chickens should have a special spot for laying their eggs.



Ducks are like chickens because they also lay eggs and provide meat. They are a type of poultry animal that loves water.

In raising them, water is very essential. They love to dunk their heads in water or play on puddles of water, which makes them very happy.

In the Philippines, their eggs are made into “balut” and salted egg.



Quails or “pugo” lay eggs too, but are not as big compared to chicken and duck eggs.

Raising them is easy compared to chickens. They can be raised in any part of the house and do not get sick easily.

Though, compared to raising ducks and chickens, quails are not a popular choice.



Pigs are also a source of protein and is commonly used as an ingredient for many dishes. Compared to poultry animals, pigs grow big and weigh a lot, which means they need more space to roam around.

Pigs love mud and use it to cool themselves in hot weather. That is why in building their shelter or pigpen, there must be a space where they can roll in a bed of mud.

Similar to ducks, pigs consume a lot of water, so there must be a large container full of water within their area.



Goats provide meat, milk, and wool. It is friendly and easy to handle.

They are herbivores, which means they eat grass or any edible plants.

The only difficult thing in raising them is their shelter. Goats know how to jump and can escape easily if their shelter is not built well.

Tools/Equipment in Animal Care

Spade/shovel



used for collecting animal droppings and manure.

Tooth nipper



used for trimming sharp tooth of baby animals to prevent them from hurting their mothers when nursed.

Syringe



used for injecting medicine to sick animals.

Animal thermometer



used for checking temperature of animals.

Clippers



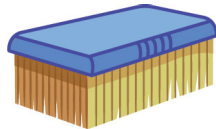
used for removing or trimming hair of animals.

Water/Garden Hose



for cleaning animals and animal shelters.

Stiff grooming brush



for removing excess water from animal's hair after washing.

Livestock shedding comb



to removing shedding hair of animals.

Animal Shampoo/Soap



for removing dirt or bacteria on the animal's skin. Use shampoo or soap suited for your livestock or poultry.

Towel/sponge



for drying animals after washing them.

Respirator Mask/face mask	
	worn when entering and leaving an animal shelter. This is done to ensure safety when entering and leaving an animal shelter.
Plastic boots	
	also worn to ensure safety when visiting animal shelter and avoid the spread of disease from animals.

Animal Care Safety Precautions

In raising animal at home, safety precautions must be followed to avoid accidents. Unlike plants, livestock and poultry moves from one place to another. This could be a problem, since they could escape their area and cause chaos inside or outside the house. So, to maintain order within your backyard or where the animals are kept, apply the following safety precautions.

- **Make sure to put locks or barriers** on their area or shelter to prevent them from escaping.
- **Be very careful being with male or pregnant animals.** When pregnant animals or male parents are with their new-born offspring, they can be aggressive because they think someone will steal anything that belongs to them.
- **Be calm when visiting, grooming or feeding your animals.** Learn to be gentle in handling your animal.
- **Avoid creating loud noises** when feeding, grooming or visiting your animal, because these animals easily get startled.
- **Keep their place clean and dry.** It's important to maintain cleanliness in animal shelters, because diseases can grow and spread if their place is dirty. Also, accidents happen when there are many objects lying around the ground or when the floor is wet.
- **Wear protective gear when visiting your animal.** Wear equipment like gloves or garments that will cover almost all parts of your body to protect yourself from diseases, if they happen. Having sanitizing equipment or tools outside the shelter also helps to protect you from these diseases or viruses.

Proper Care of Animals

Raising livestock or poultry is a big responsibility. You need be prepared in raising them and learn how to maintain living with them in harmony. If they are not given the right care, they will die easily; even worse, they might contract diseases that could spread to your family.

The following are the things you need to prepare and learn in order to become a good animal raiser.

Provide Proper Shelter

Just like people, animals need shelter too. This is essential for them to survive changes in weather and should protect them from disasters. So, in providing shelter for your animal, make sure that it is sturdy. It should have a roof and walls to cover them from predators and harsh weather.

It should also keep them warm and dry in cold weather, while cool or airy in warm weather.

Aside from those, it should also be suitable for their size or it should have enough space for them to move around. Small spaces cause animals anxiety or depression.

Feed them Nutritious Food

Food is another factor that animals need to survive. Similar to humans, they need to have a balanced diet to grow healthy and strong. Whatever you provide them affects their growth and development. If you give them clean and nutritious food, they will surely grow well. If not, their development and health will be affected.

Depending on the type of animal, know that there are certain ingredients their food must and must not have. Every kind of livestock or poultry has foods that are poisonous to them.

Offer them Clean Water

Water is also essential to animals, especially to those that provide milk. Water helps regulate their body temperature and digestion. So, make sure that water they drink is not contaminated.

Animals Need Grooming Too

Grooming is part of keeping animals healthy and ensures their well-being . They also need to be cleaned with shampoo or soap to kill off parasites and microbes that might have grown on them. So, equip your animal inventory tools with grooming tools and supplies.

Maintain Cleanliness in their Place

Mixing livestock and poultry in your backyard can cause diseases to grow and spread easily. These diseases happen because of a dirty environment or waste that is not removed immediately. So, clean and disinfect their area regularly.

In Business

Animal raising can provide profits for the family. But for that to happen, it needs time, effort and planning to secure the family of having a profitable business through animals.

Examples of animal businesses are:

- animal livestock/poultry seller
- manufacturer of products using raised animals
- restaurant owner



EXERCISES

Exercise 1

True or False?

- _____ 1. Animal raising is hard work.
- _____ 2. You can earn money from raising animal.
- _____ 3. Animals provide entertainment to people.
- _____ 4. Livestock and poultry are sources of food.
- _____ 5. Raising animals help families to become self-sufficient.
- _____ 6. There are not many benefits from animal raising.
- _____ 7. More wastes are created when you produce your own food.
- _____ 8. Clothes are one of the basic needs of animals.
- _____ 9. Shelter given to animals should be suitable for their size.
- _____ 10. Any kind of food are allowed for animals.

Exercise 2

Identify the missing word in each statement.

_____, also known as “pugo”, is a type of poultry that produce smaller eggs than chickens and duck.

_____ is a livestock that produce meat, milk, and wool.

Pigs love to cool themselves in the _____.

Ducks like to play with _____.

_____ used for checking temperature of animals.

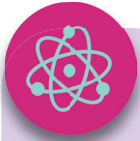
Put _____ or barriers on your animals’ shelters to prevent them from escaping.

Avoid making _____ when feeding, grooming or visiting your animal.

_____ immediately if a disease or virus has spread among your animal.

It’s a must to give proper _____ to your animal to protect them from harsh weather and predators.

Provide them _____ food for them to grow healthy and strong.



SUMMARY

Raising livestock at home is possible if you can give them their basic needs and learn how to take good care of them. While it is a difficult job, you can learn and gain many benefits from it, such as providing the family food to eat, save costs on food, support and help the environment.



LESSON OUTPUT

Choose one livestock or poultry discussed in the lesson and create a slideshow presentation of the correct shelter and food of the livestock or poultry you have selected. Describe in detail what you have gathered and include pictures/illustrations.

Lesson Output Rubrics

Objectives:

- Create a slideshow presentation
- Choose one livestock included in the lesson
- Show in detail and provide images/illustrations of the correct shelter and food of the selected livestock or poultry

CRITERIA	5	4	3	2	1	POINTS
1. Content/ Functionality	All 3 objectives for the activity were met.	All 3 objectives for the activity were met but were not exactly as instructed.	Only two of the objectives for the activity were exactly met.	Only one of the objectives for the activity was exactly met.	None of the objectives for the activity was met.	
2. Creativity	The student showed outstanding creativity by adding elements that made the output visually appealing.	The student showed adequate creativity by adding decorative elements in the activity output.	The student showed a fair level of creativity with the additional decorative elements.	The student showed some creativity with the additional decorative elements.	The student did not display any effort and the answers were inadequate.	
3. Promptness	The output was completed two or more days ahead of the given deadline.	The output was completed one day ahead of the given deadline.	The output was completed by the given deadline.	The output was completed one to two days after the given deadline..	The output was completed three days after the given deadline.	
TOTAL						

Home Economics

Personal Care and Wellness

1



Disaster Preparedness and First Aid

2



Food Groups, Food Plate and Food Safety

3



Cleaning Home and Backyard

4



Lesson 1

Personal Care and Wellness

TRIVIA

In the Philippines, “Hilot” is one of the oldest practices in healing ailments or illnesses. One traditional example of it is Dagdagay, which was introduced by the tribal people living in the highlands of the Cordillera Region in the Philippines. What’s unique with it is its use of two bamboo or rattan sticks as a substitute to fingers. These are shaped into a specific form that stimulates pressure points of the soles or feet. A pre-treatment ritual is done before the actual massage, which is comprised of herbal or natural ingredients like “tanglad” and banana leaf. It is said that this form of massage can help improve the body’s immune system. Traditional hilot is slowly gaining acceptance in the world of personal care and wellness.



LESSON OUTCOMES

1. Define health, personal care, and wellness.
2. Learn methods for caring and mending clothes as part of caring for oneself.
3. Identify proper wellness behavior within the family.
4. Demonstrate actions that promote wellness in the family.



ENGAGE

Let’s begin the discussion with this short informative video about personal care and wellness:

Healthy Habits for Kids (How to Stay Fit and Healthy by Annie and Ben)

<https://www.youtube.com/watch?v=FWw8xgDTFTQ>



EXPLORE

Let's test your knowledge on health, personal care and wellness by answering the following items. Choose the letter of your answer for each statement.

- _____ 1. It is a condition of complete physical, mental, emotional, social and spiritual well-being of a person.
- a. health
 - b. sickness free
 - c. wellness
 - d. active mind
- _____ 2. It refers to the state of living a healthy lifestyle.
- a. body care
 - b. wellness
 - c. normally fit
 - d. health
- _____ 3. It includes basic self-care tasks like bathing, washing hands, brushing of teeth, dressing, nail care and maintaining personal appearance.
- a. personal resources
 - b. personal care
 - c. wellness
 - d. health
- _____ 4. Eating fruits & vegetables every day and playing outside with friends are examples of _____.
- a. sad behavior
 - b. healthy living
 - c. proper wellness behavior
 - d. playing tasks
- _____ 5. Which of the following practices is about a healthy lifestyle?
- a. Anna drinks six (6) to eight (8) glasses of water a day.
 - b. Rosemarie drinks soda before and after eating.
 - c. Milk tea is served during Fatima's birthday party.
 - d. Jasmine drinks sweetened pineapple juice in can every day.

- _____ 6. Daily exercise can help increase your _____ and improve your mood.
- a. heartbeat
 - b. blood pressure
 - c. energy
 - d. stomach pain
- _____ 7. Which of the following is an example of a healthy lunch?
- a. ice cream and soda
 - b. banana, grilled chicken, and rice
 - c. pizza and cakes
 - d. cupcakes and potato chips
- _____ 8. Regular exercise is mainly an example of _____.
- a. emotional wellness
 - b. intellectual wellness
 - c. physical wellness
 - d. spiritual wellness
- _____ 9. Which of the following is an example of personal care?
- a. Changing clothes before going to sleep.
 - b. Not taking a bath after playing outside.
 - c. Brushing teeth once a day.
 - d. Touching food without handwashing.
- _____ 10. What do we need to do to promote wellness in the family?
- i. Promote eating the right portions of healthy foods.
 - ii. Help preserve the health of others.
 - iii. Cause increase of diseases.
 - iv. Encourage practicing healthy habits to attain good health.
- a. i, ii
 - b. i, iv
 - c. ii, iii
 - d. iv, iii



RESEARCH

After watching the video about “Healthy Habits for Kids, how will you promote healthy habits to your family and friends living in the Philippines?



EXPLAIN

Definition of Terms

Health – the state of complete physical, mental, and social well-being and not merely the absence of disease.

Immunity – the ability to resist harmful organisms that may cause disease or infection in the human body.

Personal care – refers to practices or hygiene that involves taking care of yourself.

Wellness – the state of living a healthy lifestyle or the act of practicing healthy habits to attain better mental, physical, and spiritual health.

Wellness behavior – habits or practices that develop a healthy lifestyle.

To talk about our health is to share information about how we feel physically, mentally, emotionally, and spiritually, which also includes the state of our social well-being. Health is our source of support to function in society. That is why we need to practice healthy habits like eating nutritious food, doing daily exercise, keeping our personal care and hygiene in check, as well as spending time with family and friends.

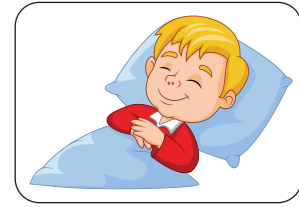
What is Health?

According to the World Health Organization (WHO), **Health** is the “state of complete physical, mental, and social well-being and not merely the absence of disease.” This means that being healthy doesn’t only mean not having any illness; it is also based on how you look, how you think, and how you interact with people around you.

Attaining and keeping good health is a continuous process. You need to exercise good health habits in order to be healthy and stay healthy. What follows are good health practices that you should do and keep in mind as early as now.

Get Enough Sleep

Getting the right amount of sleep is essential to improving your health and in staying healthy. You need to replenish your strength or rest your mind and body in order to function fully again the next day.



Having enough sleep helps prevent heart diseases, weight gain and in strengthening the immune system. If an individual consistently sleeps beyond the recommended hours, he or she may put their health at risk or become prone to diseases.

The recommended sleeping hours vary according to age. For children ages 6 to 12, the recommended length of sleep is 9 – 12 hours. As they get older, the number of hours of sleep they need grows lesser. Like for ages 13 to 18, the recommended hours of sleep are only 8 to 10 hours.

Regular Physical Exercise

Exercise is an activity that requires muscles and body parts to move and work. Doing so will keep your body fit and strong. Having a fit and strong body also helps your body from catching diseases and for it to function well whether it be in school, at home or in the community.



According to the Centers for Disease Control and Prevention's website, children and adolescents aged 6-17 years old should practice 1 hour of exercise every day. This includes daily aerobic exercises that strengthens the bones (like running or jumping for at least 3 days each week) and muscle-building activities (like climbing or doing push-ups), also for at least 3 days each week.

Eat Balanced and Healthy Meals

The eating of balanced and healthy meals protects you against malnutrition which weakens your immunity from diseases and infections. Immunity refers to your body's capability to fight harmful microorganisms that cause illnesses or infections. A meal that contains essential nutrients such as vitamins, minerals, carbohydrates, protein and fat is considered a balanced and healthy diet.



Drink Lots of Water

Water helps regulate the body's temperature, metabolism, and to maintain other bodily functions. It helps flush waste materials out of the body through urination, perspiration, and bowel movement. It is recommended that the average person should drink 6-8 glasses of water each day.



Read Books

Health is not only measured by your physical state, but also by the condition of your mind. Reading is one of the best activities to develop a healthy mind. One reason for developing a healthy mind is to help you cope with stress better and think with clarity.



Spend Time with Family or Friends

Spending time with family or friends also helps improve the quality of your health. Being with your loved ones helps boost your mood, relieves you of stress, helps you practice better health habits and even encourages you to do exercise daily.



Personal Care

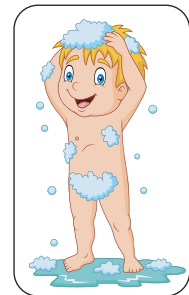
Personal care refers to practices for hygiene such as bathing, washing of hands, cleaning of teeth and keeping one's physical appearance neat and tidy. It's important to practice personal hygiene in order to protect yourself from infections or illnesses that you can get through exposure to certain environments or by touching something or someone that carries disease-causing germs.



The following are basic personal care habits for preventing disease and enhancing overall health:

Take a Bath Regularly

Taking a bath is an important personal hygiene to do every day. It's important to clean yourself daily of dirt, germs and dead skin cells, because these are sources of diseases like skin infections as well as of body odor, skin irritation, sores and many more.



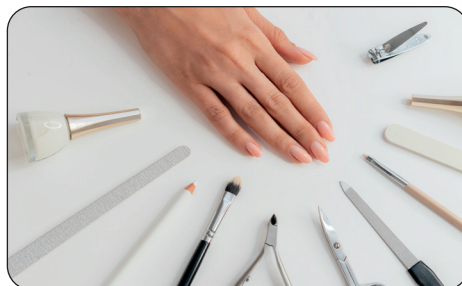
These are examples of bathing methods:

- Full bath is a generous soaping and rubbing of the whole body with a small towel.
 - Sponge bath or bed bath is used to clean people who are unable to bathe themselves due to health reasons. This involves washing and rinsing sections of the body one at a time. It uses a towel dipped in warm water to clean each part of the body.
- 

Nail Care

Keeping fingernails and toenails well-trimmed can prevent athlete's foot and other nail problems such as hangnails and infected nail beds or Paronychia.

Fingernails should be trimmed in a way that follows the shape of your fingertips. Forming a habit of cleaning your toenails and feet is an essential part of taking care of oneself. Wearing comfortable and well-fitted shoes is also important, because these will help you keep a good posture while standing and walking.



Proper Care of your Mouth, Gums, and Teeth

Digestion starts in the mouth, so it's important to have a complete set of healthy teeth in order to chew food well.



To keep teeth and gums healthy, you need to brush your teeth after every meal or at least three times a day. Use a toothbrush that is right for your age. Results are better if you practice brushing in an upward and downward motion and that includes your front and grinding teeth as well as the in-between areas of your teeth. You must not forget to also brush your tongue to remove food residue.

Many dentists recommend flossing to help remove plaque, food build-up between the teeth, and to maintain strong and healthy gums. Visit the dentist at least twice a year for check-ups and cleanings.

Wash your Hands Regularly

Regular handwashing is one of the best habits to eliminate the spread and growth of germs that spread disease. Wash your hands before preparing or eating food, after coughing, sneezing, and handling garbage. Proper washing of hands is done by using soap and water. If these are not available while on the go, you can use alcohol or an alcohol-based sanitizing gel.



Practice Good Posture

Good posture means having proper alignment and position of the spine in relation to other body parts such as the head. In actions such as standing, sitting, walking, and sleeping, there are proper ways to carry the body's spine that must be done or practiced in order to develop and maintain a good posture. Having a good posture helps improve one's physical appearance. It also enables the body organs to function well and to breathe in oxygen better, which helps improve blood circulation.

The following are standard practices for developing good posture:

When Standing

- Head up with chin pulled back
- Chest out
- Lower abdomen in
- Back upright, shoulders relaxed
- Arms at the sides
- Body relaxed and at ease
- Legs straight, heels together, toes pointing slightly outward

While Walking

- Body must be straight and in the same position as when standing
- Arms should be relaxed while swinging them slightly in perfect accompaniment with steps
- Walk natural and with ease

When Sitting

- Keep body straight
- Sit firmly but relaxed
- Rest feet on the floor
- Keep toes pointed forward

Hair Care Routine

Hair is the crowning glory of every individual. Taking good care of it is a must, because it is among the parts of the body that collects dirt and harmful microorganisms from daily activities, especially when they are done outdoors.

Having healthy and beautiful natural hair is a result of good hair care routines. It includes getting regular trims, using warm water to open up pores, and eating food rich in iron, protein, vitamins (such as A and C), and omega-3 fatty acids.

The following are some hair care habits that will help in the maintenance of glossy healthy hair:

- Shampoo your hair twice a week.
- Brush your hair several times before going to bed at night. This will stimulate the scalp and spread the natural oil of your hair. It's best if you will use a good hairbrush to avoid hair damage.
- Get a haircut regularly.
- Use your own comb, hairbrush, and hair accessories in order to avoid spreading or getting dandruff and lice.
- Keep your personal hair accessories, brush or comb clean at all times. Clean them regularly with soap and water.

Clothing Care Methods

Taking good care of your clothes is also a way of caring for yourself. Clothes are worn to protect the body from direct sunlight or cold weather. Aside from these, clothes are also for making a person look presentable. Giving effort to wear clean and tidy clothes is a way of showing respect to people you meet.

Care Method I: Proper Washing of Clothes

1. Sort your clothes before soaking your laundry in the water: First, separate them based on their color (light and dark), type of fabric (heavy and lightweight), and the amount of dirt or stain (dirtiest and those with few stains). Wash them separately according to these groups.
2. Cleaning agents: Choose the right kind of laundry detergent for the kind of stains on your laundry. Detergents can either be in powder or liquid form. Powder detergents are less expensive than liquid ones, and are effective for removing mud stains and ground-in-dirt (e.g., soil stains). Liquid detergents, on the other hand, are very effective for cleaning clothes with greasy and oily stains.
3. Hand Wash vs. Machine Wash. Hand washing is best applied for lightweight kinds of clothes like t-shirts, shorts, undergarments, socks, towels, etc. Machine washing, on the other hand, is best for clothes made of heavy fabric like denim jeans, suits or blazers, curtains, large towels and others. Check the label on your clothes to know the correct kind of washing to use on it.

4. Removing stains or dirt. Keep in mind these tips when removing stains or dirt.
 - Be quick. Once you've seen stains in your clothes, remove them immediately.
 - Don't rub. Avoid rubbing or wiping away stains for it will spread more on your clothes. Instead, dab the stain with a clean cloth or paper towel.
 - Rinse with cold water.
 - Repeat. Sometimes, the stain or dirt is still visible after washing your clothes once. If that happens, repeat the process of removing the stain until it's gone.
5. Drying. Depending on the type of material used to make them, using machines to dry clothes can make them shrink or be ruined. Naturally drying them with air not only saves on electricity costs, but is also good for the environment.

Care Method II: Iron your Clothes

Ironing means using a heated tool (an iron) to remove creases or wrinkles on your clothes, which may happen after washing and drying. This is done to keep your clothes tidy when worn. Wearing neat-looking clothes makes yourself look presentable when meeting people.

Care Method III: Keep them in Proper Storage

When storing your clothes, pick containers that keep away water and dirt. Add insect repellent when storing clothes for long periods of time to keep cloth-eating insects like cockroaches, moths and silverfish away.

Care Method IV: Hand-sew Broken Garments

Hand-sewing means using needles and thread to make simple garments or to repair rips and tears on your clothes. Learning to hand-sew small holes or cuts on clothes helps save money and lets you use them longer.

The basic tools for hand-sewing broken garments are needles, thread and scissors.

There are 5 basic sewing stitches for repairing clothes: running stitch, back stitch, whip stitch, slip stitch and including the one for sewing buttons.

Running Stitch is used for:

- Repairing a hem of a pant leg or arm of shirt.
- Sewing patches on clothes.
- Re-attaching a strap or other piece of fabric of a garment.

To learn how to do a running stitch, watch this tutorial:

<https://bit.ly/3ih5JAO>

Backstitch

- A backstitch is quite similar to a running stitch. Compared to a running stitch, a backstitch is stronger but takes longer to do. It is commonly used for:
- re-attaching zippers
- mending tears or fabrics that are about to detach from the garment.

To learn how to do a back stitch, watch this tutorial:

<https://bit.ly/37e2a8e>

Whip stitch is used for:

- Fixing busted seams on pants, shirts, and jackets
- Re-attaching pockets.
- Repairing hem of a garment that have split open.

To learn how to do a whip stitch, watch this tutorial:

<https://bit.ly/3s2gsmd>

Slip Stitch

A slip stitch is also used for fixing holes or hem that have split open. It's difference with a whip stitch is that the stitches made are hidden. However, compared to the other stitches, this is the most difficult one to do.

To learn how to do a slip stitch, watch this tutorial:

<https://bit.ly/3C8Sr18>

Sewing a Button

Last on the five basic hand stitches for repairing clothes is sewing a button. A button is a small disk attached to clothes to close it.

To learn how to sew a button, watch this tutorial:

<https://bit.ly/2V9dUXpl>

Wellness and Wellness Behavior



Wellness is the state of living a healthy lifestyle or the act of practicing habits that lead to better mental, physical, and spiritual health. Personal wellness, on the other hand, is the process of making your own decisions towards having a healthy, meaningful and fulfilling life.

Wellness behaviors are habits or practices that develop a healthy lifestyle. A healthy lifestyle is not easy to achieve because it is a lifelong process and requires a commitment to maintain a balance between good spiritual, emotional, social, physical, and intellectual health.

Five Dimensions of Wellness

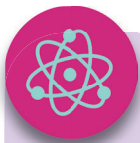
These dimensions of wellness are helpful in attaining overall wellness and for becoming aware of behaviors that support a healthy lifestyle.

1. **Physical wellness** promotes taking good care of your body through eating well-balanced meals, exercising regularly and getting physical check-ups.

2. **Intellectual wellness** involves stimulating the mind through creative and mental activities like reading, exploring new information, painting, drawing, making handicrafts and more.
3. **Emotional wellness** is concerned with understanding and respecting your feelings, values, and attitudes. Practicing self-acceptance, self-confidence, self-control, optimism, and trust are important in helping improve your emotional health.
4. **Interpersonal and Social wellness** promote encouraging one's self to interact with others and nurture relationships with family, friends and people within a community.
5. **Spiritual wellness** relates to having a set of guiding beliefs, principles, or values that give meaning, purpose, and a sense of peace to your life with or without a religion. It is also the capacity to love, enjoy and have a sense of fulfilment in life, and develop compassion for others.

In Business

People can get ill because of a lack of personal care and wellness. Offering people fitness guidance with workout or exercise routines may be good business idea that can help promote health and wellness at the same time. Have you heard of Zumba? Setting up a gym is also a good idea as gyms are popular establishments that people go to for weight maintenance and for muscle fitness. Most gyms have fitness equipment, and sometimes, also coaches that guide customers on how to use gym equipment, assist and monitor their workouts and also give advice on the correct food intake for overall wellness.



SUMMARY

Achieving good health involves following and maintaining healthy personal care and wellness habits such as regularly eating a balanced and healthy diet, getting enough sleep, drinking enough water, exercising, reading, and spending quality time with friends or family. Daily personal care which includes grooming and personal hygiene routines also matters for achieving good health. These practices are part of what they call “wellness” or the act of practicing healthy habits to attain better physical, mental and spiritual health.



EXERCISES

Exercise 1

How much have you learned? Answer the following items by choosing the letter of the correct answer.

1. Children can be healthy and strong if they _____.
 - I. eat fruits and vegetables
 - II. sleep late at night
 - III. exercise, sleep well and eat healthy food

a. I only	c. II and III
b. II only	d. I and III
2. How do you take good care of your skin?

a. Staying under the sun for a long period of time	c. Consulting a beautician
b. Taking a bath every day	d. Using my sibling's towel to dry myself
3. What should you do in order to become healthy?
 - I. Play all day
 - II. Stay up late at night
 - III. Eat plenty of sweet foods
 - IV. Take a rest, sleep well, and eat a balanced diet

a. I and II	c. IV only
b. III and IV	d. I, II, IV
4. Why do you need 9 to 12 hours of sleep?
 - I. It makes your body healthy
 - II. It helps you to stay alert
 - III. It helps you to move fast
 - IV. It rests your muscles

a. I and II	c. I and IV
b. II and III	d. II only
5. You need to take a bath every day for you to _____.

a. be praised	c. make your parents happy
b. feel fresh and clean	d. be laughed at

Exercise 2

Enumeration.

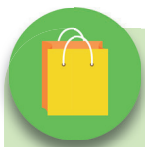
Give the (5) Dimensions of wellness

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

Exercise 3

Identify what is being described in each sentence.

- _____ 1. Caring for clothes is also a _____.
- _____ 2. In laundry, before you soak clothes in water you must first _____, your clothes based on color, weight, type of fabric and amount of stain.
- _____ 3. The right cleaning agent for clothes is called _____.
- _____ 4. _____ is best applied for cleaning underwear, handkerchief, t-shirts and shorts.
- _____ 5. It's better to _____ dry clothes than using a machine dryer when you don't want to shrink your clothes.
- _____ 6. _____ is a heated tool used for removing creases on clothes.
- _____ 7. This is a method of using your hands, needle, and thread, to repair broken clothes.
- _____ 8. This stitch is used in attaching patches on clothes.
- _____ 9. _____ is used for re-attaching zippers.
- _____ 10. A _____ is a small disk attached to clothes to close it.



LESSON OUTPUT

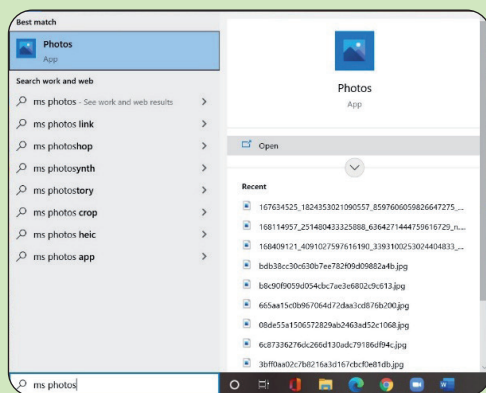
Create a 30-second slideshow using your own pictures or illustrations that promote wellness in the family. Be artistic in presenting your slides or video.

- **What is a slideshow?** A **slideshow** is a collection of still images processed and presented in a sequence using a software. Among popular software that create slideshows are MS PowerPoint and Windows Photos which are generally accessed using a desktop computer.
- **MS Windows Photos for creating a video composition using photographs.** **Microsoft (MS) Windows Photos** is a computer application for organizing, enhancing, and editing photos and videos from the stored files on your computer. This software is free to download, but it can only be used on a desktop computer or laptop.

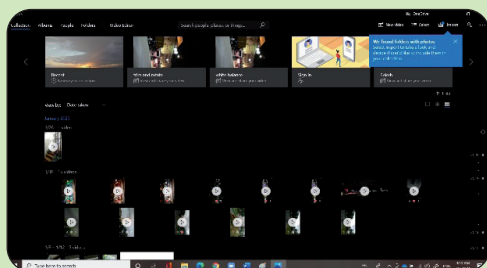
Steps

A. Steps in using **Windows Photos** to create a slideshow:

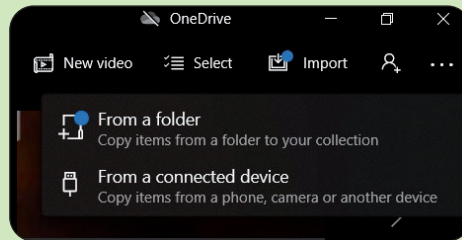
1. Sort or compile the photos or illustrations you will use for the project.
2. Type Photos in the search field. Open the application by clicking the icon.



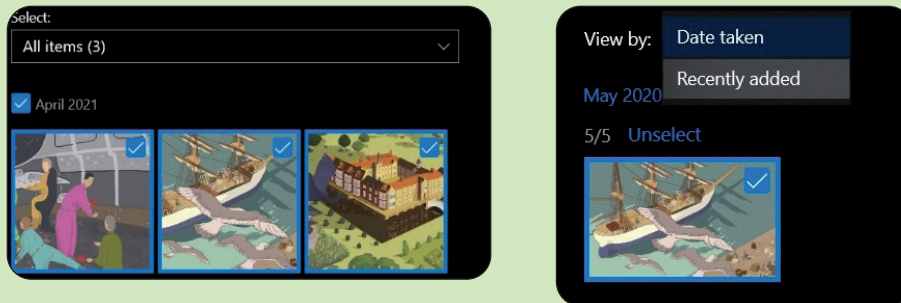
3. Click the **Import** button at the top section of the application.



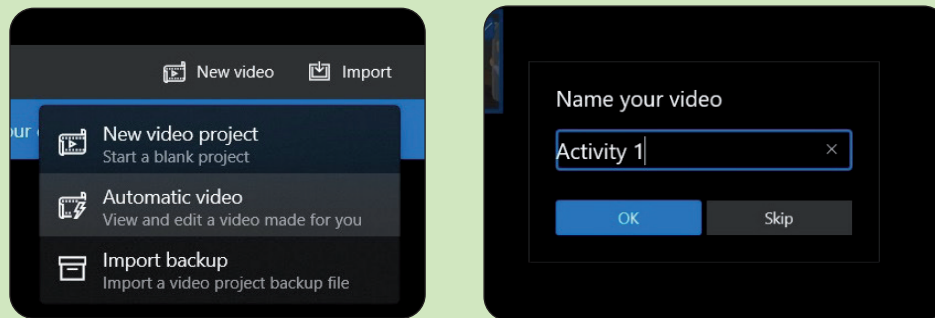
4. Choose where you will get the files you will use for the project.



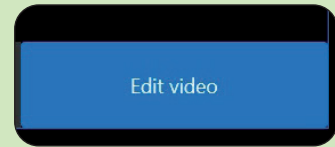
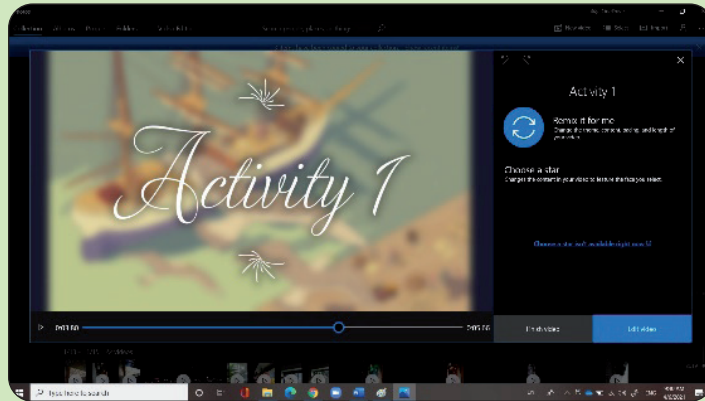
5. Choose the photos you will use. If you can't locate the files you had just imported, click the **Recently added** button.



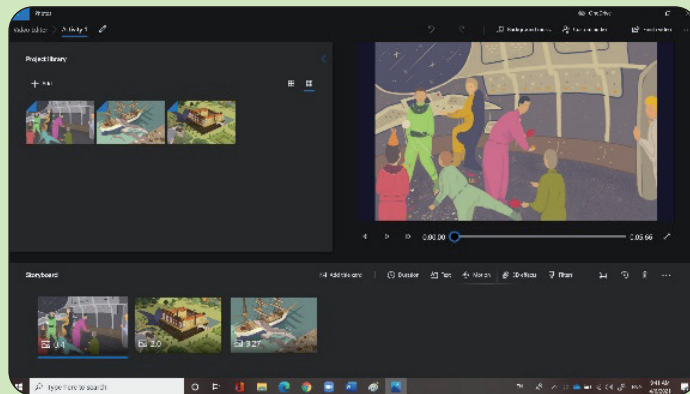
6. Once your files are set, click the **New video** button found beside the **Import** button. Choose any of the given options. Let's try clicking the **Automatic video** option. Don't forget to create a title for your video project



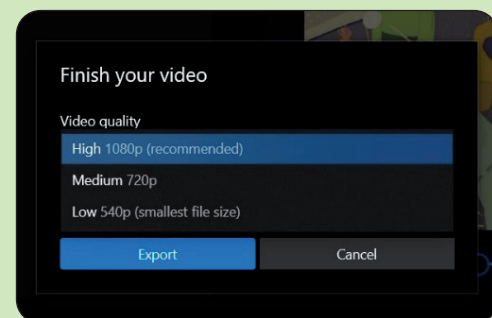
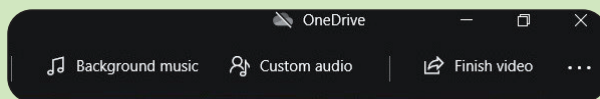
7. What will appear next is the video project that Photos has developed for you. You can still change the output by remixing the default themes, text, etc. or you can manually edit it by clicking the **Edit video** button.



8. Clicking the Edit video button will bring you to the video editing workspace. Here you can manually edit the duration of the photos, text, and other special effects.

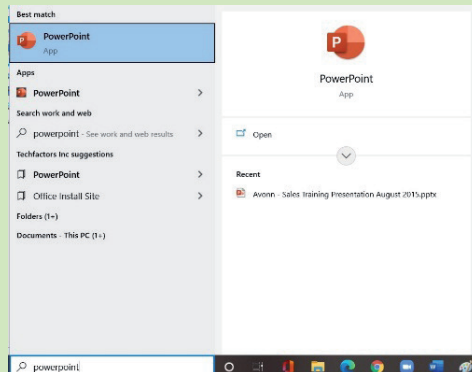


9. Once you're done editing, just click the **Finish video** button found in the upper section of the application. Before clicking Export, you will need to choose the quality of your video. The higher the video quality, the larger the file size.

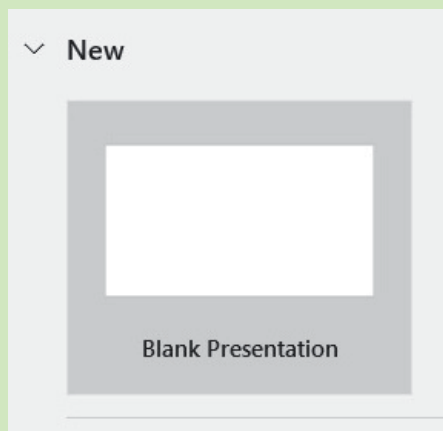


B. Steps in creating a slideshow on **PowerPoint**:

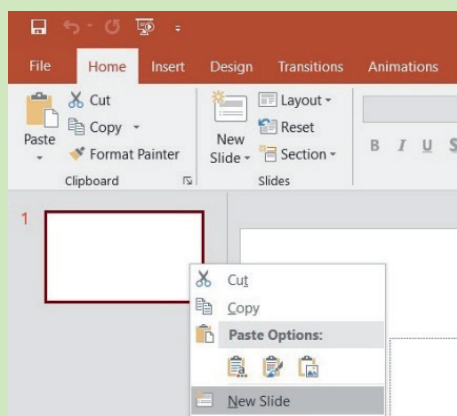
1. Open the PowerPoint software.



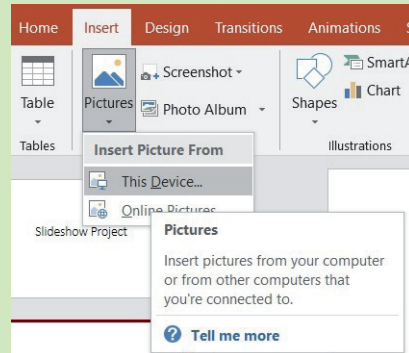
2. Click **Blank Presentation**.



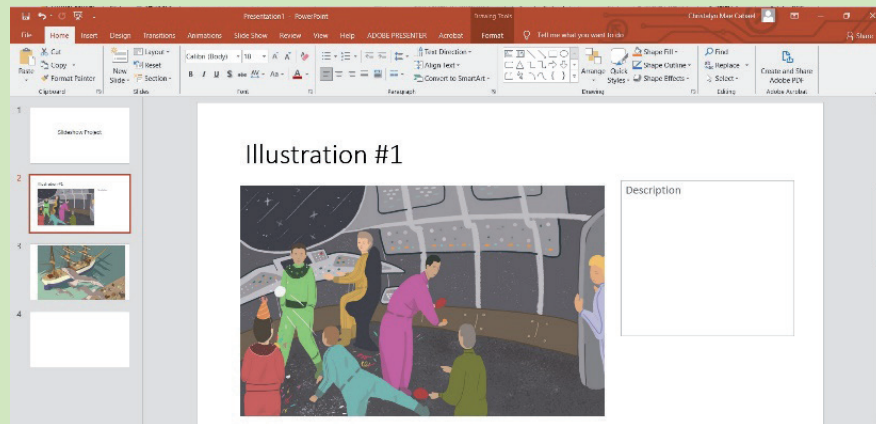
3. Leave the first slide for the project's title. Add slides by right-clicking the mouse or use the shortcut (**Ctrl + M**). You can also click the **New Slide** button found on the **Home** menu section.



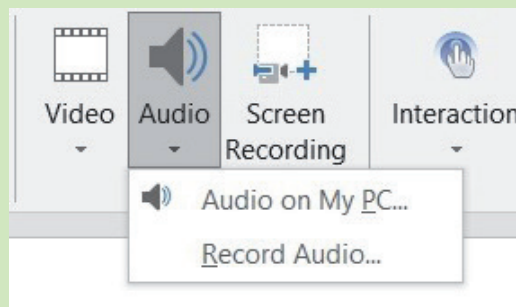
4. Add or import the files by going to **Insert** menu and clicking the **Pictures** button. Add more slides to accommodate the image files you've just inserted.



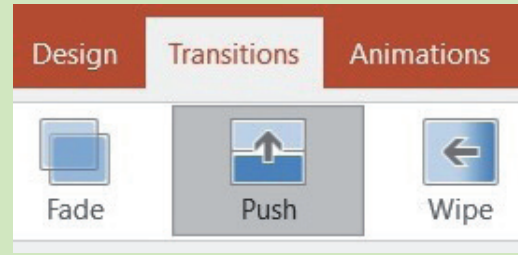
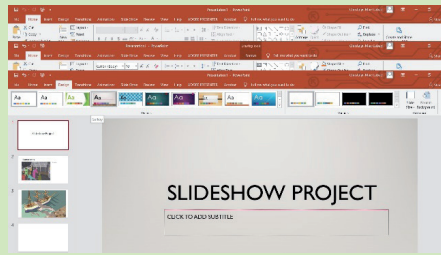
5. Add subtitles, captions or descriptions to give a detailed explanation about the images you've included in the presentation or slideshow.



6. You can also add narration to make your output more creative and impactful. You can find the **Audio** button in the **Insert** menu section.



7. Add more modifications to each slide by adding theme slides, transitions, and animations.



8. Once you're done, click the **File** menu, and then click the **Export** button. Turn your project into a video by clicking the **Create a video** option. If you have narrations, don't forget to adjust the settings.

Lesson Output Rubrics

CRITERIA	5	4	3	2	1	POINTS
1. Content/ Functionality	The slideshow is 30 seconds long and features unique pictures or illustrations about personal care and wellness.	The slideshow is slightly over 30 seconds long and features pictures about personal care and wellness.	The slideshow is slightly under 30 seconds long and features pictures about personal care and wellness.	The slideshow is slightly under 30 seconds long and features pictures about wellness but not so much about personal care.	The slideshow is well below 30 seconds long and features pictures that are ambiguous on wellness or personal care.	
2. Creativity	The approach of the student is unique and also personally creative in the design of the presentation with the use of own illustrative or design elements.	The approach of the student is unique and fairly creative in the design of the presentation with the use of preset design elements.	The approach of the student uses templates and uses preset design elements with the text being their own.	The approach of the student uses templates and preset design elements and the text seems common and overused.	The approach of the student did not use any templates nor design elements and the text seems copied.	
3. Promptness	The project was completed 2 or more days ahead of the given deadline.	The project was completed a day ahead of the given deadline.	The project was completed by the given deadline.	The project was completed one day after the given deadline.	The project was completed 2 or more days after the given deadline.	

TOTAL

Lesson 2

Disaster Preparedness and First Aid

TRIVIA

Did you know that the Philippines is among the countries of the world that is prone to natural disasters caused by typhoons, volcanic eruptions, and earthquakes? The archipelago lies in both the typhoon belt and the Pacific Ring of Fire regions of the Earth. It is estimated that 75% of the Earth's volcanoes or more than 450 volcanoes are found within the Ring of Fire. That is why 90% of the earthquakes that happen on Earth occur within that region.



LESSON OUTCOMES

1. Define disaster preparedness.
2. Identify different types of disasters.
3. Demonstrate basic first aid methods.



ENGAGE

Watch the following videos about disaster preparedness and first aid:

- YouTube Video Disaster Dodgers: Introduction to Emergency Planning by FEMA
<https://www.youtube.com/watch?v=TbztvOmQYJpE>
- YouTube Video "Preparing for Disaster in the Philippines" by EU Civil Protection & Humanitarian Aid: <https://youtu.be/ZgtJZlExVOY>



EXPLORE

What do you know about disaster preparedness, different types of disaster, and first aid?

Choose the letter of your answer.

- _____ 1. It refers to a set of actions in preparing for a disaster and in reducing its effects such as destruction of houses or buildings, and loss of lives and livelihood.
- a. Disaster preparedness
 - b. Community plan
 - c. Urban strategy
 - d. Rescuers' plan
- _____ 2. Using protective clothing and equipment is a form of:
- a. Fashion
 - b. Controlling disasters
 - c. Knowing who is the supervisor
 - d. Clothing that are necessary only in urban areas
- _____ 3. Before the typhoon season comes, you should inspect your house, particularly the _____.
- a. bathroom
 - b. roof
 - c. kitchen
 - d. bedroom
- _____ 4. When an area of your house starts to break during a typhoon, what should you do?
- a. Watch a television show.
 - b. Leave the house immediately.
 - c. Call the police.
 - d. Protect yourself with mattresses, rugs or blankets

- _____ 5. It is an emergency care or treatment given to an ill or injured person before regular medical aid is done.
- a. Quick check-up
 - b. Early treatment
 - c. First aid
 - d. Emergency aid
- _____ 6. As the _____ comes closer to land, it gradually loses its energy and soon dies out.
- a. earthquake
 - b. flood
 - c. typhoon
 - d. tsunami
- _____ 7. _____ is very hot, molten (melted by heat) rock formed within the earth.
- a. magma
 - b. lahar
 - c. lava
 - d. mudflow
- _____ 8. Which of the following is safe to do after a typhoon?
- a. swimming
 - b. listening to the radio
 - c. sight-seeing
 - d. fishing
- _____ 9. Which of the following is NOT a natural disaster?
- a. fire
 - b. typhoon
 - c. landslide
 - d. earthquake
- _____ 10. What is the most powerful wave on earth?
- a. tidal wave
 - b. tsunami
 - c. storm surge
 - d. underwater explosion



RESEARCH

1. What have you learned from the videos you've just watched?
2. In what way can you promote disaster preparedness in the Philippines?



EXPLAIN

A **disaster or calamity** is a sudden event that causes great harm or damage to one's life, possessions, or anything that is within an affected area. Examples of disaster events include the following:

1. typhoon
2. earthquake
3. tsunami
4. fire
5. volcanic eruption

Hazards, on the other hand, refer to anything that can be a source of danger. One example is gasoline, which is hazardous as it's a fire hazard, which means it is something that can start a fire, or explode if exposed to a high enough heat.

Hazards and disasters can endanger one's life or cause huge damage to anything that is on the planet. So, when hazards strike, it is important to prepare or become aware of what actions to do in order to avoid harm or lessen its impact.

Definition of terms

Disaster – is a sudden event that causes great damage or loss

Hazard – source of danger or harm

Disaster preparedness – refers to a set of actions or measures in preparing for or avoiding a disaster or lessening its impact

Emergency drills – safety procedures that you should do when a disaster emergency happens

First aid – primary or immediate assistance given to an injured person

Disaster Preparedness

Disaster preparedness refers to a set of important actions or measures in preparing for disasters or lessening their effects which may include loss of lives, belongings and livelihood. Measures include having an emergency supply kit, creating a family emergency/disaster plan, conducting emergency drills at home, staying informed on what to do before, during, and after a disaster, and cooperating with authorities responsible for disaster management in the community.

- I. **Prepare an emergency supply kit.** An emergency supply kit is composed of essential items that will help you survive a disaster for at least a few days or up to a week. According to Red Cross, the basic items that should be included in your emergency supply kit are as follows:



1. Water: one gallon per person, per day (3-day supply for evacuation, 2-week supply for home)
2. Food: non-perishable, easy-to-prepare items (3-day supply for evacuation, 2-week supply for home)
3. Flashlight
4. Battery-powered radio
5. Extra batteries
6. Family first aid kit
7. Medications (7-day supply) and medical items
8. Multi-purpose tool (such as utility knife, pliers, cutter, can opener, etc.)
9. Cleaning and personal hygiene items
10. Ask your parents or the oldest family member to compile copies of personal or important documents (medication list and pertinent medical information, proof of address, deed/lease to home, passports, birth certificates, insurance policies).
11. Cellphones and chargers

12. Family and emergency contact information
13. Extra cash
14. Emergency blanket
15. Map(s) of the area

SOURCE: Redcross.org. 2021. Survival Kit Supplies. Retrieved April 12, 2021, from <https://rdcrss.org/2VMhLJC>

II. **Develop an emergency/disaster preparedness plan with your family.** Having an emergency preparedness plan at home is also very important in order to organize the family during a disaster. Ask an older family member, such as a parent, to take charge of creating an emergency plan, which should include:

- Knowing how to respond to disasters that commonly happen in your community, which may or may not include volcanic eruptions, landslides or tsunamis.
- Knowing where to evacuate or take shelter in case a disaster forces you and your family to leave your home.
- Planning what to do in case you and other family members get separated during a disaster, such as designating a meeting place or listing everyone's contact numbers.
- Prioritizing a plan for family members with special needs like those with disabilities, old members of the family (like your grandparents), those that are too young to be left alone (such as babies or toddlers), and pets who depend on you to survive.

Use this template for your Family's Emergency/Disaster Plan and make sure each member of the family are informed of this plan: <https://rdcrss.org/3imlI7D>

- III. **Conduct emergency drills at home.** Emergency drills are safety procedures that you should do when an emergency such as a disaster happens. This is done to avoid panic, to keep everything in order, and to inform everyone once a disaster strikes. Ask a family member to take the lead of practicing emergency drills at home.
- IV. **Keep yourself and your family informed of what to do before, during, and after a disaster.** These days, the Internet is the top source of information on what to do before, during and after a disaster. Research organizations that focus on disaster preparedness measures.

- V. **Follow the instructions of the authorities.** Listen and cooperate with authorized officials or individuals who are responsible for disaster management in your community or barangay. This is important in order to avoid chaos and for you and your family's safety.

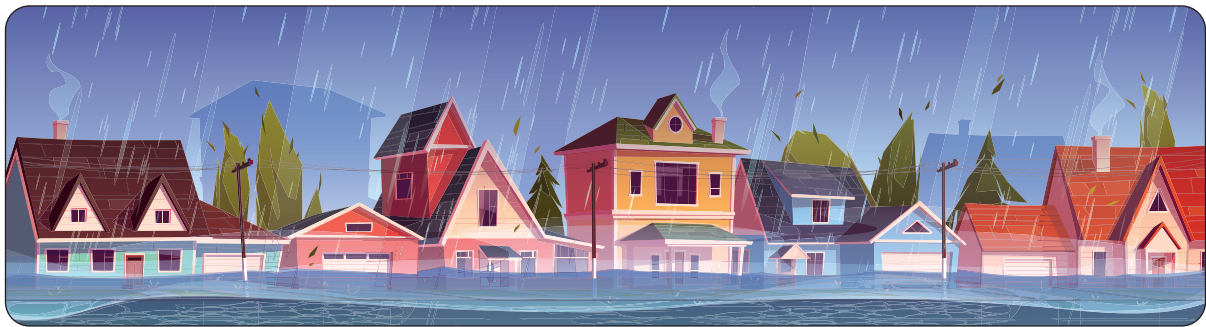
Types of Disasters

There are two types of disasters: natural and man-made. A natural disaster is a type of disaster caused by a natural event like a flash flood, typhoon, or earthquake, while a man-made disaster is the result of an action or error made by people such as a gas explosion, oil spill, or virus laboratory leak.

Examples of Natural Disasters

Flood and Typhoon

A flood is an overabundance of water that causes land to go underwater. This may be the result of heavy rains brought by typhoons and worsened by clogged drainage or canals. Oftentimes, strong typhoons are the leading cause of flash floods. A typhoon is defined as a very strong tropical storm that brings heavy rainfall and strong winds in such countries as the Philippines.



Discuss the following disaster preparedness actions with your family to keep them informed on what to do before, during, and after a typhoon or flood:

BEFORE a Typhoon or Flood

1. Be alert. (help monitor surroundings and local weather).
2. Help gather emergency supplies and first aid kits.
3. Review your Family Disaster Plan and practice emergency drills with your family.
4. Be prepared to evacuate together with your family or tell them to do it once local authorities advise it.
5. If evacuation is not necessary, find the safest location in your house. Help check if important valuables are moved to where they can't be reached by floodwaters.
6. Ask your parents or an older family member if you could help look for damaged parts of the house that will need repairs.

DURING a Typhoon or Flood

1. Don't panic. Your family should stay informed about the flood and typhoon.
2. Evacuate if told to do so. Don't forget to bring your pets along with you.
3. If an unexpected flash flood warning is announced in your area, immediately move to higher ground.
4. Never try to walk or swim in floodwater especially if there's a current and there are open sewage holes in the area; also inform family members to avoid driving through deep floodwater as this can stall and damage the engine.

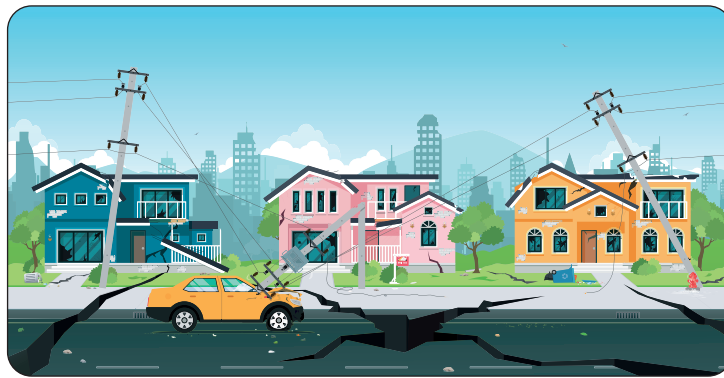
AFTER a Typhoon or Flood

1. Do not return home until authorities say it is safe to do so.
2. Travel with care. Watch out for landslides, collapsed trees, and dangling power lines.
3. The family should keep the following in mind when returning home:
 - Do not use water from natural sources until these are advised to be safe from contamination.
 - Do not eat food that has come in contact with floodwater.
 - Do not use appliances until they are dry or inspected and confirmed as safe to use by an electrician.

4. Discuss with the family the things that should have been done but were neglected (if there are any), to be better prepared when a strong typhoon or heavy flooding happens again.

Earthquake

An earthquake is described as a shaking or trembling of the earth's surface caused by volcanic activity or movement of tectonic plates. Tectonic plates are pieces of the Earth's crust that slide over and underneath each other. They move constantly as they float on the mantle's hot molten magma, and this causes earthquakes.



Like most natural disasters, there is no way to stop earthquakes. But the good thing is there are things that people can do to lessen the damage caused by them. An earthquake drill, for example, is helpful in preparing and informing people of what to do during an earthquake. Drop, Cover, and Hold are three important words to remember if an earthquake happens.

Drop means to crouch down on the ground.

Cover means getting under a table or other sturdy furniture.

Hold means staying put until the shaking stops.

If there isn't a table or desk near you, cover your face and head with your arms and crouch in a corner of the room you're in.

Important Things to Remember During an Earthquake:

1. If you are inside a building during an earthquake, take cover under a heavy table or desk. Stay away from glass windows, paintings, wall hangings, or anything that might fall.

2. If you are in the kitchen, get away from the stove, refrigerator and cabinets with heavy objects. Leave the kitchen if necessary or get under a table.
3. If you are in a crowded public place, do not rush to the door. Everyone will be doing that, and this may cause a stampede. Instead, take cover under something sturdy.
4. If you are in a tall building, do not use the elevator and instead use the stairs to get out into the open. If it will take time to get out, it might be better to just take cover under something sturdy like a table.
5. If you are outside, move to a clear area. Avoid power lines, trees, signages, buildings, vehicles and other hazards.
6. If you're parents are driving or the family is inside a vehicle, avoid overpasses, bridges, power lines, signs and other structures that can fall down. Stay inside the vehicle until the earthquake is over.

Volcanic Eruption

A volcanic eruption happens when there is an event that causes an explosive release of gases, lava, and other debris from a volcano. An eruption may be mild and gradual, but it can still be potentially dangerous because of fiery lava. A volcano is similar to a mountain or hill, except that it has openings on its surface called vents or a big hole at the top called a crater. Through the vents and crater, different materials such as gases, magma and ash are released. Magma is liquid rock found inside the earth and once it bursts out of a volcano, it is then referred to as lava.

The Philippine Institute of Volcanology and Seismology (PHIVOLCS) prohibits settling in areas within 4–6 km around the peak of active volcanoes. It is best to comply with this prohibition for your own safety.



What to do BEFORE a volcanic eruption:

1. If you live on or around an active volcano, having an emergency vehicle is important in case the volcano erupts and a quick evacuation is necessary.
2. Stay informed of updates and warnings on the volcano's activity.
3. Evacuate as soon as its announced.
4. Prepare essential items like dust masks, first aid and emergency supply kits.

What to do DURING a volcanic eruption:

1. Follow instructions of your barangay or community. Don't be fooled by unofficial announcements or updates, especially those that are uploaded on social media.
2. If no evacuation is needed, stay at home and close all windows, doors, and other parts of the house where ash can pass through.
3. It is not advisable to turn on appliances such as air conditioners during a volcanic eruption, since the ash might damage the units.
4. Store water in large containers and sinks because eruptions can damage water distribution systems and contaminate reservoirs.
5. When evacuating or leaving your home during an eruption, don't forget to bring the family's emergency supply kit. Don't forget to use masks. Wear clothes that can protect your body from clinging ash, like long-sleeved shirts and long pants. Use protective goggles over your eyes.

What to do AFTER a volcanic eruption:

1. If you are in an evacuation center or staying with a relative in a safe place, wait for instructions before returning home.
2. When allowed to go home, help check if there are things that were damaged by the eruption.
3. When removing ash or cleaning the house after the eruption, don't forget to wear a dust mask.
4. Using the air conditioner, fan, or heater when surfaces are covered by ash is not advised until your surroundings are clear of ash.
5. Check if your source of water is safe to drink. See if it is clear and has no unusual odor. To be extra safe, boil water from unusual sources for 10-15 minutes.

Examples of Man-made Disasters

Fire

Fire disasters can be classified as either man-made and natural. A wildfire, for example, naturally happens due to lightning, extremely hot weather, or a volcanic eruption. A man-made fire disaster, on the other hand, happens because of ignorance to fire hazards, intent to cause a fire, or accidents that lead to fire.

One of the practices that prepares people for fire disasters is the fire drill. This is a method of practicing how to evacuate from a building in the event of a fire. In most cases, the building's existing fire alarm system is activated and people evacuate to the nearest available exit.

Important things to do to prevent fire and in case it happens:

1. Smoke alarms are very helpful in detecting fire. Install one in each room or floor level of the house, especially in the kitchen or where flammable or combustible materials are stored. Test them every month to see if they need to be replaced or simply need fresh batteries.
2. Fire extinguishers are also important to have inside the house. Place at least one in the kitchen and ask a family member to help you learn how to use it.
3. Don't play with things that can cause fire such as matches, candles or lanterns.
4. Ask your parents or older siblings to make time to develop a fire escape plan along with the whole family. Review this plan at least twice a year. Also, conduct family fire drills.
5. Once a fire happens, GET OUT, STAY OUT and CALL FOR HELP.

Transport

Transport accident is a type of man-made disaster involving at least one vehicle that crashes or causes unfortunate situations to its passengers or anyone that happens to be in the vicinity. Transportation or road accidents may be caused by any one of the following examples: driver's errors, not wearing seatbelt or helmet, mechanical defect, over-speeding, drunk-driving and damaged roads.

Industrial

An industrial accident is a type of man-made disaster that occurs in an industrial establishment like a factory. It may be caused by a faulty process within an establishment that involves chemicals, radiation and electrical equipment/ machinery. The strict implementation of safety procedures, availability of proper facilities inside the establishment, and careful handling of equipment and hazardous substances, can prevent this type of disaster.

First Aid Techniques



Asking the help of a responsible adult or calling an emergency number such as 911 should be the first thing done in case someone needs help. However, if no help has arrived yet, and the victim needs immediate attention, first aid should be administered. First aid is primary and immediate assistance given to someone injured in a dangerous situation such as an accident, a disaster, or anything that causes harm.

A first aid kit is a special equipment bag containing the essential items for giving first aid or immediate medical assistance. A first aid kit includes: a first aid manual, adhesive tape, different-sized medical plasters, antibiotic ointment, antiseptic solution, scissors, triangular dressing, safety pins, water, cotton, and a whistle.

First aid techniques are methods for giving immediate care to an injured person before a medical professional can perform proper treatment. These are administered to promote recovery or to prevent an injury from worsening.

Tools and Materials Needed

- Clean cloth
- Pillow
- Cling wrap/clean plastic bag
- Hose/source of cold water
- Camera/mobile phone

Steps/Procedure

Perform the following basic First Aid Skills

I. What to do if someone is bleeding due to a wound?

1. Place a clean cloth on the bleeding wound. Apply pressure on it by gently pressing your hand on the bleeding area.
2. Help the patient to sit if they feel like fainting.



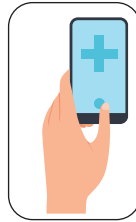
3. Ask an adult for help in bringing the patient to a clinic or hospital.

II. What to do if someone has a burn?

1. Cool the burn using cold water and do it for at least 10 minutes. This is done to reduce scarring.
2. Cover the burned body part with cling wrap or clean plastic bag to act as temporary skin.



3. Call 911 or call an adult to get the injured person to a hospital.



III. A. What to do if someone has a broken arm?

1. Use a cloth to stop the arm from moving. You can use the shirt or jacket the person is wearing if available.
2. Ask the person to place the broken arm against his or her body.

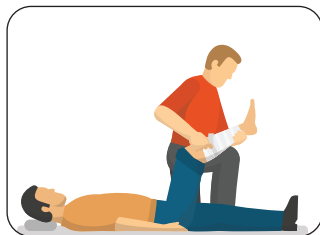


3. Gently lift the shirt or jacket above the arm so that it will help the arm not to move.
4. Then, call an adult to bring the patient to the hospital.



III. B. What to do if someone has a broken leg?

1. Support the broken leg using a pillow or anything that will help it relax.
2. Immediately call an adult for help.



IV. What to do if you see someone lying on the ground and unconscious?

1. Immediately call 911 or an adult.



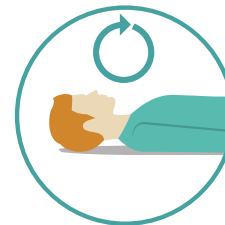
2. If no help has arrived yet, check the person if he or she is breathing. Do it by tilting the head back gently.



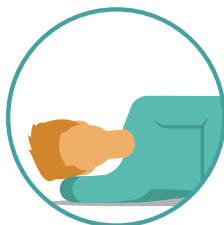
3. Place your ear near the nose and mouth and feel his or her breath. Check his or her chest to also know if he or she is still breathing.



4. Next, roll the person on his or her side. Do it by gently pulling one leg and an arm, using these to gently guide the person into the desired position.



5. Then, place the arm you just pulled under the patient's head to support it.



In Business

Promoting disaster preparedness in the country is very important since both natural and man-made disaster might happen any time. Also, a lot of Filipinos are still not aware of how to prepare and what to do when disasters occur. Among the important measures to promote are to have an emergency supply kit and first aid kit, learn first aid techniques, to conduct emergency drills, and to have a family disaster plan.



EXERCISES

Exercise 1

How much have you learned?

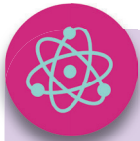
Choose the letter of the correct answer.

1. What is the correct thing to do when a strong typhoon is about to come?
 - a. Ignore warning updates
 - b. Do nothing
 - c. Prepare emergency kit and evacuate if needed
 - d. Continue preparation for your family outing
2. When there is a disaster, which is the most reliable source of information?
 - a. cinemas
 - b. radio
 - c. gossip from neighbors
 - d. magazines
3. Which of the following is NOT a natural disaster?
 - a. tsunami
 - b. earthquake
 - c. flood
 - d. fire
4. An earthquake is _____.
 - a. a massive explosion composed of lava and ash
 - b. a shaking or trembling of the earth's surface due to volcanic activity or the movement of tectonic plates.
 - c. a movement caused by the earth's gravity.
 - d. a movement caused by people working at a construction site.
5. What is disaster preparedness?
 - a. Helpful sets of measures to do before, during and after emergency situations
 - b. List of first aid kit supplies
 - c. Method on how to apply first aid
 - d. Community-based responses to any disasters

Exercise 2

Enumerate the following.

1. Two kinds of disaster.
 - a. _____
 - b. _____
2. Examples of a natural disaster.
 - a. _____
 - b. _____
 - c. _____
3. Examples of a manmade disaster.
 - a. _____
 - b. _____
 - c. _____
4. First aid steps given to someone with a bleeding wound.
 - a. _____
 - b. _____
 - c. _____
5. First aid steps for when someone is lying on the ground unconscious
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____



SUMMARY

Disaster preparedness and first aid play vital roles in lessening the impact of disasters and in helping save lives. Researching and taking disaster safety tips and first aid seriously are crucial in the event of a disaster.



LESSON OUTPUT

Make a short video demonstrating a basic first aid method discussed in this lesson. Include the motions, the materials needed, and the description (text and/or audio). Be artistic in presenting your output.

Lesson Output Rubrics

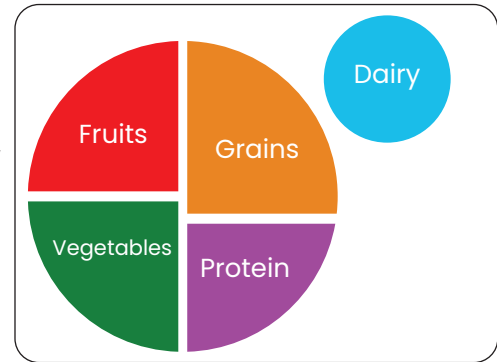
CRITERIA	5	4	3	2	1	POINTS
1. Content/ Functionality	The short video is original and includes the motions, the materials needed, and a description (text and audio) of a basic first aid method.	The short video is original and includes the motions, the materials needed, and an audio description of a basic first aid method.	The short video is not original and is made from an existing video and includes the motions, the materials needed, and an audio description of a basic first aid method.	The short video is about a basic first aid method but not original and is made from an existing video and does not include all of the following: motions, materials, and description.	The short video not about a basic first aid method and does not include all of the following: motions, materials, and description.	
2. Creativity	The video includes creative visual, audio, and text elements which cohesively gives live and meaning to the presentation.	The project's requirements are met, and the student / group took some elements from several existing sources, such as that from other people or the Internet, and built on these.	The project's requirements are met, and the student / group took some elements from one existing source, such as a person or from the Internet, and built on these.	Some of the project's requirements aren't met.	The project's requirements are not met, and/or the student / group directly copied (plagiarized) their project from another source, such as from a person or from the Internet.	
3. Promptness	The project was completed 2 or more days ahead of the given deadline.	The project was completed a day ahead of the given deadline.	The project was completed by the given deadline.	The project was completed one day after the given deadline.	The project was completed 2 or more days after the given deadline.	
TOTAL						

Lesson 3

Food Groups, the Food Plate and Food Safety

TRIVIA

The Food Plate or, as it is also called, MyPlate, was begun in 2011 as a simple way for people to remember how much of each kind of food group to eat, at each meal. The previous schematic plan, the food pyramid, was originally developed in Sweden in 1970, and a modified version of it was the one adopted in the United States in 1992. The Philippines has its own version based on MyPlate and it's called Pinggang Pinoy which is divided between Grow, Glow, and Go foods.



LESSON OUTCOMES

1. Identify the food groups.
2. Define MyPlate.
3. Discuss helpful methods in preparing nutritious food.
4. Prepare your own food plate.
5. Learn proper ways of using utensils for eating.
6. Discuss correct system for cleaning and storing utensils after eating.
7. Demonstrate how to keep your food safe from spoilage.



ENGAGE

Watch the following videos about the basic food groups, the food plate and food safety.

YouTube Video "The 3 Basic Food Group/Go, Grow and Glow" by Melanie Nacino Perez

<https://youtu.be/wp-aPq-VySc>

YouTube Video "Use the Plate Method?" by My Doctor – Kaiser Permanente

<https://youtu.be/0VGZQ0atOlc>

YouTube Video "Food Safety (How can I make my food safe and clean?)" by Your ONLINE Teacher PH

<https://youtu.be/c13i8RWnuU>



EXPLORE

What do you already know about the basic food groups, the food plate and how to keep food from spoiling?

Choose the letter of your answer.

- _____ 1. If you used up a lot of energy at work or play, you should take more of these kinds of food.
- a. rice, corn, potato
 - b. juices, soup, water
 - c. candies, cakes, ice cream
 - d. egg, water, rice
- _____ 2. Which of the following foods have the highest energy value?
- a. camote, cassava, bread
 - b. butter, corn oil, animal fat
 - c. fish, chicken, beans
 - d. beef, chocolate, water
- _____ 3. If your friend is thin and weak, he/she needs to build his/her body with these foods:
- a. chico, pineapple, ampalaya
 - b. malunggay, pechay, mustasa
 - c. eggs, beef, milk
 - d. corn, milk, oats
- _____ 4. Nutrients which are present in small amounts in food but play very important roles are:
- a. carbohydrates
 - b. protein
 - c. fat
 - d. vitamins and minerals
- _____ 5. All the cells in our body have this/these important nutrient/s.
- a. fat
 - b. vitamins and minerals
 - c. carbohydrates
 - d. protein

- _____ 6. Which of the following statements best describes the MyPlate food plate?
- a. A full plate is composed of “glow foods.”
 - b. It is a plate where the different food groups are color-coded.
 - c. A large portion of it is represented by vegetables.
 - d. It shows the consumption of sugary beverages.
- _____ 7. Rosa has to prepare her own food plate for breakfast. Which of the following food plates has the highest nutritional value?
- a. rice, fried bangus, milk, banana
 - b. hotdog, bread, milk, dalanda
 - c. pandesal, butter, scrambled egg, chocolate drink, papaya
 - d. pancake, chocolate drink, iced tea drink
- _____ 8. This is a mineral that helps blood to clot.
- a. calcium
 - b. iodine
 - c. iron
 - d. potassium
- _____ 9. Which of the following sentences is CORRECT?
- a. Washing hands before cooking food is not important.
 - b. Food handling practices in the household are essential.
 - c. Cooked unwashed vegetables are nutritious.
 - d. Raw or fresh foods are risky to eat.
- _____ 10. Which of the following ways will keep your food safe from spoilage?
- a. Store meat uncut and unwrapped until you are ready to eat it.
 - b. Keep fruits and vegetables separate.
 - c. Turn the refrigerator’s temperature knob on and off, inconsistently.
 - d. Store unwashed fresh herbs in Ziploc or similar bags.



RESEARCH

Answer the following questions after watching the videos in the “Engage” section:

1. What are your observations about the videos?
2. How will you prepare your own food plate?
3. Why do you need to keep your food safe from spoiling?



EXPLAIN

Food is a basic human need. Food gives us energy to do the many different tasks and activities we do every day. Food is what enables us to think, as well as helps us grow, keeps the body in good shape, protects us from diseases, and nourishes our body.



Good nutrition is all about eating the right amounts of different kinds of food to maintain good health. The food plate, or “Pinggang Pinoy,” can be used as a quick and easy guide that shows the right proportions of each kind of food group to consume at every meal, to meet the recommended dietary allowance of nutrients needed by everyone.

YouTube Video “Right Food During Adolescence/Pinggang Pinoy/Go, Grow, and Glow Foods/Food Pyramid” by Cheong Kim

<https://youtu.be/667d0sCSslo>

Three Basic Food Groups

Nutrition from early life is vital for children to grow and develop into healthy adults. The foods that we eat contain nutrients. These nutrients are substances found in food that nourish the body.

Go Foods, or Energy-Giving Foods

“Go foods,” or energy-giving foods, are food rich in carbohydrates, fats, and oils. Carbohydrates, in particular, give the body the heat and energy it needs. Some foods rich in carbohydrates are starchy foods like rice, cereals, corn, bread, oatmeal, macaroni noodles, potatoes, taro (gabi) and cassava (the last two are both root crops). Some foods rich in fat are cooking oil, butter and margarine, as well as meat.



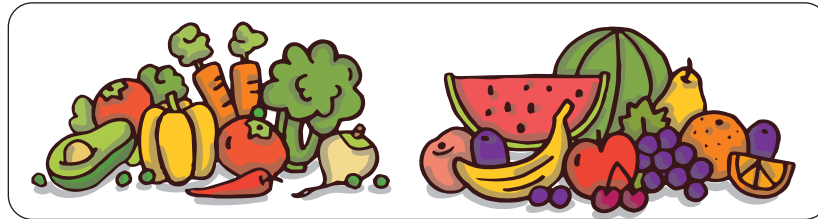
Grow Foods, or Body Building Foods

“Grow foods” are foods rich in proteins. Proteins are what build up body cells and repair body tissues, helping build strong muscles. Grow foods are milk and milk products, meat and meat products, poultry products, fish, crab, shrimp, beans such as mongo and soya, nuts such as pili and cashew, and legumes which include peanuts.



Glow Foods, or Body Regulating and Protective Foods

Glow foods are foods rich in minerals and vitamins. Vitamins and minerals make sure the body's many processes do function the way they should and also help protect the body from diseases.



Essential Vitamins and Minerals

Vitamins and minerals are nutrients used to make sure that the body's many processes work the way they should.

Calcium helps develop strong bones and teeth. It also helps blood to clot in cuts and wounds. Food rich in calcium and phosphorous are milk, cheese, shellfish, fish, oysters, shrimp, leafy green vegetables, mongo, soybeans, and onions.

Iodine is needed by the thyroid glands which regulate many of the body's functions. These glands are located at the base of the neck. Iodine-rich foods are shrimp, seaweed, crab, lobster, mussels, fish, carrots, and radishes.

Iron prevents anemia, as your red blood cells use it to help carry oxygen all over the body. Iron-rich foods are the internal organs of animals, egg yolk, shrimp, oyster, soybeans, carrots, leafy green vegetables, unpolished rice, onion, bananas and apples.

Potassium helps your nerves work the way they should and your muscles to contract. It also helps move nutrients into cells and waste products out of cells. It is found in bananas, oranges, liver, spinach, lettuce, beans, green peas, peanuts, chicken and beef.

Vitamin A produces pigments in the eye, which is why it promotes good eyesight, and also helps form healthy teeth, bones, muscle and skin. Sources of Vitamin A are leafy green vegetables, yellow fruits and vegetables like squash and papaya, egg yolk, lettuce, tomatoes, prunes, spinach, and liver.

Vitamin B1, or **thiamine**, promotes appetite and prevents beriberi, which can cause the heart to fail. Foods rich in thiamine are mongo, sprouts, peanuts, cashew, internal organs and pepper leaves.

Vitamin B2, or **riboflavin**, is needed for a lot of the body's parts and everyday functions, such as the brain's functions, as well as for cell growth. Sources of vitamin B2 are fresh milk, cheese, bitter gourd (ampalaya), camote tops, malunggay, soy beans and peppers.

Vitamin B6, or **pyridoxine**, helps turn food into energy and makes sure that our nerves work the way they should. Sources of vitamin B6 are avocado, peanuts, fish, soybeans, and bananas.

Vitamin B12, or **cobalamin**, is essential for the proper functioning of the nervous system and the formation of blood cells. Food rich in vitamin B12 are fish, milk, poultry, cheese, and eggs.

Vitamin C, or **ascorbic acid**, helps repair blood vessels and keeps the cells of the body's many tissues, such as skin, tendons, muscles and ligaments, connected together. As an example, scurvy, which is caused by a lack of vitamin C, is characterized by previously healed wounds opening up again, due to the cell tissues' being unable to keep connected, as well as bleeding, swollen gums. Food rich in vitamin C are citrus fruits such as oranges, guava, soursop (guyabano), pineapple, leafy green vegetables, tomatoes and seaweed.

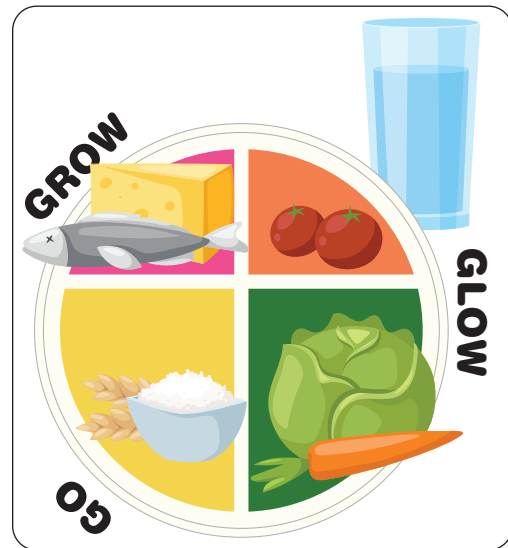
Vitamin D maintains normal levels of calcium and phosphorous within the body. A lack of this vitamin results in rickets, which is when the bones become soft because they don't get enough calcium. Walking under the sun or under an ultraviolet lamp enables your body to produce vitamin D naturally. Sources of Vitamin D are fish, milk, internal organs such as the liver, kidney and heart, and cod liver oil.

Water is not considered as food, but it plays an important role in maintaining your body's health. It is an important part of all of the tissues of your body—bone, muscles, blood vessels, the blood itself—and aids in food digestion and the elimination of body wastes. Water also helps regulate body temperature. You should drink 8 to 10 glasses of water a day, to stay healthy.

Food Plate

The MyPlate food plate is a nutrition tool for preparing healthy food at meal times. It is intended to guide meal planners to prepare food according to the current nutritional guidelines for different age groups.

In the Philippines, Pinggang Pinoy was developed to show the recommended dietary allowance of food groups in every meal. It is designed to promote a healthy and physically active lifestyle and encourages Filipino to eat fewer fried, salty, fatty and sugar-rich foods to avoid such chronic diseases as high blood pressure and diabetes.



Preparation of the Food Plate

The food plate serves as a guide to creating well-balanced and healthy meals for your family.

The planning and preparing of meals is very important for boys and girls alike.

Factors to consider when preparing a food plate are:

1. Nutritional value. This is important to consider, as all of the necessary nutrients should be present in a meal. It is advisable to follow the three basic food groups as a guide. Also, plan each meal to make sure it is balanced. A balanced meal, which leads to a balanced diet, contains the right amount of each of the three basic food groups in each meal.

2. Palatability is another factor to consider in preparing a food plate. Palatability refers to the taste and appearance of the food. Nobody wants to eat food that is bland or too salty.
3. Cost is an important thing to consider, since money isn't just used for food but also for other expenses such as rental, electricity and water bill payments. Expensive foods are not necessarily the most nutritious compared to cheap foods which could also fulfill your nutrient needs. For example, instead of buying expensive oranges to fill your vitamin C needs, you can use kalamansi or dalandan instead, as these give as much vitamin C as oranges like ponkan. Use fruits and vegetables which are in season, because these are cheaper. Do not serve too many kinds of food in one meal. Rice, vegetables and one protein dish plus milk or some other beverage would be enough.
4. Sanitary quality is all about making sure that the food is clean. Unsanitary food handling and preparation can cause disease and even death. Fruits and vegetables should be washed carefully coming from the market.

Here are some pointers for adding variety to simple meals.

- a. Don't repeat the same kind of food in one meal. If you are having sinigang fish for dinner, do not serve fried fish along with it.
- b. Use only one type of food in one meal. A menu consisting of only rice, macaroni salad, potatoes, and cookies are bad, because all you'll get are carbohydrates, and not the other nutrients you need.
- c. Be particular about the temperature at which the food is served. If the soup is meant to be hot, for example, serve it hot.
- d. Vary the shapes of food. Try to have a variety of shapes on the plates, to make the food look appealing.

The likes and dislikes of each family member should be considered when you prepare your food plate. Good substitutions can be made with a little imagination. That said, don't cater to the whims of just one member of the family and ignore the others. There are more than enough kinds of food to choose from to please everyone.

Finally, breakfast is the most important meal of the day, since our body's nutrients will be depleted after a night's rest. Unfortunately, breakfast is often prepared with least planning and eaten hurriedly because everyone in the family are rushing to get to work or to school. With some planning, and if you get up early enough to prepare and serve it, breakfast can be as pleasant as the other meals of the day.

Food Safety

Food safety refers to handling, cooking and storing food to prevent it from becoming contaminated by things which can cause illness, such as bacteria or sharp pieces or glass. It also refers to making sure that the food is stored and handled in such a way that it still has enough nutrients available when it is eaten.

Here are the things to remember to keep our food safe from spoiling.

1. Food should be fresh, in season, and locally grown. Wash food with clean water before cooking is essential. The water used for drinking, washing and cooking must also be free from bacteria and microorganisms.
2. Raw and cooked food should be kept apart from each other. Cutting boards and knives should be kept in separate containers. Keeping these kinds of food and utensils separate can avoid cross-contamination, or the transmission of germs, from raw food to cooked food.
3. Cook and store food properly. Proper cooking can kill almost all viruses, bacteria and parasites. Promptly store leftover cooked meals and perishable food preferably below 5°C. This is because most bacteria stop growing at temperatures below 5°C or above 70°C.
4. Sanitize and clean. Frequent cleaning of surfaces, followed by disinfection, is the best way to stop the spread of bacteria and viruses, such as the COVID-19 virus. Sponge and sanitize all surfaces, countertops, cooking utensils and other food preparation areas after working on food.
5. Practice personal hygiene at all times. Proper hand washing with soap and clean water before handling food prevents the spread of viruses and bacteria.

Basic Eating Utensils in the Philippines

- Spoon
- Fork
- Dinner knife (occasionally)
- Dinner Plate
- Soup Plate/Bowl
- Drinking Glass/Mug

Proper Way of Using Eating Utensils

1. Sit upright with your forearms touching the edge of the table. Keep your elbows off the table at all times.
2. Scoop the rice with the cooked dish using a spoon. Use a fork to fix the amount of rice and dish on the spoon.
3. Don't scratch or grind the spoon or fork on the surface of the plate. Gently get the rice and dish to avoid making distracting noise.
4. Use fork to skewer solid foods like meat, seafood, vegetable or fruits.
5. Cut large pieces of food into smaller pieces using a dinner knife and a fork.
6. Use a spoon to get soup from the bowl.

System for Cleaning and Storing Utensils

Step 1: Arrange the utensils from the cleanest to the dirtiest. Wash first the ones that contain few amounts of dirt, while last are the ones that have the most amount of dirt or grease.

Step 2: Lessen the amount of dirt or grease by rinsing them with water only before cleaning them with soap.

Step 3: Clean the utensils using a brush or scrub with a detergent (preferably in liquid form) for cleaning utensils.

Step 4: Set aside utensils that have been washed with soap.

Step 5: Rinse with cold water until the slime or soap/detergent is removed.

Step 6: Sterilize utensils with hot water for extra protection from bacteria.

Step 7: Dry off the washed utensils using a clean cloth.

Step 8: Store cleaned utensils in a dry place away from dust, dirt, or insects.



EXERCISES

Exercise 1

How much have you learned? Choose the letter of the correct answer.

1. Which of the following food groups give energy to our body?
 - a. grow foods
 - b. go foods
 - c. glow foods
 - d. minerals
2. These build muscles and bones and repair worn out tissues.
 - a. carbohydrates
 - b. vitamins
 - c. minerals
 - d. protein
3. These foods make sure our body's many processes work the way they are supposed to.
 - a. glow foods
 - b. go foods
 - c. grow foods
 - d. water
4. Nutrients that give heat and energy.
 - a. vitamins
 - b. minerals
 - c. carbohydrates
 - d. protein
5. This vitamin prevents rickets.
 - a. Vitamin A
 - b. Vitamin C
 - c. Vitamin D
 - d. Vitamin B
6. This is the mineral that helps blood clot.
 - a. calcium
 - b. iodine
 - c. iron
 - d. potassium
7. This mineral prevents anemia.
 - a. iodine
 - b. iron
 - c. magnesium
 - d. potassium
8. It is not considered a food but regulates body functions.
 - a. protein
 - b. fats
 - c. water
 - d. oil

9. This food is rich in potassium.

- a. rice
- b. corn
- c. bananas
- d. grapes

10. This vitamin promotes good vision.

- a. Vitamin C
- b. Vitamin A
- c. Vitamin B1
- d. Vitamin B2

Exercise 2

Identify the following. Type the complete word or term.

1. Three basic food groups.

- a. G_
- b. G_ _ _ _
- c. G_ _ _ _

2. Minerals needed by the body.

- a. _____ helps develop strong bones and teeth.
- b. _____ is needed by the thyroid glands.
- c. _____ prevents anemia.
- d. _____ helps your nerves.

3. Vitamins needed by the body.

- a. _____ from papaya
- b. _____ or thiamine
- c. _____ or riboflavin
- d. _____ or pyridoxine
- e. _____ or cobalamin
- f. _____ or ascorbic acid
- g. _____ from fish

4. Factors to consider when preparing a food plate.

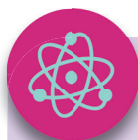
- a. _ _ _ ritional value
- b. _ _ _ _ _ _ _ bility
- c. _ _ _ st
- d. _ _ _ _ tary Quality

5. Things to do to keep food from spoiling.
- a. Food should be _____.
 - b. Raw and cooked food should be kept _____.
 - c. Cook and store food _____.
 - d. Sanitize and _____.
 - e. Practice personal _____.

Exercise 3

Re-arrange the steps according to the discussed system of cleaning and storing utensils. Use numbers (1-8) , (1) as Step 1, (2) as Step 2, and so on.

- _____ 1. Lessen the amount of dirt or grease by rinsing them with water only before cleaning them with soap.
- _____ 2. Dry off the washed utensils using a clean cloth.
- _____ 3. Store cleaned utensils in a dry place away from dust, dirt, or insects.
- _____ 4. Arrange the utensils from the cleanest to the dirtiest.
- _____ 5. Clean the utensils using a brush or scrub with a detergent (preferably in liquid form) for cleaning utensils.
- _____ 6. Rinse with cold water until the slime or soap/detergent is removed.
- _____ 7. Set aside utensils that have been washed with soap.
- _____ 8. Sterilize utensils with hot water for extra protection from bacteria



SUMMARY

The food plate is a useful guide to prepare a balanced diet which should include a variety of foods from each of the basic groups and keep the body in good shape and condition by giving us the nutrients we need. It is important to prepare meals in a safe, hygienic way, to keep from getting sick.



LESSON OUTPUT

Demonstrate a 30-second video that shows one way to keep food from spoiling. Use audio and text in your video. Be creative in presenting your video.

Lesson Output Rubrics

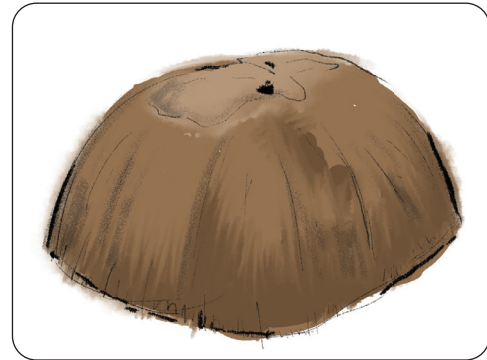
CRITERIA	5	4	3	2	1	POINTS
1. Content/ Functionality	The video is 30 seconds long video and shows one way to keep food from spoiling. Audio and text is used.	The video is 30 seconds long video and shows one way to keep food from spoiling. Audio is used but not text.	The video is 30 seconds long and shows one way to keep food from spoiling. No audio or text is used.	The video is 30 seconds long and shows one way to keep food from spoiling but is not clear on what's being done.	The video shows food being prepared but it is not about preventing it from spoiling.	
2. Creativity	The video uses visual, audio and text elements which contributes to its effectiveness.	The video uses visual and audio elements which contributes to its effectiveness.	The video uses visual elements which contributes to its effectiveness.	The video is simply creative and only a few things are easy to understand.	The video is plain and hard to understand.	
3. Promptness	The project was completed at least two days ahead of the given deadline.	The project was completed one day ahead of the given deadline.	The project was completed by the given deadline.	The project was completed a day after the given deadline.	The project was completed two days or more after the given deadline.	
TOTAL						

Lesson 4

Cleaning Home and Backyard

TRIVIA

The coconut's shell is known to be hard and sturdy, enough to carry the weight of our foot. That is why, in Filipino households, it is used as a cleaning tool called "bunot (/bunót/)", meant to polish the floor and to remove excess dust or dirt.



LESSON OUTCOMES

1. Identify cleaning tools for home and backyard.
2. Learn correct methods for cleaning home and backyard.
3. Practice proper segregation of trash at home.



ENGAGE

Let's begin the lesson discussion by watching the following videos.

Importance of Cleanliness by HooplaKidz Edu-Educational Videos for Kids

<https://www.youtube.com/watch?v=I4DlgnUhHPo>

Milo-Milo's cleanup crew by KidsFlix-Cartoons for Children

<https://www.youtube.com/watch?v=xkfRiwNq0ks>



EXPLORE

Answer Yes if the item is a cleaning tool for the house or backyard, if it's not, answer No.

- _____ 1. broom
- _____ 2. screw driver
- _____ 3. laptop
- _____ 4. baking soda
- _____ 5. mop

- _____ 6. hand sanitizer
- _____ 7. all-purpose cleaner
- _____ 8. vacuum cleaner
- _____ 9. water sprinkler
- _____ 10. used cloth



RESEARCH

Gather inspiration for a slogan or poster about waste segregation or waste sorting. What you will find is part of accomplishing the lesson output.



EXPLAIN

The home provides shelter and protection for the family. It is one of the basic needs that every person should have. Keeping it clean is a responsibility of each family member, because it shows how much we care for each other. Family members can get sick if the home they live in is left uncleaned.

In this lesson, you will learn about the essential cleaning tools to have at home, proper cleaning methods and safety precautions you must remember when cleaning your home or backyard.

Safety Precautions When Cleaning Home and Backyard

When doing cleaning chores, it's important to keep in mind these safety tips for you and your family's protection:

1. **Do not play with cleaning products.** Also, DO NOT mix any these products together. Ask your parents or an adult to guide you on how to properly apply cleaning products. These products have chemical substances that are harmful to people.
2. **Wear protective gear like rubber gloves and a face mask.** A face mask is used to prevent you from inhaling dust or chemical odor that can trigger allergies or cause harm to your health. Wearing rubber gloves is done when using a cleaning product with strong chemical ingredients, like a disinfectant. Using disinfectants and similar chemicals must be done by an adult.
3. **Do not move heavy furniture or heavy items on your own.** It's okay to try and help in handling items at home, but make sure to always ask for assistance and find items that are right for your size and strength.
4. **Dry off wet areas immediately.** A wet floor is one of the common causes of people slipping, which can cause broken bones in the area of the body that hits the floor first or with the most force. Make sure to dry off wet areas quickly, or leave signs that will tell people to be careful when passing these wet areas.
5. **Clean areas of the house that are within your reach.** Even when using a ladder, do not use it without someone guiding or monitoring you. Attempting to reach parts of the house beyond your capacity can cause accidents. As much as possible, only clean parts of the house that is within your arm's reach and/or eye level.
6. **Open windows when using cleaning agents with strong odor.** Aside from using a face mask, it's also a must to open windows or doors when cleaning with strong-smelling products to let fresh air inside, and keep from getting suffocated.
7. **Do not carry heavy or large items when using stairs.** Leave this type of task to your parents or an adult. Using the stairs to go to places without seeing the steps is bad.
8. **Handle fragile items with care.** Example of fragile items are porcelain plates and glass items. Don't run with these items on your hands. Hold them carefully when transferring them to other places.

9. **Wash your hands after home or backyard cleaning.** This is one of the most important safety tips to always do. Sanitize your hands, or better yet, take a shower to protect yourself from bacteria or viruses.
10. **Store cleaning tools and products properly after using them.** Keep them in a place where they won't be reached by small children or pets.

Essential Cleaning Tools for Home and Backyard

Broom	
	A broom is used for removing dirt, dust or other debris on a surface. There are two types of broom commonly seen in a Filipino home. One for cleaning inside the house, and the other is for cleaning the backyard or outdoors. These tools are called “walis-tambo”, and “walis-tingting”, respectively. A walis-tingting is made up of long and thin sticks used for cleaning the backyard. Walis-tambo, on the other hand, is a softer type of broom made from a kind of grass for cleaning inside the house.
Dustpan	
	A dustpan is commonly used with a broom to collect dirt or trash, which is then transferred to a trash bin.

Vacuum Cleaner



A vacuum cleaner is a machine that cleans by sucking up dust and dirt from objects and surfaces. The dirt enters through the tube attachments, and ends up inside the machine.

Trash bin/waste sorting bins



A trash bin or garbage can is used to store garbage before it is collected. Trash bins must be covered to prevent mice and insects from getting inside.

Color-coded waste sorting bins, as shown in the example, allow you to separate trash into categories like biodegradable and non-biodegradable/recyclable.

Mop



A mop is used for wiping liquids spilled on the ground or for removing stains like dried mud on the floor.

Dishwashing liquid and sponge



A dishwashing liquid and sponge are tools for cleaning kitchen and eating utensils.

A dishwashing liquid should have an ingredient that can get rid of dirt and bacteria on utensils.

A sponge is used for wiping off remaining substances on utensils and for lathering the dishwashing liquid.

All-purpose cleaner



An all-purpose cleaner is used for cleaning stains, dirt, or grease on any surface in the house. This is a very convenient cleaning product to have at home, because it can be used for many types of surfaces.

Disinfectant Spray



A disinfectant spray is used for removing viruses, like the Covid-19 virus, that might exist on surfaces of your house. This tool is not a cleaning tool, but only used for getting rid of viruses or bacteria.

WARNING: this type of cleaning product is not meant for playing. It has chemical substances that are harmful to humans and pets. Let an adult do tasks involving use of disinfectants.

Baking Soda



Baking soda is not only an ingredient in baking, but also an effective cleaning product. It can dissolve dirt and grease in water, and can remove smelly odors of items or areas of the house.

Used Cloth/Microfiber



It's also important to stock used cloth or microfiber cloth for wiping surfaces on the house with cleaning products.

Bucket



Buckets or basins are also cleaning tools to have in the house. This to provide containers for water mixed with cleaning substances.

Rubber Gloves



Rubber gloves are essential to wear when cleaning. They are used to protect hands from chemical substances like cleaning products. Overexposing your skin to substances like those can damage it.

Scrub brush



A scrub brush is a type of brush used on floors. It has stiff bristles that are effective for removing grime on floors, especially inside bathrooms.

Toilet Brush



To clean toilet bowls, a toilet brush should be used. It has a long handle and round head to properly remove stains and dirt left on surface of the toilet bowl.

Proper Methods for Cleaning the House and Backyard

1. Match the right tools for each cleaning chore.



Using the right tools for the task of cleaning allows us to do it faster and easier. It's important to use tools and products that match the type of cleaning you need to do.

For example, when cleaning dishes and the kitchen floor, you should never use the same tool for wiping plates and the kitchen floor. The proper way is to prepare different cleaning tools for each cleaning task. You may use other tools in place of the ones shown here.

2. Clean from top to bottom.



Start from the top level when cleaning a shelf. Remove the things placed on it, then wipe it with a piece of dry cloth to remove dust. Next is to clean the shelf with an all-purpose cleaner. After that, move to the level below it and continue the process until you reach the bottom or last shelf.

3. Apply a cleaning product to remove dirt or stains on surfaces and floors of the house.



Depending on the kind of stain, cleaning agents or cleaning products may be needed to completely remove it from surfaces. Also, a brush may be more effective than cleaning cloths on rough surfaces due to its bristles.

4. Gently wipe dust off electronic equipment. Unplug before you clean them.



Some examples of electronic equipment in the house are your TV, computer, speakers and certain kinds of kitchen appliances.

Make sure that the device is unplugged before cleaning it. Wipe off dirt and dust gently, especially on screens, and do not use force. Use a dry cloth or slightly moist cloth, but do not use water to clean them

5. Sweep the floor using a broom and a dustpan. Use a vacuum cleaner if you have it at home.



A broom and a dustpan are tools for collecting dirt and trash on floors. On the other hand, a vacuum cleaner is effective for removing smaller and finer waste like hair and dust. Vacuum cleaners are also good for cleaning out cracks and crevices.

6. Clean areas underneath furniture or appliances.



The areas underneath furniture can also get dirty and dusty even though they aren't as exposed as the other parts are. You can move the furniture to get to their underside, or if the space is big enough, use a vacuum cleaner with a long hose attachment.

7. Mop the floor after sweeping.



After clearing loose dirt from the floor, you can now wipe it using a wet mop soaked in a cleaning solution. You can also use a disinfectant for a deeper cleaning and removal of disease-causing microbes.

8. Clean and disinfect the bathroom once a week.



The bathroom is where we do most of our hygiene practices, which means there's more bacteria on surfaces there. We need to clean bathrooms more thoroughly so that bacteria won't grow and spread.

Tell your parents or an adult in the house to disinfect the bathroom once a week. You can help in cleaning toilet bowls, sink and mirrors.

9. Don't forget to clean glass windows and mirrors as well.



Remove dirt or dust with a dry cloth first when cleaning glass windows and mirrors to keep them from getting mixing with the cleaning solution and make streaks all over the glass.

Then, wipe or spray a cleaning solution or all-purpose cleaner. You can dry the glass or mirror with a clean, dry microfiber cloth, old newspapers, or a squeegee, as shown in the picture.

10. Trim the grass, pluck weeds and sweep unwanted trash on your backyard.



Clean the backyard by trimming the grass or pluck grown weeds. Use a stiff broom or a walis tingting to get rid of trash or waste like fallen or decayed leaves.

Why Do We Need to Segregate Trash at Home?

Common household trash is composed of both biodegradable and non-biodegradable materials. By segregating trash before it gets picked up, we can identify the materials that we can recycle into other items, and prevent them from getting added to the trash that is polluting our environment.

Segregating waste should be practiced because of the following:

- A major cause of flooding is drains and sewers clogged with plastic items. If we reduce the amount of plastic being thrown away, we lessen the chances of it blocking drains.
- Much of the solid garbage found in bodies of water is also made up of plastic. Some kinds of plastic crumble into bits when exposed to sunlight; this means that fish and other marine life get tiny bits of plastic in their bodies, which can poison them. We may also get affected if we eat these kinds of seafood.

How to Practice Proper Waste Segregation at Home

The main goal of waste segregation is to divide waste into four categories: wet waste (biodegradable), dry waste (non-biodegradable), toxic and sanitary waste.

Wet Waste (biodegradable) are kitchen or organic waste such as food leftovers, spoiled food items, vegetable and fruit cuttings or peelings.

Dry Waste (non-biodegradable) are items that do not decay easily, if at all, and are recyclable such as plastic bags, plastic bottles, cartons/boxes, Styrofoam, etc.

Toxic Waste are items that contain chemical substances like batteries, paints, cell phones, etc.

Sanitary Waste are wastes from hygiene products.

To properly divide these wastes, you must provide trash bins per category. Color coded trash bins are helpful to sort wastes easier. For example, green is wet waste, blue is dry waste, red is toxic waste, pink is sanitary waste.

Wet Waste (Biodegradable)	Dry waste (Non-biodegradable)	Sanitary Waste	Toxic waste
Spoiled food items	Product packages (shampoo or soap bottles, soap box, carton juices, sachets, plastic cups, paper cups, etc.)	Disposable diapers	Batteries of electronic items/ equipment/ vehicles
Food leftovers	Plastic bags	Sanitary napkins	Paint, oil & solvents
Vegetable and Fruit cuttings/peelings	Fashion items (clothes, shoes, bags, accessories)	Bathroom cleaning brush	Gasoline
Rotten fruits and vegetables	Glass and bottles	Human hair/nails	Mosquito repellent refill bottles
Used tea bags	Paper, books, magazines, newspaper	Soiled cotton	Light bulb
Egg shells	Toys and dolls	Used cosmetics	Pesticides/ insecticides
Meat and fish bones	Tin cans	Cotton ear buds	Thermometer
Seafood shells	Cartons and boxes	Bathroom cleaning brush	Toilet cleaners, cleaning solutions

What Happens After We Segregate Our Waste?

For wet waste:

- You can create a compost or organic fertilizer using the collected wet waste. To learn how to create a compost using kitchen waste, watch this video tutorial: <https://www.youtube.com/watch?v=DW2hQ-aj5eo>
- Feed edible food wastes to your family's or neighbor's backyard animals

For dry waste:

- Create recycled art and use it as decoration.
- Make money by turning recyclable dry waste into items you can sell. <https://www.youtube.com/watch?v=uK2ccgH5Q0E>

For toxic waste:

- Toxic waste cannot be recycled or turn into a fertilizer. A collector must be called to take this kind of waste out of your house.

For sanitary waste:

- Similar to toxic wastes, sanitary wastes cannot be recycled or use in creating a compost. It has no use, but to be taken by garbage collectors.

In Business

Recycling is the way to go to find money on trash. Learning how to do it does not only do good to you, but also to the environment. There are many tutorials on how to create art, items or decorations from recyclable waste, in the Internet or YouTube, similar to this:

- DIY handmade paper by Vijayta Sharma <https://www.youtube.com/watch?v=sHbk9UAAXGE>



SUMMARY

Correct methods of cleaning and waste segregation are two factors of maintaining a clean environment. You will need tools to accomplish cleaning chores properly in the house and backyard. We must learn to sort our waste to help the Earth, which we can also gain something from it through recycling.



EXERCISES

Exercise 1

Fill in the blanks.

1. _____ is organic waste like spoiled food or vegetable/fruit peelings.
2. _____ is waste that contains chemical substances.
3. _____ is used where collected trash/waste is stored.
4. _____ is made of thick strings that can absorb liquid substances and wipe stains on the floor.
5. _____ means separating trash into categories.

Exercise 2

Choose the word that makes each statement incorrect.

- _____ 1. Disinfectants are used for removing stains on any surface of the house.
- _____ 2. To properly clean shelves and cabinets, start at the bottom.
- _____ 3. Close windows when using cleaning product with strong odor.
- _____ 4. Clean the bathroom at least once a month.
- _____ 5. Use a vacuum cleaner to clean the backyard.

Exercise 3

Complete the table. Choose your answer from the word bank below.

Wet waste	Dry waste	Sanitary waste	Toxic waste
1.	cassettes and cd's	cotton ear buds	batteries
coffee powder waste	2.	sanitary napkin	paints
spoiled food	plastic	3.	pesticides
rotten fruit	clothes	used cosmetics	4.
Fish and meat bones	magazines	diaper	thermometer

Word Bank	
Lightbulb	Human nails
kitchen waste	tin can



LESSON OUTPUT

Create a slogan or poster that will engage your family, friends or community to segregate their waste. Do it on an A4 or 8.5 x 11 bond/colored paper.

Lesson Output Rubrics

Lesson output objectives:

- Create a slogan/poster
- Slogan/poster should be about waste segregation
- Use an A4 or 8.5 x 11 bond/colored paper.

CRITERIA	5	4	3	2	1	POINTS
1. Content/ Functionality	All 3 objectives for the activity were met.	All 3 objectives for the activity were met but were not exactly as instructed.	Only two of the objectives for the activity were exactly met.	Only one of the objectives for the activity was exactly met.	None of the objectives for the activity was met.	
2. Creativity	The student showed outstanding creativity by adding elements that made the output visually appealing.	The student showed adequate creativity by adding decorative elements in the activity output.	The student showed a fair level of creativity with the additional decorative elements.	The student showed some creativity with the additional decorative elements.	The student did not display any effort on his/her submitted output.	
3. Promptness	The output was completed two or more days ahead of the given deadline.	The output was completed one day ahead of the given deadline.	The output was completed by the given deadline.	The output was completed one to two days after the given deadline.	The output was completed three days after the given deadline.	
TOTAL						

Industrial Art

Drawing Tools



Drawing Principles



Drawing and Painting (Freehand and Mechanical)



Recycled Art



Lesson 1

Drawing Tools

TRIVIA

The first drawing tool ever used was the hand and the first ones to use this to create an imprint of the palm and fingers were the Neanderthals, human ancestors who lived more than 65,000 years ago in Maltravieso cave in what is now Spain. Such an imprint using plant dyes is called a stencil. That particular stencil is considered as the oldest known cave painting.



LESSON OUTCOMES

1. Identify some drawing tools.
2. Describe the drawing tools that you like to use often.
3. Demonstrate the use of a drawing tool.



ENGAGE

Watch at least one of the following videos about drawing tools and their uses.

YouTube Video "Drafting Tools, Materials, and Equipment Meaning and List" by Melinda Sili

<https://youtu.be/jZrSPdoFGbs>

YouTube Video "Drafting and Materials" by Keidel Dacasin

<https://youtu.be/yBtfyluv9PI>



EXPLORE

What do you already know about drawing tools and their uses?

Choose the letter of your answer.

- _____ 1. It is the most basic drawing instrument used for graphic and traditional drawing. It comes in the form of a wooden hexagonal cylinder with a bar of graphite and clay at its core.
- | | |
|------------------|-------------|
| a. drawing board | c. ruler |
| b. pencil | d. triangle |
- _____ 2. Which of the following drawing tools can be refillable with lead, but which can also be quite expensive?
- | | |
|-----------------|----------------------|
| a. scissors | c. compass |
| b. masking tape | d. mechanical pencil |
- _____ 3. If you want to clean or remove unnecessary marks or smudges, which drawing tool will you use?
- | | |
|------------------|---------------|
| a. eraser | c. pencil |
| b. eraser shield | d. protractor |
- _____ 4. This is used to measure angles. It is a semi-circular plastic tool with scales printed on it.
- | | |
|------------------|---------------|
| a. drawing board | c. protractor |
| b. T-square | d. triangle |
- _____ 5. It is an instrument used to draw arcs and circles. It has two arms, one of which is placed at the center of a circle, while the other is used to draw out arcs or circles.
- | | |
|-------------|------------|
| a. ruler | c. pencil |
| b. triangle | d. compass |
- _____ 6. A _____ is a three-sided tool, two of whose sides meet at a 90-degree angle.
- | | |
|-------------|---------------------|
| a. triangle | c. triangular scale |
| b. T-square | d. pencil |

- _____ 7. It is used to measure, transfer or mark out distances.
- a. compass
 - b. divider
 - c. ruler
 - d. pencil
- _____ 8. This tool is used to make horizontal lines as well as to guide triangles when drawing vertical lines.
- a. divider
 - b. B. protractor
 - c. compass
 - d. T-square
- _____ 9. This tool is generally used to create an enlarged or reduced copy of a drawing.
- a. triangular scale
 - b. T-square
 - c. ruler
 - d. French curve
- _____ 10. Drawings are done on _____.
- a. paper
 - b. boards
 - c. masking tape
 - d. triangles

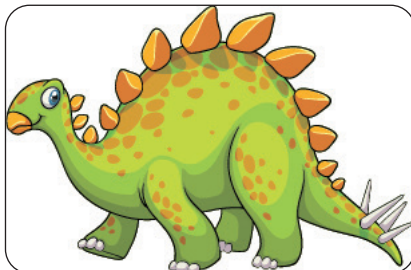


RESEARCH

Can you name at least one other drawing tool other than the ones presented in the video?



EXPLAIN



You might think of drawing as being in the realm of artists and cartoon animators, but drawing is also used in different fields. Technical people such as architects, for instance, draw the details of the buildings they intend to build, and engineers often need to draw the individual parts used in a machine to make sure that everyone who is working on that machine knows exactly what that part's measurements are.

That said, a drawing cannot be created by imagination alone. Drawings need to be put down on surfaces like paper for these to be seen, and to do so, drawing tools are needed. In this lesson, you will learn about some of the more basic tools used for drawing.



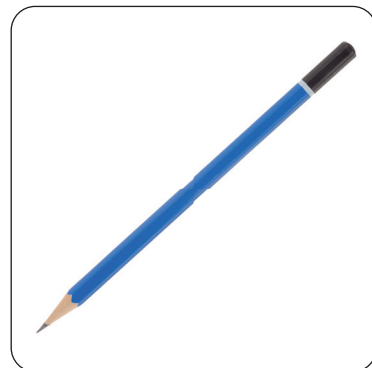
Drawings are a part of our daily lives, because just about any finished product you see around you was likely first drawn before it was made. Drawing tools include pencils, sketch books, drawing boards, paper, T-squares, rulers, triangles, protractors and compasses. Drawing provides patterns for things to be made, as well as communicates ideas and information.

YouTube Video “DRAWING MATERIALS AND TOOLS/DRAWING INSTRUMENTS” by Helga Lorenzo https://youtu.be/_16fEf_g7Gc

Drawing tools

Pencil

The pencil is one of the most important tools used in drawing. It is a long, thin object, usually made of a wooden hexagonal cylinder which has a bar of a graphite and clay at its core. It comes in several grades of hardness: 9H, 8H, 6H, 5H, 4H, 3H, 2H, H, F, HB, B, 2B, 3B, 4B, 5B, 6B, 7B, 8B, 9B, 9xB. The pencils used in standard drawing sets usually run from 2H to 6B, and the grade of the pencil used depends on the quality of paper that it is used on.

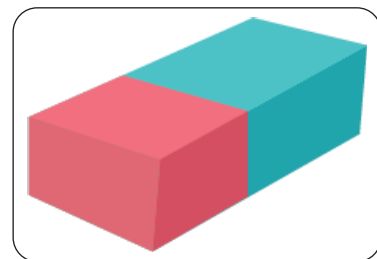


Mechanical pencils are used in technical drawing to provide lines of constant width, without the pencil needing to be sharpened often. Mechanical pencils are so named because these use a mechanically extendable solid graphite core called a “lead.” Mechanical pencils have also been used to draw in fine arts. Mechanical pencils are also called automatic pencils, drafting pencils, technical pencils, click pens or microtip pens.

The hardness of pencil lead can be hard, medium or soft. Hard pencils are used where extreme accuracy is required, such as on graphs, diagrams and charts. Medium pencils are used for general purpose work in drawing. Soft pencils are too soft to be used in mechanical drawing, but are used to make artwork drawings.

Eraser

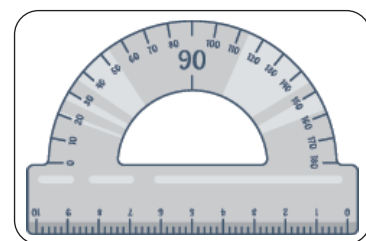
An eraser is a drawing tool which is used to remove dirt or unnecessary marks on a drawing. Gum erasers are a kind of soft eraser, and are ideal for erasing graphite marks on paper, as these don’t tear the paper while doing so. Gum erasers are also referred to as “art gum” erasers, as these have a soft, somewhat gummy texture. Soft erasers are used to remove stains and pencil marks on paper. Hard erasers are used to make changes and correct errors in technical drawings.



Protractor

A protractor is an instrument used to measure, draw and plot out angles. This can be made of metal, wood or plastic. It comes in many shapes and forms, such as circular, military, steel, universal vernier bevel and optical bevel. The most popular form is the semicircular shape, which has a printed scale marking out 180 degrees.

Protractors have a vertex mark at their base mid-point from which all angular directions can be measured. Semicircular protractors usually have two scales, with the outer scale showing 0 to 180 degrees when read from left to right, and the inner scale reading from 0 to 180 degrees from right to left.



YouTube Video “How to use a protractor” by Christian Meglio <https://youtu.be/t4xCOUNEInI>

Compass

A compass is a drawing instrument that is used to draw circles or parts of circles, which are called arcs. It is composed of a steady leg and an adjustable or pencil leg, both of which are connected and held together with a hinge and handle. The steady leg has the needle on it, and is used as the center point of the circle or circle arc to be drawn, while the pencil leg draws out the circles and arcs. It can also be used to measure distances on maps.



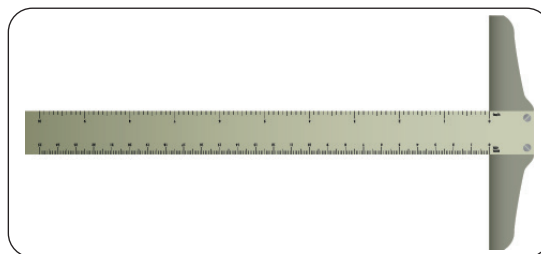
Divider

A divider is just like a compass, except it doesn't use a pencil. It is used to measure, transfer or mark out distances, such as those on charts, which is why dividers are useful in the maritime industry. Drafting dividers are used to accurately transfer measurements by adjusting the divider points, as well as to mark out lines on surfaces which will be worked on in a machine shop.



T-square

A T-square is a straight-edged drawing instrument which uses the edge of the drawing board as a support and guide. Its name comes from its resemblance to the letter T. T-squares are made of wood, plastic, light metal such as aluminum, or a combination of these.

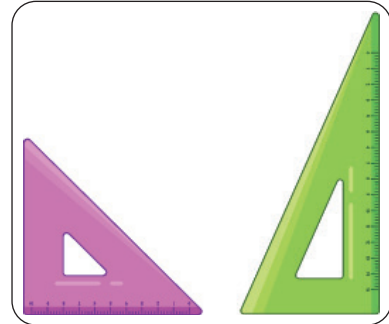


A T-square is used to make horizontal lines, vertical lines or diagonal lines, as well as to establish a horizontal reference on the drafting board. It is also used to guide triangles when drawing vertical lines.

The fixed head T-square, whose head is fastened to the blade, is used for regular work. Movable or adjustable head versions are also used for drawing. Detachable or removable head versions are designed for comfort when the T-square is carried.

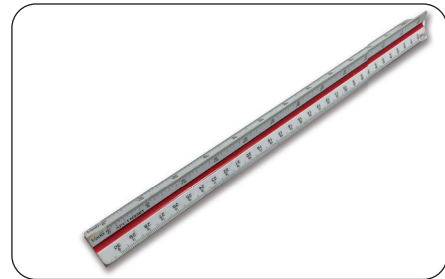
Triangle

A triangle is a three-sided tool which is often used with a T-square. It is used to draw accurate parallel lines, vertical lines and angled lines. It consists of two sides which meet at a 90-degree angle and a third side which meets the other two sides, usually either at 45 degree angles, or at 30 and 60 degree angles.



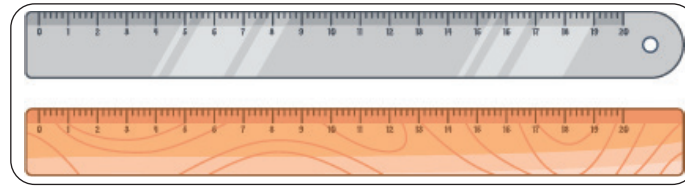
Triangular Scale

A triangular scale, or a scale ruler, is a scaled, three-edged ruler which has six different scales marked on its sides. It is used to accurately reproduce the measurements of an object, so that an enlarged or reduced copy of a drawing can be made. Triangular scales used to be made of hardwood, but today, these are made of plastic. One type available is a pocket-sized version with scales printed on flexible plastic strips.



Triangular scale rulers are also used to determine the actual dimensions of a distance on a scaled drawing. Once the scale of the drawing has been established, the correct scale on the ruler should be selected. For example, a 1/8 scale on the ruler converts 1/8 inch on the drawing to 1 foot in reality.

Ruler



A straight-edge ruler, or “ruler,” for short, is a drawing tool used to measure out lengths, to help draw straight lines, and to guide blades so these can cut straight lines. Rulers can be made of metal, wood or plastic, with metal rulers being used in workshops. Wood rulers are used in construction, as these are tougher than their plastic counterparts. Plastic rulers, on the other hand, are the most commonplace ones, as these are used in schools.

Rulers also come in many sizes. Short rulers can be kept in pockets. Wooden or plastic yardstick or meterstick rulers are straight-edged or foldable rulers used to measure 1 yard or 1 meter of length. Other types of rulers are the line gauge, the carpenter’s folding rule, and the tape measure.

Kinds of Paper Used in Drawing

Drafting paper is different from the paper that is commonly used. This kind of paper is made specifically to be drawn on with pencils. The paper is smooth, erasable and made from such materials as vellum and film. It does not scratch easily when a pencil is pressed into it. Oslo paper can also be used. Bond paper is also commonly used, as it is affordable and can be bought in different sizes.

Drafting table



A drawing, or drafting, table is a multipurpose desk used for drawing and for reading blueprints. This is where paper is attached to so that drawings can be done accurately. It can be mounted on a floor pedestal, and the board angle can be adjusted so it is easier and more comfortable to draw on. Sometimes, the height can be adjusted so that you can stand or sit while working.

Measurement in Drawing

In drawing, measurements are essential in order to draw the image that you see or have in your mind accurately.

For example, when architects design houses or buildings, they need to use measuring tools to calculate the correct size of walls, floors, ceilings and other components of a building. Without measurement or measuring tools, they will not be able to create a house or building that is sturdy and follows the client's wants accurately.

Aside from houses or buildings, measurements are used in drawing people, animals, and landscapes realistically and precisely; specifically, they help in setting the correct alignment of the face and other parts of the body.

System of Measurement

There are two standard systems of measurement in use. These are the Metric and English, or Imperial system. Of the two, the Metric system is used in more countries.

The Metric system is an international standard system of measurement that has three main units, namely the meter, gram, and liter.

- For length= meter (m)
- For mass= gram (g)
- For volume= liter (L)

Linear, or length measurements are the ones used in drawing.

The British Imperial system or English system, on the other hand, adopted its measurement units from common objects or body parts – that's why their units are called the foot (length), the pound (weight), and the quart or gallon (volume).

Linear measurements or length measurements are the ones used in drawing.

Because they are written very frequently, both metric and English measurement units have abbreviations, or shorter ways to write them, usually with only two letters. For example, metric length measurements are written as m for meter, cm for centimeter, and mm for millimeter. English length measurements are written as in for inches,

ft for feet, and yd for yards. You can just use the shortened format or abbreviation when writing them.

Converting between measurement units happens regularly in drawing, especially when designing something that has to be recreated in physical form later on. You can convert values between Metric and English, or reduce measurements to smaller units. Metric units are easy to reduce to smaller units because each unit is 10 times bigger than the previous one.

Metric to Metric Conversion (Length)

10 millimeters (mm) = 1 centimeter (cm)

10 centimeters (cm) = 1 decimeter (dm)

100 centimeters = 10 decimeters

10 decimeters = 1 meter

1000 centimeters = 1 meter

1000 meters = 1 kilometer

English to English Conversion (Length)

1 foot (ft) = 12 inches (in) or 12

1 yard (yd) = 3 feet (ft)

1 mile (mi) = 1760 yards (yd)

Imperial to Metric Conversion (Length)

1 inch = 2.54 centimeter

1 foot = 0.3048 meter

1 yard = 0.9144 meter

1 mile = 1.6093 kilometer



EXERCISES

Exercise 1

How much have you learned?

Choose the letter of the correct answer.

1. A _____ is a long, thin object usually made of wooden hexagonal cylinder for writing.
 - a. pencil
 - b. protractor
 - c. divider
 - d. compass
2. It is used in technical drawing to provide lines of constant width without needing to be sharpened.
 - a. hard pencil
 - b. mechanical pencil
 - c. medium pencil
 - d. soft pencil
3. Which of the following statement best describes a protractor?
 - a. A protractor has one scale.
 - b. It has no vertex.
 - c. It is used to measure, draw and plot out angles.
 - d. A protractor has only one form.
4. Which of the following instruments is used to draw circles or arcs?
 - a. divider
 - b. T-square
 - c. triangle
 - d. compass
5. When are triangles used?
 - a. Triangles are used to draw accurate parallel lines, vertical lines and angled lines.
 - b. These are used to draw circular shaped objects.
 - c. Triangles are used to create lines from a vertical base.
 - d. Triangles are used to draw arcs.
6. A _____ consists of two straight adjustable legs hinged together. One of the legs has a pencil attached to it.
 - a. compass
 - b. divider
 - c. ruler
 - d. T-square

7. This drawing instrument is used as a guide to make horizontal lines, vertical lines or diagonal lines.
- a. pencil
 - b. compass
 - c. T-square
 - d. divider
8. The main use of triangular scale or scale ruler is to _____ the sizes of drawn objects.
- a. cut
 - b. trace
 - c. copy
 - d. enlarge or reduce
9. What drawing tool is used to measure out lengths and draw straight lines?
- a. ruler
 - b. triangle
 - c. pencil
 - d. divider
10. This is where the paper to be drawn on is attached.
- a. compass
 - b. drafting table
 - c. divider
 - d. triangle

Exercise 2

Enumerate the following.

1. Types of pencil lead hardness
 - a. _____
 - b. _____
 - c. _____
2. Kinds of erasers
 - a. _____
 - b. _____
3. Protractor scales
 - a. _____
 - b. _____

4. Commonly used triangles, in degrees

a. _____

b. _____

5. Ruler materials

a. _____

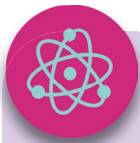
b. _____

c. _____

Exercise 3

True or False?

- _____ 1. There are no measuring tools for drawing.
- _____ 2. The two systems of measurement are the Meter system and English system.
- _____ 3. Meter, gram and liter are the three main units of the English system of measurement.
- _____ 4. The measurement unit called the mile belongs to the metric system.
- _____ 5. The measurement unit called the kilometer belongs to the English system.



SUMMARY

There are many different kinds of drawing tools, each of which has a particular use. Some tools are used to measure and lay out drawings, while others are used to draw with. Such tools include pencils, rulers, compasses, protractors, dividers, T-squares, and triangles.



LESSON OUTPUT

Demonstrate a 30-second video that shows how a drawing tool is used. Be artistic in presenting the video. You will be rated based on the overall evaluation.

Lesson Output Rubrics

CRITERIA	5	4	3	2	1	POINTS
1. Content/ Functionality	The student presented a complete process from start to finish. Explanations were given on the tool used. Insights were also given on how the tool should be properly used. An alternative ending was shown, which shows what happens when the tool isn't used properly.	The student presented a complete process from start to finish. Explanations were given on the tool used. Insights were also given on how the tool should be properly used.	The student presented a complete process from start to finish. The only explanations consisted of what tools were used to do the work.	The student presented a complete process from start to finish. No explanatory comments or insights were provided.	The student did not present a complete process from start to finish.	
2. Creativity	The student's output made use of unconventional media and materials which made it pleasing to look at.	The student's output used common media used creatively but still made the content easy to understand.	The student's output was artistic but not clear in delivery.	The student's output was plain yet only a few things were easy to understand.	The student did not attempt to be creative in any way in delivering the content of the project.	
3. Promptness	The project was completed two or more days ahead of the given deadline.	The project was completed a day ahead of the given deadline.	The project was completed by the given deadline.	The project was completed a day after the given deadline.	The project was completed two days or more after the given deadline.	

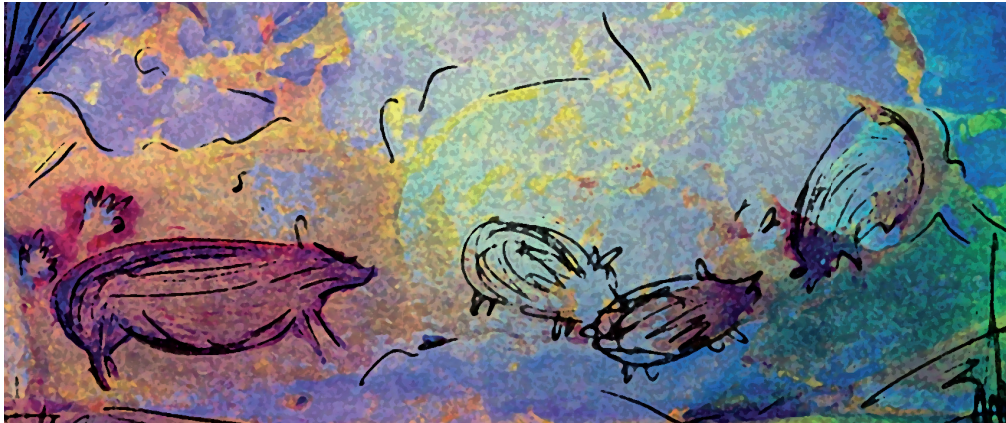
TOTAL

Lesson 2

Drawing Principles

TRIVIA

Did you know that the oldest paintings of animals are 45,000 years old and are found in Indonesia? They are so old that parts of the cave wall where the paintings were drawn have flaked off. It is clear that the ancient painters knew what they were doing, and even then, the artworks demonstrate and depict the basic principles of drawing that we know today.



LESSON OUTCOMES

1. Identify the different drawing principles.
2. Describe one of the drawing principles.
3. Demonstrate one drawing principle.



ENGAGE

Watch the video in the link about drawing principles.

YouTube Video "12 Principles of Design"
by Ella Burgos

<https://youtu.be/ut8itc7VCAk>



EXPLORE

What do you already know about drawing tools and their uses?
Choose the letter of your answer.

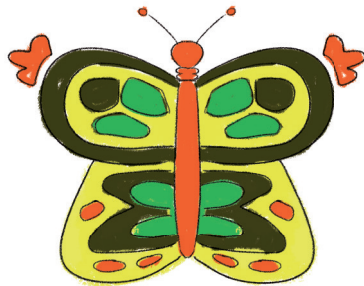
1. This refers to how elements are arranged horizontally or vertically in a design.
 - a. balance
 - b. emphasis
 - c. rhythm
 - d. contrast
2. _____ is the feeling of movement that shows with repeating lines, color, shapes or textures.
 - a. Unity
 - b. Rhythm
 - c. Movement
 - d. Emphasis
3. The focus of interest in a drawing.
 - a. proportion
 - b. scale
 - c. emphasis
 - d. contrast
4. This is how one part relates with another part, particularly in size.
 - a. emphasis
 - b. balance
 - c. rhythm
 - d. proportion
5. When elements and principles of design are used effectively.
 - a. unity
 - b. contrast
 - c. pattern
 - d. balance
6. Rhythm is created through _____.
 - i. repetition
 - ii. gradation
 - iii. radiation
 - a. i only
 - b. i, ii, iii
 - c. i, ii
 - d. ii, iii
7. This refers to when a part of a drawing stands out.
 - a. unity
 - b. emphasis
 - c. contrast
 - d. space
8. This refers to arrangement of elements in order of importance.
 - a. pattern
 - b. scale
 - c. rhythm
 - d. hierarchy

Drawing Principles

There are principles to consider when drawing, and these principles are what an illustrator, artist or designer uses to make a good drawing. Elements of drawing are: line, color, value, texture, form, shape and space. Drawing principles include: unity (or harmony), balance, rhythm, proportion, emphasis, white space, variety and movement. The difference between a weak design and a strong one depends on the artist's knowledge of design principles and how well he/she applies them.

The following are drawing principles which will help you make a better drawing.

Balance



Balance refers to how elements are organized horizontally or vertically in an image or design. Balance can be formal or informal.

Formal balance is also called symmetrical balance. This occurs when elements on one side visually complements or supports those on the other side. The elements on opposing sides do not compete for attention.

Informal balance is also known as asymmetrical balance. This occurs when elements on one side visually detracts from those on the other side. The two sides may appear different or unequal, but the image, as a whole, still looks balanced. Informal balance is used to make a drawing appear more dynamic, taking the viewers gaze from one side to the other.

Rhythm

Rhythm is formed when one or more elements of an image are used repetitively. Rhythm is used to either give energy or a sense of stability and regularity to a drawing. Repeating visual elements, such as lines, shapes and textures, are organized to create a mood, in the same way that music does, to form a rhythm. Rhythm is achieved through repetition, radiation, and gradation. To keep rhythm active and exciting, variety is needed.



The five types of visual rhythm that can be used in a drawing are: random, regular, alternating, flowing, and progressive.

Random rhythms are those which do not seem to follow any pattern at all. Regular rhythms, on the other hand, follow the same spacing over and over again, such as a regularly-spaced grid of lines. Alternating rhythms have a set, repeating pattern, with variations between the actual elements, such as what can be seen in images of the interior of the Guggenheim Museum. Flowing rhythms create a sense of movement by using curves or circles, such as what can be seen in paintings of waves. Progressive rhythms contain repeating elements which change in size or color, such as what can be found in a fractal image, which is a mathematical construct with infinitely repeating patterns.

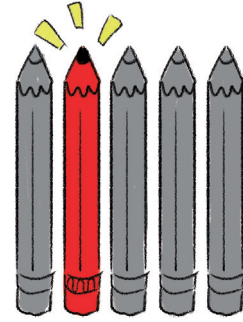
Variety

Variety is the use of the many elements of a drawing to hold a viewer's attention, as well as to guide the viewer's eye around and throughout the image. An image without variety is monotonous and boring, causing the viewer to lose interest. Variety can be created through such elements as color, images and shapes. Variety should support the other elements of a design to create an interesting and pleasing image that attracts and keeps the viewer's interest.



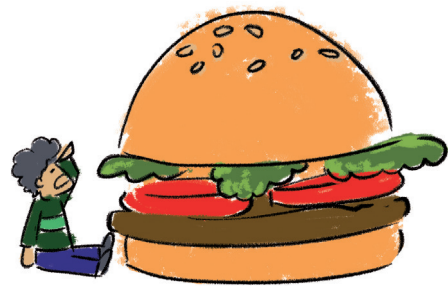
Emphasis

Emphasis refers to the main or focal point of the drawing or design which is designed to catch the viewer's interest. It is the first thing seen or noticed that immediately grabs a viewer's attention, as emphasis makes that element stand out. Emphasis is also given to the most important figure or element in the image.



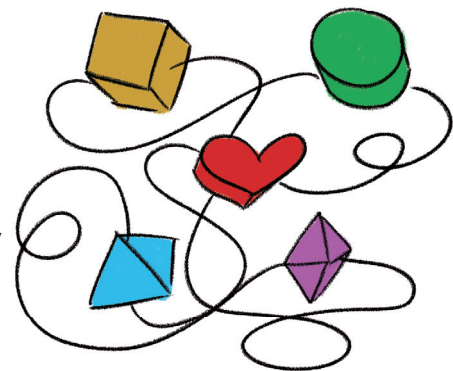
Proportion

Proportion refers to how one part relates to another part, such as in terms of size, and a sense of completeness is achieved when the proportions relate well with each other. Where drawing human figures is concerned, proportion is used when calculating the size of the body to be as long as seven and a half heads. Proportion is also one of the easiest drawing principles to understand.



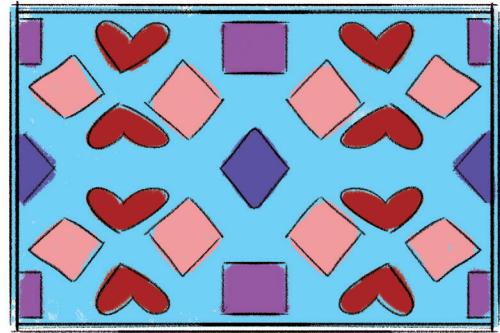
Unity

Unity is the sense of completeness created when there is harmony among all parts of an image. Unity is about creating a visually pleasing arrangement among elements in a design. Where the viewer is concerned, unity is the feeling that everything in an image looks like it goes right where it should go. Unity occurs when elements and principles of design are used effectively.



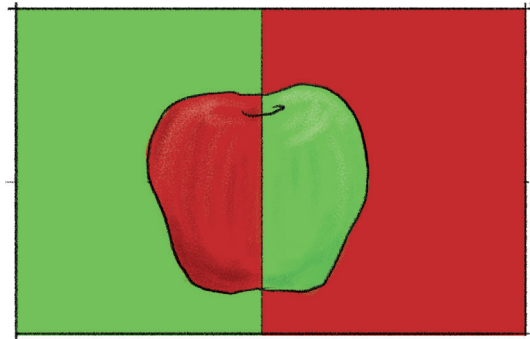
Pattern

Pattern is created by the repetition of drawing elements, such as shape or form, line, color or texture, which work well together. Wall or floor patterns are the most common of patterns that is familiar to everyone. Patterns can also refer to set standards for how certain elements are designed.



Contrast

Contrast refers to the arrangement or look of opposing elements in an image to make an image look more interesting. Examples of contrast are bright versus dark, heavy versus light, and soft versus hard.



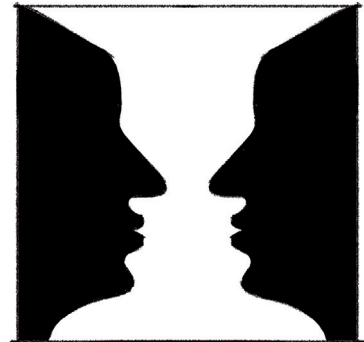
Visual Hierarchy

Visual hierarchy is where elements are arranged by order of importance by manipulating characteristics like color, size, texture and shape. An example of this would be an advertisement where the product fills up most of the display image.



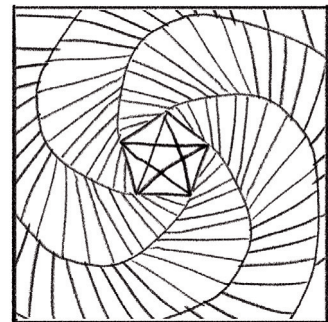
White Space

White space, which is also called “negative space,” refers to the areas of an image or design which have no drawing or design elements. Negative space can help highlight specific content or specific parts of a design. White space helps spread out elements in an image, so the layout looks less crowded. An example which uses white space is M. C. Escher’s *Sky and Water*.



Movement

Movement refers to the way a viewer’s eyes travel across an image. It takes advantage of the fact that the eye naturally and immediately looks at specific parts of an image or layout, and thus works by aligning and emphasizing the image’s elements so that the eye will follow a particular hierarchy. An example of this is Vincent van Gogh’s painting, *Starry Night*.



SUMMARY

Using drawing principles properly is vital to making any design project or layout successful. These principles need to be understood by beginner designers or artists like you. Drawing principles include balance, unity, rhythm, proportion, emphasis, white space, variety and movement, and these principles are applied among the elements of drawing, which are: line, color, value, texture, form, shape and space.



EXERCISES

Exercise 1

How much have you learned?

Choose the letter of the correct answer.

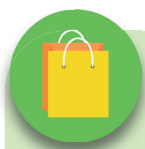
1. This refers to the primary center of an image that immediately holds the viewer's attention.
 - a. emphasis
 - b. unity
 - c. hierarchy
 - d. proportion
2. This refers to the size of elements in relation to one another.
 - a. balance
 - b. proportion
 - c. emphasis
 - d. contrast
3. Which drawing principle is used when one or more elements of drawing are used repetitively?
 - a. pattern
 - b. emphasis
 - c. rhythm
 - d. movement
4. _____ attracts the viewer's eye to the opposite arrangement or look of drawing elements.
 - a. Variety
 - b. Pattern
 - c. Balance
 - d. Contrast
5. Which of the following drawing designs refers to how elements are organized horizontally or vertically in a certain design?
 - a. balance
 - b. white space
 - c. variety
 - d. emphasis
6. If a repetition of specific or multiple drawing elements, such as shape or form, line, color or texture working together is present, _____ is formed.
 - a. proportion
 - b. pattern
 - c. contrast
 - d. unity
7. The feeling of harmony between all parts of the drawing principles.
 - a. variety
 - b. balance
 - c. unity
 - d. pattern

8. This refers to the way a viewer's eyes travel across the design or image.
- a. movement
 - b. contrast
 - c. rhythm
 - d. unity
9. It is the area of a design that does not include any drawing or design elements.
- a. balance
 - b. white space
 - c. proportion
 - d. pattern
10. When we use numerous elements of drawing to hold a viewer's attention, _____ is created.
- a. movement
 - b. contrast
 - c. variety
 - d. balance

Exercise 2

Enumerate the following.

1. Types of balance
 - a. _____
 - b. _____
2. Types of rhythm
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____
3. Examples of contrast in drawings
 - a. _____
 - b. _____
 - c. _____
4. Drawing Principles (list down five)
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____



LESSON OUTPUT

Create a 30-second video that highlights one drawing principle. Be artistic in presenting the video. You will be rated based on the following rubrics.

Lesson Output Rubrics

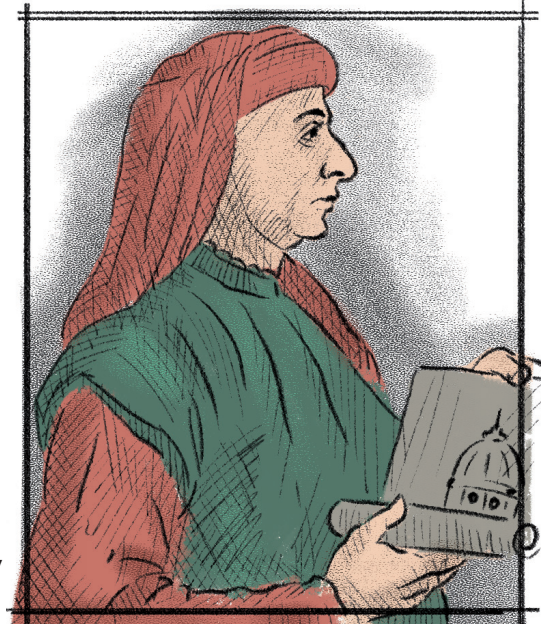
CRITERIA	5	4	3	2	1	POINTS
1. Content/ Functionality	The student presented and demonstrated a drawing principle and included an explanation on why it should be used. It also shows how the principle isn't done properly.	The student presented a drawing principle which is fully explained with points on why this principle should be used.	The student presented a drawing principle and included a basic explanation.	The student presented a drawing principle, but no explanatory comments or insights were provided.	The student presented a drawing principle but is not clear on what it is.	
2. Creativity	The student's output made use of unconventional media and materials which made it pleasing to look at.	The student's output used common media used creatively which still made the content easy to understand.	The student's output was artistic but not clear in delivery.	The student's output was plain but a things were still easy to understand.	The student was not creative and the content which was not clear.	
3. Promptness	The project was completed two or more days ahead of the given deadline.	The project was completed a day ahead of the given deadline.	The project was completed by the given deadline.	The project was completed a day after the given deadline.	The project was completed two days or more after the given deadline.	
TOTAL						

Lesson 3

Drawing and Painting (Freehand and Mechanical)

TRIVIA

Did you know that it was only during the Renaissance period (14th to 17th centuries) when artists were able to accurately show the size of objects in the distance as they were meant to be seen? Prior to that, painters weren't able to effectively depict the size of objects based on their distance from the viewer. Renaissance painter Filippo Brunelleschi was the first artist to master perspective in drawing, where straight lines which meet at a single point on the horizon of the drawing are used. With these lines as a guide, artists were finally able to mechanically draw such things as buildings according to scale.



LESSON OUTCOMES

1. Define what freehand drawing is.
2. Describe what mechanical drawing is.
3. Learn basic sketching, outlining and shading.
4. Learn to create lettering.
5. Illustrate a type of drawing.



ENGAGE

Watch the following videos about freehand and mechanical drawing.

YouTube Video "Elementary and Intermediate Exam Freehand Drawing EI" by Drawing Tutorials (<https://youtu.be/RTxQUfQw3ZM>)

YouTube Video "Introduction to Technical Drawing" by matter2form
(<https://youtu.be/YE0oZZO7vbk>)

YouTube Video "How to draw Portrait-Artistic drawing and painting" by Art Pro
(<https://youtu.be/-PQJKCRYPI8>)



EXPLORE

What do you already know about freehand and mechanical drawing?
Choose the letter of your answer.

1. It is a technique and the ability to illustrate, outline, or draw something without relying on an instrument, except maybe a pencil or pen.
 - a. freehand drawing
 - b. mechanical drawing
 - c. artistic drawing
 - d. technical drawing
2. The easiest kind of art can be about these things.
 - a. Natural objects
 - b. Abstract ideas
 - c. Fractal calculations
 - d. Creativity
3. Freehand drawing is synonymous with _____.
 - a. linear graph
 - b. artwork
 - c. sketching
 - d. figure
4. Freehand drawing uses _____ and paper.
 - a. T-square
 - b. compass
 - c. protractor
 - d. lead pencil
5. Which of the following kinds of paper is best suited for bolder, expressive work using charcoal, chalk, pastel pencils, and soft graphite?
 - a. rough
 - b. medium
 - c. smooth
 - d. cartridge

6. This is a kind of paper with a grid of lines printed on it.
- a. plain paper
 - b. graph paper
 - c. draft paper
 - d. Oslo paper
7. It is an arrangement of objects, such as fruits, flowers and other objects.
- a. graffiti
 - b. hyperrealism
 - c. still life
 - d. portrait
8. Short lines are drawn by moving only these.
- a. arms
 - b. segments
 - c. elbows
 - d. fingers
9. A _____ is a common shape used in technical drawings.
- a. rectangle
 - b. square
 - c. circle
 - d. curve
10. Mechanical drawing is the art of drawing a picture or architectural structure of an object, with _____ to give precise measurements.
- a. tools
 - b. outline
 - c. technique
 - d. concept



RESEARCH

After watching the videos, answer the following questions.

1. What are your observations about the videos?
2. What are some of the different drawing tools presented?
3. Why do we need to identify the different drawing tools?



EXPLAIN

Drawing and painting are both forms of visual art, as these are things which are created to be seen by people. Drawing is a form of art, which is all about expressing and communicating an idea. The ideas expressed in an art form must thus appeal to people, and must represent something with which the person seeing it is familiar with. The easiest kind of art is the kind of things which can be seen around us, such as natural objects.

A good artist is someone who can show the simplest ideas in ways that others can appreciate. It doesn't matter what medium is used to show that creativity.



Painting comes from the imagination and is created by using a canvas or a board. A painter gives it composition, narration, abstractions and gestures. Painting and drawing are artworks that can be appreciated by many for over a long time.

Watch the following YouTube Video "Freehand Drawing" by Chameleon Art Products. (<https://youtu.be/sTgYb9gFDaE>)

Freehand Drawing

Freehand drawing is a way of drawing which is also one of the fastest ones around. Freehand drawing is the ability to illustrate, outline, or draw something without relying on tools, except maybe a pencil or charcoal to do so. The drawing is done using only an artist's hands (perhaps with a basic tool like a pencil) and his or her observational skills. When an artist draws the likeness of a cat, for example, the cat isn't traced out; it is drawn by hand, based on what the artist sees.

A drawing can be done by using a pencil and eraser, but other media used can be charcoal or carbon pencils, black ink, pastel, oil paint, watercolor or crayon. The best medium to use is one which requires the least time for the artist to prepare and care for. The value of the work lies in the training and knowledge applied to creating it.

Freehand drawing is also synonymous with sketching. Not all freehand drawings are technical sketches, but all technical sketches are freehand drawings.

The following instruments are needed for freehand sketching and orthographic drawing:

1. Pencils

Soft lead pencil points can be sharpened into three different shapes: chisel, elliptical and conical. The conical and chisel shapes are the ones most often used. Pencils are not only cheap, but also don't need that much time to sharpen.

2. Erasers

Erasers are used to remove unwanted parts of a sketch, such as small errors or unwanted pencil or graphite marks. These can also be used to blend in some parts of a sketch. Hard plastic or vinyl erasers pick up less pigment and thus stay clean longer.

3. Sharpeners

Sharpeners come in many different kinds. A sharp craft or utility knife is best for sharpening wooden-barreled pencils. Pencil sharpeners, which make a neat point, are best for graphite sticks. In all cases, the blade must be kept sharp for it to work properly.

4. Paper

There are different kinds of paper used for freehand drawings, based on the kind of surface a paper has. Rough paper has a pitted, highly textured surface, and is best suited for bold, expressive works which use charcoal, chalk, pastel pencils and soft graphite. Smooth surface paper, which is also called "hot pressed" paper, is best suited for works which use pen and ink and fine pencil. Smooth surface paper can be used for softly pigmented drawing tools like charcoal and chalk, but the resulting work might not be as good compared to if pen and ink or a fine pencil were used. Medium textured paper, which is also called "cold pressed" or "NOT" paper (meaning not hot pressed), works well with most drawing materials and is the most widely used types of paper for drawings. High-quality paper, which is also called "acid-free," is paper whose acidity is neutralized so it will not become brown or brittle as it ages. Cartridge, or standard drawing paper is the kind most often used for drawing. It can be white, cream or colored and is available in various weights, sizes, and qualities. Paper can be purchased as loose, single sheets or as sketchbooks and pads.

5. Graph paper

Graph paper, or grid paper, is a kind of writing paper with lines printed on it that form a regular grid. The lines are often used as guides for drawing curves and plotting graphs with mathematical functions and experimental data.

Mechanical Drawing

Mechanical drawing is the art of drawing a picture or architectural structure of an object with tools to give precise lines and measurements. Mechanical drawing uses tools such as the T-square, ruler, and compass. Mechanical drawings are used to draw out plumbing, heating, ventilation, and air conditioning plans, as well as electrical, architectural and urban planning layouts. Detailed mechanical drawings, which show such information such as the dimensions of an object, are called technical drawings.

Orthographic projection drawing is another kind of mechanical drawing which uses geometry and projections to draw the different views, such as the top, front and side views, of an object, or machine. If you have seen a drawing which shows the top, front and side views of a house, for example, you have seen an orthographic projection drawing. These kinds of drawings are usually created today using computerized media.

Drawing Techniques

Regardless of what kind of drawing is done, the techniques used are generally the same.

Horizontal lines are drawn from left to right and run parallel to the lower edge of the drawing paper.

Vertical lines are sketched from the top downward.

Inclined lines are also generally sketched from left to right if the artist is right-handed.

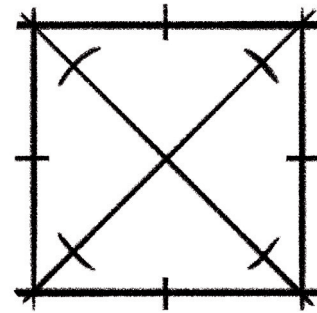
Short lines are drawn by moving only the fingers. Long lines are drawn by moving the arms. That said, long lines can also be drawn in segments, with very small spaces or gaps between segments. Those gaps are so small that, if the drawing is seen from arm's length, the lines appear to be one long single line.

Steps to Create a Sketch

1. Block in the main shape.
2. Locate the shape's features.
3. Draw out guide lines. These are lines which show the outlines of what will be drawn. They are drawn lightly, so these can be easily erased.
4. Sketch straight lines out first, then sketch the arcs and circles.
5. Fill in the drawing with other details as needed.

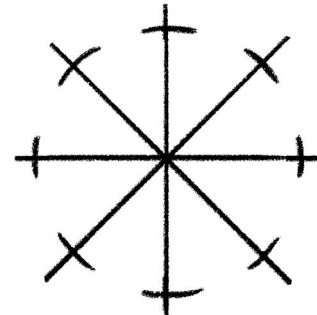
Creating a Circle Method 1: Starting with a square

1. Lightly sketch the square and mark the mid-points of the square's lines.
2. Draw diagonal lines lightly and mark out the estimated radius of the circle on these lines.
3. Draw the circle through the eight points created.



Creating a Circle Method 2: Starting with center line

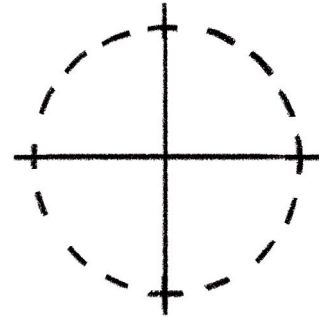
1. Lightly draw a vertical and a horizontal line.
2. Add light radial lines and mark the estimated radius of the circle.
3. Sketch the full circle.



Creating a Circle Method 3: Using paper as a guide

A scrap of paper is used for this method.

1. Place a finger on the paper, where the center of the circle will be.
2. Set the pencil point at a distance equal to the length of the circle's radius on the paper.
3. Keep the finger on the circle center as a pivot, then the paper.



Sketching Curved Lines

1. To draw a section of a circle or a curved line, first draw a straight line. of all, you should draw a line and mark it with radii.
2. Mark the center of the line and the two ends of the line.
3. Mark a point directly above the center and end points of the line.
4. Connect these points forming a rectangle.
5. You can then draw your curved line by connecting the end points and the one directly above the center of the line you first drew.

Sketching Straight Lines

Drawing straight lines for the first time is easy if the forearm is used instead of just the hand or fingers. Moving the drawing forearm by turning it at the elbow helps your drawing hand to make straighter lines.

The easiest way to draw long straight lines in freehand, is to first draw short lines in a row and then connecting these as one long line. The distance between your hand and pencil tip should be no more than your thumb's length. To keep the paper from moving, your hand should rest on its edge. Use the same method to make horizontal lines. You can practice drawing straight lines by air drawing or repeatedly moving your hand and arm as if drawing the in thin air.

You can also draw straight lines using the edge of a paper, or a ruler, as a guide. In this case, your lines will no longer be freehand but is more mechanical.

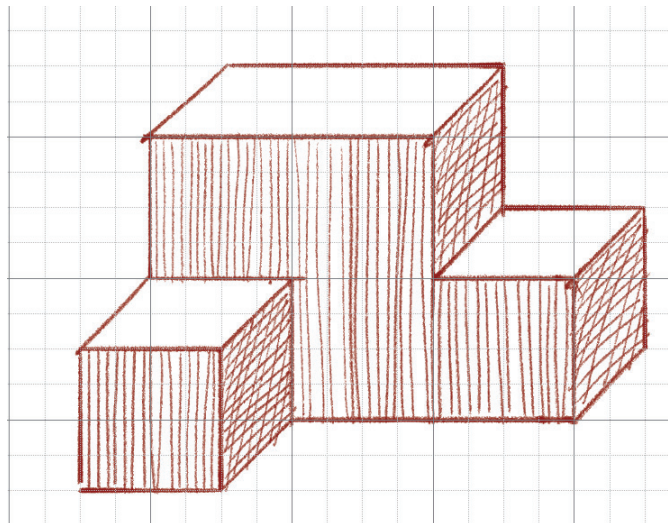
Sketching Rectangles

A rectangle is a common shape. There is more than one way to draw it. The easiest freehand way is by drawing a pair of horizontal lines first, turning the paper so that the horizontal lines become vertical, and then drawing another pair of horizontal lines that connect the first pair.

Oblique Sketching

Oblique sketching uses slanting or diagonal lines that have a single direction to form a three-dimensional shape.

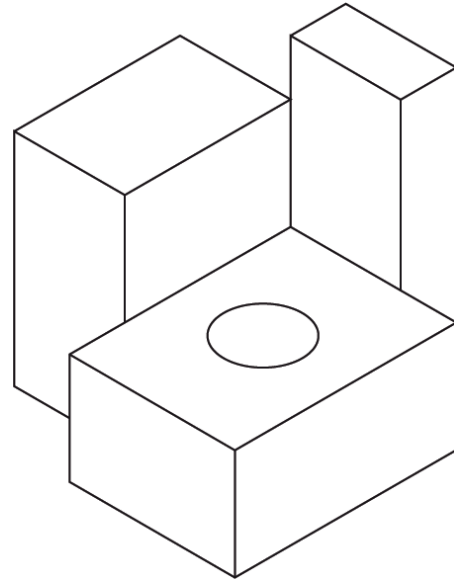
1. Draw the horizontal and vertical lines which border the basic shape of the drawing. This is called “blocking in.”
2. Draw the slanting or diagonal lines.
3. Shade the shape as in the illustration.



Isometric Sketching

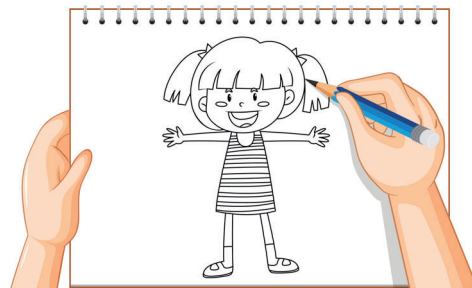
Isometric sketching uses slanting or diagonal lines that go in two opposing directions at an angle of 30 degrees to form a three-dimensional shape.

1. Draw a horizontal base line.
2. Mark a point in the middle of this line. From this point, draw two slanting lines, with one going to the left and the other going to the right. Both should slant 30 degrees from the horizontal base line. These lines will form the base of your figure.
3. Complete the isometric drawing as in the following illustrations.



Outline a Drawing

An outline is a line created or added to emphasize or define the shape of a drawing or sketch. It is used by artists to make their drawings clean and simple. Outlines are also used to create a style of drawing or artwork. This kind of art is sometimes called outline drawing or outline art.



Outlining a drawing begins with a pencil sketch. An initial sketch using a pencil is needed to guide you on how you'll add outlines to your artwork. Afterwards, artists commonly use pens or markers to outline their drawings.



Before making an outline over their drawing, artists identify the size of pen or marker to use. Pens and markers come in different tip sizes that determine the thickness or thinness the line that they can make. Pen tips can range from 0.05 mm as the thinnest size to 0.7 mm as the thickest size, while marker tips can range from 0.2 mm to 50 mm.

Aside from sizes, markers and pens have also different types or shapes, which also affects how an outline will appear on drawings.

Markers can differ from how their tips are shaped. Examples are:



- Chisel tips are slanted, which can create thin or fine and broad lines.
- Bullet tips have a rounded edge, which can draw smooth lines.
- Brush tips are quite similar to a paint brush. A brush-tipped marker has the ability to create a thin or thick stroke depending on the amount of pressure applied to it.
- Specialty tips are markers that can create design through lines.
- Dual tips are markers that have different tip shapes on each end.



Pens, on the other hand, also vary on how they are made. Examples are:



- A fiber-tipped felt pen is made with porous material filled with ink, which is hard yet slightly flexible. The way its tip is shaped makes it possible to draw lines through its sides.
- A plastic tip pen can create smoother lines than a fiber-tipped felt pen. This is because the plastic helps seal the ink in the tip, helping the pen to have better control on the size and smoothness of the line.
- A pen with a plastic tip inside a metal casing is another kind of pen, which are described to have very small and porous tips.
- A ball point or rollerball pen is so named because it has a metal ball at the very tip of the pen point; the ball draws lines on the paper while getting ink from the tube. Ball point pens are made with oil-based ink, which lasts longer, while rollerball or gel pens are made with water-based ink, which has smoother application and require less pressure when used.

The thickness and thinness of lines also vary depending on the amount of pressure or force you put on the pen or marker. This means that the stronger you press the pen or marker on the paper, the thicker the line will be.

Applying different thickness or thinness of outlines is also a technique to add design or style to drawings. Seeing various sizes of outlines adds impact to an artwork. Artists use this technique to highlight details of their drawings.



How to Create an Outline Drawing:

1. Create a light sketch of what you want to draw.
2. After you've finished your pencil sketch, get a pen or marker. Remember that the thickness or design of the outline will depend on the tool you're going to use.
3. Then, calmly trace the edges of the sketch. Focus on the part that you want to outline. Tracing your drawing with a permanent ink can be scary, but that's the challenge. You don't have to begin with a perfect output.
4. Last is to erase the pencil sketch with an eraser.

Shading

Shading is a principle of drawing that makes a drawing look more alive or realistic by adding depth. Artists add depth to a drawing by using straight lines, curvy lines, dots, or even patches of color to darken or lighten a part of the drawing.



Except for black and white, every color has a certain amount of lightness or darkness to them. This is called the color's tone, or tonal value. Shading can be done using different tones of the same color.

Watch this video to have a clearer idea how shading works:

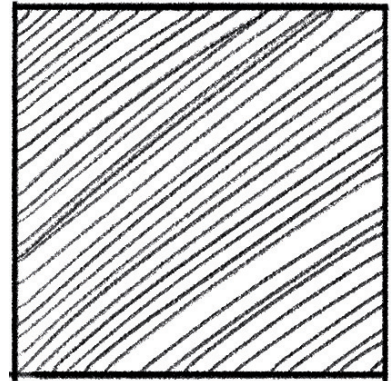
How to Shade with Pencil for Beginners (<https://www.youtube.com/watch?v=-WR-FyUQc6I>)

Shading Techniques

There are different techniques that you can use in shading. Each shading technique adds its own unique effect to the drawing, but are all effective in creating and adding depth to drawings.

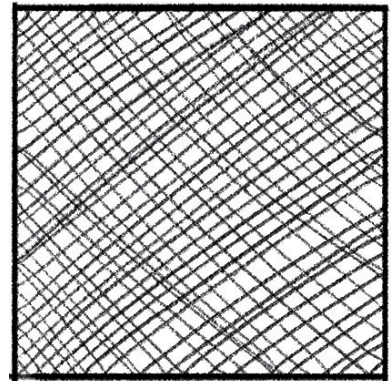
1. Hatching/Parallel Hatching

This shading technique is described as using vertical, horizontal or slanted lines to create the illusion of depth. For it to be considered as parallel hatching, lines should be straight and slightly far apart.



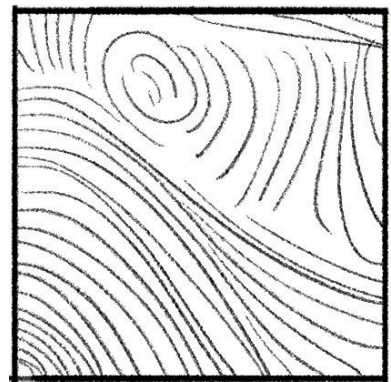
2. Cross-hatching

This technique is similar to parallel hatching. What's different in this shading technique is that lines do not go in the same direction, but cross over one another. For example, if you create a group of vertical lines over a group of horizontal lines, that's what you call cross-hatching. Lines come from opposite directions, which helps in creating levels of lightness or darkness of shade.



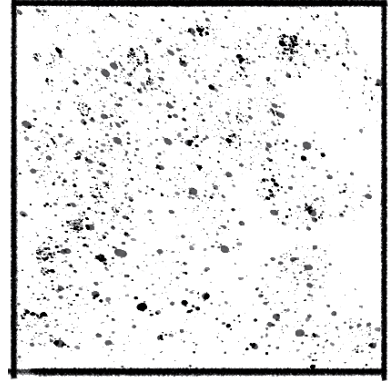
3. Contour Hatching

This is described as using curvy lines that follow the shape of the drawing to build depth. When using this technique, the image of a three-dimensional drawing should be imagined. If not, it might only resemble a design or pattern, because this technique is trickier compared to parallel and cross-hatching.



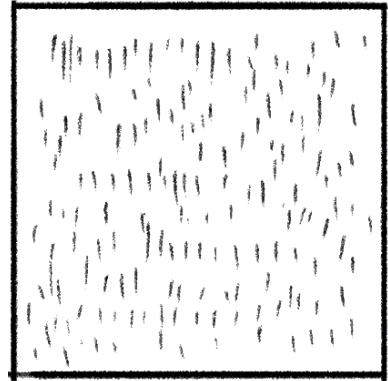
4. Stippling

Stippling is a shading technique that uses dots to create depth on a shape. The key in using dots to create depth or tone is to control the spaces between dots. This means that areas of the drawing with loosely-spaced dots will appear lighter, while areas with closely-spaced dots will appear darker.



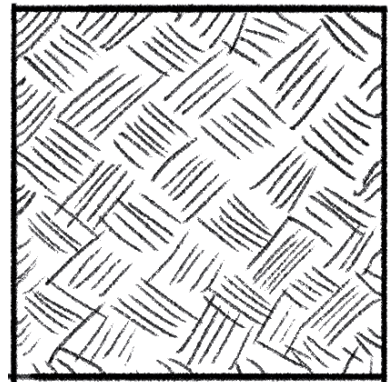
5. Tick Hatching

This technique is quite similar to stippling, However, instead of dots, it uses short lines. This technique can be used to draw hair or fur.



6. Woven Hatching

Woven hatching is another tricky shading method, but if done properly, the result is interesting to see. This technique uses shorter parallel lines where a group goes to one direction, while the other is slightly on the opposite direction of the first group of lines. It's like how the lines on a "banig" or floor mat, or other kinds of woven material are arranged.



7. Scribbling

This technique uses swirly lines to create details or depth to a drawing. This is effective in drawing trees, leaves, or adding texture to your sketch.



Hand Lettering

Hand lettering or lettering is the art of drawing letters. The goal of it is to illustrate letters or words that is decorative, or different from how they look in normal writing.



Examples of lettering you can practice and make:

How to Draw Bubble Letters

<https://www.youtube.com/watch?v=2qqmctkfVSA>

How to Draw 3D Letters

<https://www.youtube.com/watch?v=u-LcJU3WCs0>

How to Draw Block Letters Alphabet

<https://www.youtube.com/watch?v=0oOicMwjLpQ>

Essential Tools and Materials in Hand Lettering

- Pencil
- Eraser
- Ruler
- Paper
- Pens or Markers
- Coloring tools



SUMMARY

Freehand drawing is one of the fastest ones around, and tools aren't used to create these. Mechanical drawing uses tools to give precise measurements of what is being drawn. There are several techniques available to draw circles and lines. Isometric and oblique drawings are two different types of mechanical drawings.



EXERCISES

Exercise 1

How much have you learned?

Choose the letter of the correct answer.

1. Which of the following defines freehand drawing?
 - a. Freehand drawing is about drawing without using tools.
 - b. Freehand drawing is about drawing using computer aided tools.
 - c. It takes a long time to prepare the tools needed for freehand drawing.
 - d. The tools used in freehand drawing are expensive.
2. This is all about expressing and communicating an idea.
 - a. freehand drawing
 - b. art
 - c. technical drawing
 - d. freehand sketching
3. A _____ is drawn from the top to the bottom of the drawing sheet.
 - a. curved line
 - b. oblique line
 - c. vertical line
 - d. horizontal line
4. This is a form of expression created by using a canvas.
 - a. Painting
 - b. Graffiti
 - c. Sketching
 - d. Technical drawing
5. White, cream or colored paper which can be used for drawing is also called _____ paper.
 - a. Oslo
 - b. cartridge
 - c. rough
 - d. cold-pressed
6. What is the purpose of graph paper?
 - a. The gaps formed by the lines allow the artist to visualize the object to be drawn.
 - b. The lines can be used as guide to draw curves.
 - c. The lines on the paper lead lines to the edge of the paper.
 - d. The lines on the paper guide prevent sketching from left to right.

7. Which of the following statements refer to horizontal lines?
 - a. These run parallel to the lower edge of the drawing paper.
 - b. These are sketched from the top downward.
 - c. These use guidelines.
 - d. These are drawn through eight points created.
8. A ruler, or the edge of a paper, can be used as a guide to create this.
 - a. circle
 - b. straight line
 - c. arc
 - d. rectangle
9. This type of drawing shows information such as the dimensions of an object.
 - a. freehand
 - b. artistic
 - c. technical
 - d. painting
10. This kind of drawing uses geometry and projections to draw different views of a part.
 - a. orthographic
 - b. freehand
 - c. artistic
 - d. sketch

Exercise 2

Enumerate the following.

1. Drawing tools and instruments used for freehand sketching
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____
2. Steps to create a sketch
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____

3. Types of straight lines

- a. _____
- b. _____
- c. _____

4. Kinds of mechanical drawing

- a. _____
- b. _____

Exercise 3

Identify what is being described in each item.

- _____ 1. _____ is the line that emphasizes or defines a shape of a drawing.
- _____ 2. To apply outline, you must first create a _____.
- _____ 3. Markers are made with different tip sizes and _____.
- _____ 4. Aside from tip sizes, pen _____ also affects the thinness and thickness of lines.
- _____ 5. The method of creating depth in drawing using lines, dots or swirls.
- _____ 6. This is the art of drawing letters.
- _____ 7. A shading technique that uses dots.
- _____ 8. A shading technique that can create leaves of trees.
- _____ 9. Quite similar to parallel hatching.
- _____ 10. Uses short lines to create shade.



LESSON OUTPUT

Refer to, and submit, an image file of an actual drawing (freehand or mechanical) and explain, in a slide show, the techniques and tools that were used to create it. You will be rated based on the overall evaluation.

Lesson Output Rubrics

CRITERIA	5	4	3	2	1	POINTS
1. Content/ Functionality	The student presented an image file which the student made on his or her own. Explanations were given on what kind of drawing it is, as well as some of the tools and techniques used.	The student presented an image file. Explanations were given on what kind of drawing it is, as well as some of the tools and possible techniques used.	The student presented an image file. The only explanations consisted of what kind of drawing it is (freehand or mechanical – and type of mechanical drawing).	The student presented an image file. No explanatory comments or insights were provided.	The student did not present an image file.	
2. Creativity	The student's output made use of unconventional media and materials which made it pleasing to look at.	The student's output used common media used creatively but still made the content easy to understand.	The student's output was artistic but not clear in delivery.	The student's output was plain yet only a few things were easy to understand.	The student did not attempt to be creative in any way in delivering the content of the project.	
3. Promptness	The project was completed two or more days ahead of the given deadline.	The project was completed a day ahead of the given deadline.	The project was completed by the given deadline.	The project was completed a day after the given deadline.	The project was completed two days or more after the given deadline.	

TOTAL

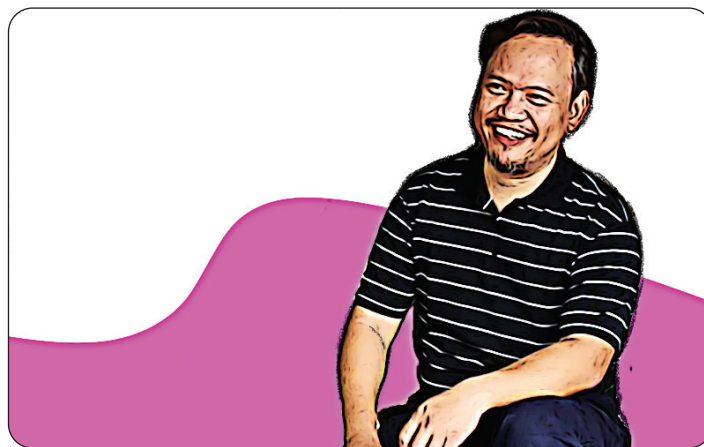
Lesson 4

Recycled Art

TRIVIA

There is a Filipino artist named Gilbert Angeles who creates paintings using plastic waste. With the use of his talent, he was able to turn his projects into a moneymaking activity; a part of his earnings goes to a group of people who likewise loves art and cares for the environment.

His goal for his paintings is to send a message to his countrymen about the country's problem on plastic waste.



LESSON OUTCOMES

1. Identify essential tools in making recycled art.
2. Learn different types of artworks made from wood, ceramics, boxes, tin cans or any recycled materials.
3. Create an original artwork made from wood, ceramics, boxes, tin cans or any recycled materials.



ENGAGE

Be inspired in creating art from recycled materials through this video:

The Green Artz Movement, Greening through Arts

<https://www.youtube.com/watch?v=o23YDIN-oLE&t=29s>



EXPLORE

Select the correct letter for each item.

- _____ 1. Recycling means _____.
- a. creating items from used materials
 - b. sorting wastes
 - c. collecting new items and changing them into something else
 - d. selling used items
- _____ 2. Which item is not recyclable?
- a. battery
 - b. pencil
 - c. cardboard
 - d. clothes
- _____ 3. Which material can create a pencil/pen holder?
- a. plastic sachet
 - b. plastic bag
 - c. tissue holder
 - d. CDs/DVDs
- _____ 4. Which of the following cannot happen through recycling?
- a. save the environment
 - b. generate profit
 - c. preserve cleanliness of surroundings
 - d. none of the above
- _____ 5. How can you begin in recycling?
- a. do waste segregation
 - b. collect recyclable materials
 - c. gather information on how to recycle
 - d. all of the above
- _____ 6. Which tool is essential in making recycled art using plastic bottles?
- a. needle and thread
 - b. kitchen knife
 - c. scissors
 - d. bobby pins

- _____ 7. Which tool combines materials together?
- a. hammer
 - b. adhesive
 - c. shears
 - d. paint
- _____ 8. Which tool should you use to add colors to your recycled project?
- a. hammer
 - b. adhesive
 - c. shears
 - d. paint
- _____ 9. Which of the following is not a recycled art?
- a. water color painting
 - b. mosaic art made from CDs and DVDs
 - c. basket made from paper
 - d. cabinet made from cardboard and old clothes
- _____ 10. Which tool should you use to draft designs for your recycled art project?
- a. scissors
 - b. paint
 - c. pen/pencil
 - d. tape or glue



RESEARCH

Look for (5) examples of recycled art made from recyclable materials such as wood, ceramics, tin cans, boxes, etc.



EXPLAIN

recycled art - refers to turning trash to something useful or creative.

The Philippines ranks third in the world's major contributors of plastic waste. Improperly-disposed waste frequently clog drains in many places, making us one of the countries that regularly suffer severe flooding during typhoons or even regular monsoon rains. Aside from that, bodies of water like beaches, rivers and ponds are becoming more and more polluted by plastic waste, among other harmful materials. Plastic waste is not easy to eliminate, same with other dry wastes, but people can take steps to help lessen the damage it is causing to the environment by reducing our use of plastics, especially single-use ones, or recycling them into useful items. So, in this lesson, let's learn how to use recyclable wastes that we can find in our house or in the community to help the country solve its problem on waste.

Tools Essential in Making Recycled Art

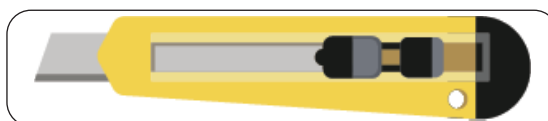
Scissors and Shears are tools for dividing or cutting materials or components of a recycled art project.

Shears are a larger and heavier cutting tool than a scissor, and is often used to cut hard or thick materials.



A **cutter** is a knife-like tool that can slice through items like cardboard boxes, illustration boards, plastic bottles, etc.

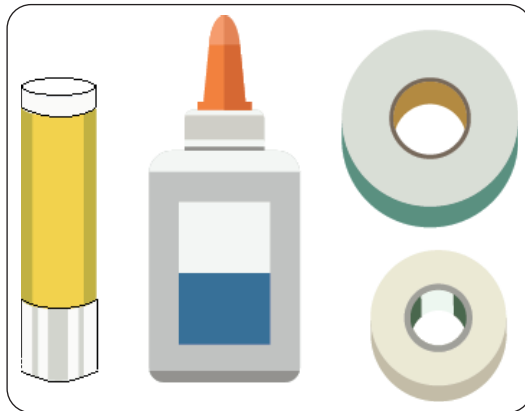
What differentiates a cutter from a scissor is that a cutter can be used to cut and trace a pattern on a material.



A **glue gun** is an electric tool used to melt and dispense a solid adhesive called a **glue stick**.



An **adhesive** is any substance or material that is used to stick things or makes things stick together. The different kinds of glues are liquid or semi-liquid adhesives. Adhesive tapes have a sticky substance coating one side of a roll of paper or plastic.



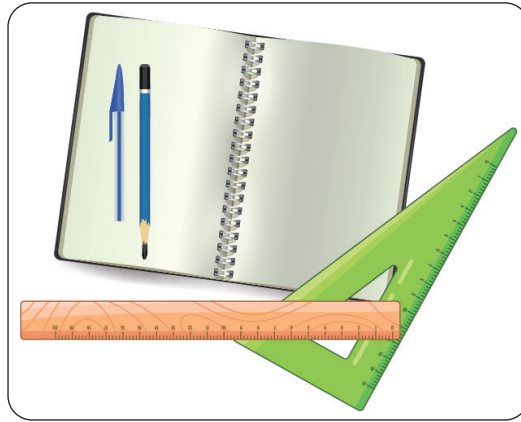
Paint, paintbrushes, and paint spray cans are used to add color to a project.



Pencils and **pens** are used for drawing patterns or guides on materials.

Rulers are used to measure objects, as well as drawing lines.

A **sketchbook** is where you draw and collect sketches or sample designs for your recycled art project.



Safety Precautions

When making art projects like recycled art, the materials being used for the project should be handled properly in order to avoid accidents. Read and follow these safety rules before doing the activity.

1. Always keep all your materials in one place. Don't leave them scattered around for someone to step on and cause injury.
2. Make sure that pointed and sharp tools like pencils, pens, and scissors have a safety cover or are stored in a safe container.
3. Don't inhale paint fumes. When painting, open the windows and the door of your workroom to let fresh air inside the room or work outdoors.
4. Don't eat or drink while working on art projects. Have a separate area for eating or drinking.
5. Never play with your tools and materials. Art materials like paint can have harmful chemicals that can be poisonous or cause skin irritation.
6. Also, be extra careful in handling recyclable materials such as, wood, CDs/DVDs, tin cans, and ceramics, because they may have pointed edges.

Materials for Recycled Art

Wood

This material is sturdy and hard. This can be difficult to cut using only scissors and shears. A cutting tool meant for wood should be used.

Example of recycled wood art/craft you can re-create:

- DIY Craft Using Waste Pencils
<https://www.youtube.com/watch?v=P5hiWUEkcJU>



Carton Box/Cardboard

This kind of waste may come from different sources, such as new appliances, supermarkets, and even online sellers. If you have this at home, don't throw away them yet. You can still use them and make it to something useful similar to this:

- Turn a carton box into a storage box
<https://www.youtube.com/watch?v=-m4LU5EvXSs>



Plastic bottles

Plastic bottles are difficult to replace as packaging for beverages. Replacing them with glass bottles will make products expensive and heavy to bring.

Two ways we can help decrease number of plastic bottles in our surroundings are to bring our own drinking bottles or turn them into something you can use at home.

- DIY Crafts you can do with plastic bottles:
<https://www.youtube.com/watch?v=edXimuzIVhk>



Plastic sachets/product wrappers

Similar to plastic bottles, plastic sachets are often used as packaging for food products like snacks, candies, breads, etc. They make up a large majority of the trash found on land and in water.

Let's think of a way to combat this problem. There are ways and one of them is this through this video.



- Learn how to make money with plastic sachets through this video:
https://www.youtube.com/watch?v=_7IlbLmB7OM

Newspapers, Magazine, used papers

Papers, newspapers and magazines are also common waste in households. There are also many ways to turn them into new items or decorations in the house.



Examples are:

- Handmade paper:
<https://www.youtube.com/watch?v=sHbk9UAAXGE&t=5s>
- Origami lucky star tutorial
<https://www.youtube.com/watch?v=A5ThJl28GZo&t=37s>
- Paper Quilling:
<https://www.youtube.com/watch?v=fCTtpImMwmng>

In Business

Making money through recycling can happen if you know how to re-create used materials to be useful again. When planning to make a recycled item or art, think how its going to help someone or how they'll become interested to buy it. For example, turn boxes to organizers, plastic sachets to bags, and plastic bottles to ornamental pots.



EXERCISES

Exercise 1

True or False?

- _____ 1. Used papers, plastic bottles, carton boxes can become recycled art.
- _____ 2. Recycled art refers to using old items.
- _____ 3. Glue gun is a tool for cutting materials.
- _____ 4. Adhesive refers to tools used for combining materials together.
- _____ 5. Making a recycled art project is expensive.
- _____ 6. There are many ways to turn recyclable wastes to useful items.
- _____ 7. Recycling helps lessen impact of waste on the environment.
- _____ 8. Plastic waste has no impact on the environment.
- _____ 9. There is money in trash. You just need to find a way to make them useful or entertaining to see.
- _____ 10. A way to lessen number of waste is to re-use or re-create items, instead of shopping for new items.



SUMMARY

Recycling or making recycled art is a hobby you should learn. It's an inexpensive hobby aside from the few pesos you might need to spend on tools and other supplies to make the project useful and interesting. What's great is that you can even make some money from your project. There are a lot of video tutorials that can teach you several things you can create using trash.



LESSON OUTPUT

Make a 2D or 3D recycled art using any recyclable materials you can find at home or in your community. Include a sketch of your original design. Place your output on a 1/8 illustration board.

Lesson Output Rubrics

Objectives:

- Make a 2D or 3D recycled art
- Include a sketch of your original design
- Use a 1/8 illustration board

CRITERIA	5	4	3	2	1	POINTS
1. Content/ Functionality	All 3 objectives for the activity were met.	All 3 objectives for the activity were met but were not exactly as instructed.	Only two of the objectives for the activity were exactly met.	Only one of the objectives for the activity was exactly met.	None of the objectives for the activity was met.	
2. Creativity	The design of the output is unique and the materials used are visually appealing.	The student showed adequate creativity through the chosen materials and design of the output.	The student showed a fair level of creativity with the additional decorative elements.	The student showed some creativity in the design and chosen materials for the output.	The student did not show effort on the output he/she submitted.	
3. Promptness	The output was completed two or more days ahead of the given deadline.	The output was completed one day ahead of the given deadline.	The output was completed by the given deadline.	The output was completed one to two days after the given deadline.	The output was completed three days after the given deadline.	
TOTAL						