



Lesson 1: - Explorer

Peg Keiner

Who is she??

❖ Peg Keiner is from Chicago in the United States.

❖ She is: -

- 1.a Global Goals Ambassador for the United Nations Association Chicago Chapter
2. a National Geographic Explorer.
3. She is also the Director of Innovation at a school in Chicago

COVID-19 pandemic in 2020,

While she was walking around her neighborhood. She noticed there was a lot of litter from COVID PPE (personal protective equipment)

What are the personal protective equipment?

❖ such as facemasks and disposable gloves

What does Ms. Keiner make to help spreading awareness of the dangers of litter?

1. Ms. Keiner took a photo of the litter and record where she found it.
2. She used an app called the Debris Tracker,
3. She describes the kind of litter (paper, plastic, etc.).
4. She uploaded the location and the description of the items every time she saw PPE litter.

Debris Tracker:

1. it's an app that you can download for free
2. Recorded the location with GPS

How collecting data done?

Ms. Keiner wasn't collecting litter data alone. But of the help of her educators on the impact of different types of litter on the environment

She teaches them to use the Debris Tracker, and they collect data on litter and analyze them.

Ms. Keiner used the hashtag #trackingppe: -

On Twitter and Instagram, and piloted social media campaigns to encourage followers in 60 countries to collect PPE debris and data

The data uploaded by Ms. Keiner, her colleagues, and her followers are in the form of:

1. GPS map locations
2. infographics showing the different kinds of debris.

The importance of all of this is:

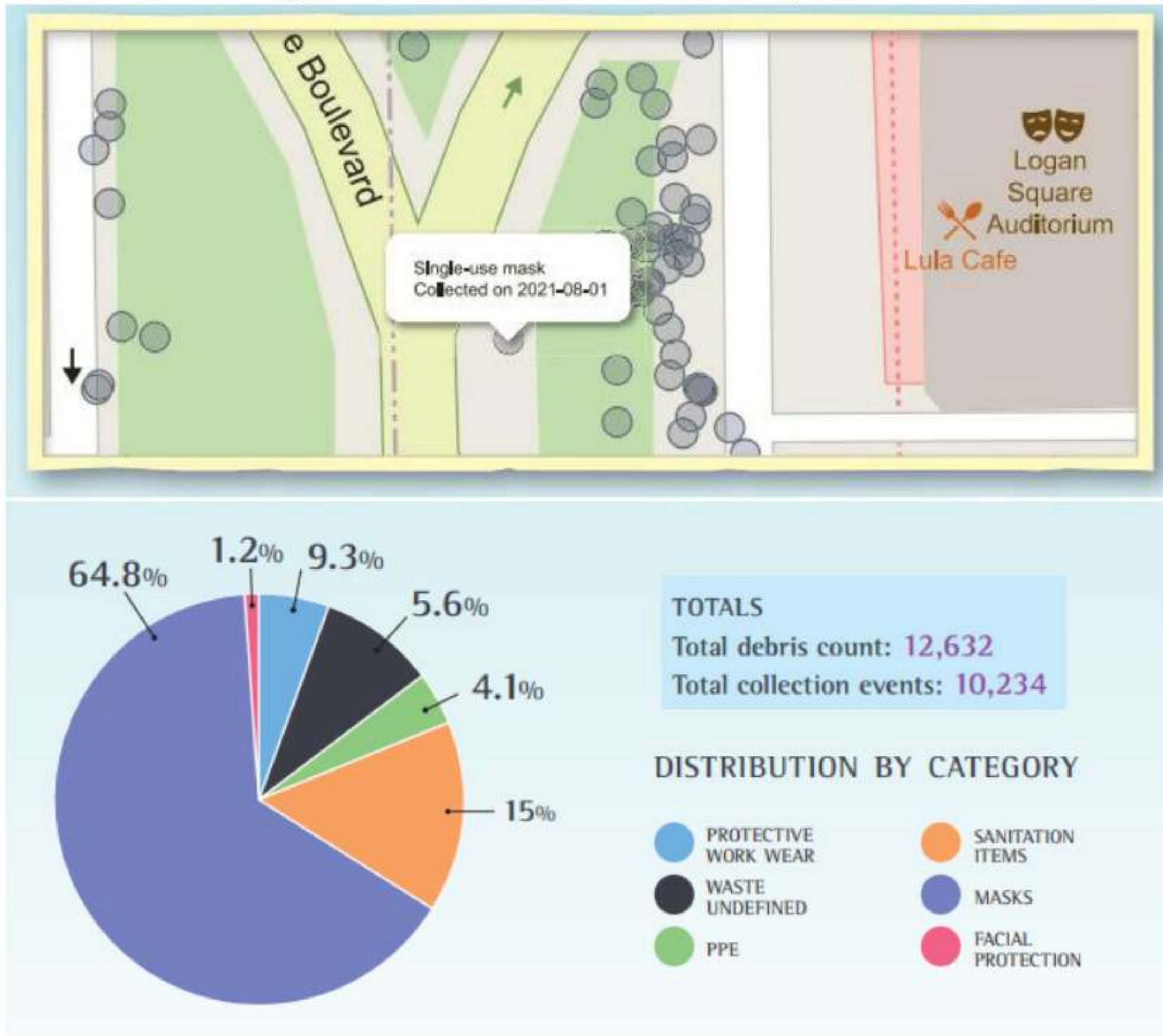
The data was analyzed, and the results, were used by researchers to request change.

Social responsibility is the basis on which the Egyptian Ministry of Environment started an initiative in 2019.

The "Go Green" initiative Goals:

1. is part of the **National Sustainable Development Strategy**, "Egypt 2030."
2. It covers 36 environmental issues
3. encourage a more responsible attitude toward plastic waste and other debris.
4. spreads awareness of environmental issues and emphasizes each citizen's role in protecting the environment and natural resource

The Debris Tracker application collects data. The user can view and gather the data on a spreadsheet that includes the location, the material type, its date, its name and then display each type on the map as a blue dot. The data can also be viewed as a pie chart or a bar graph. The data is stored on the Debris Tracker website and is available for anyone to download and analyze.



Lesson2: - Digital citizenship and social responsibility

Rights:

- privacy
- protection from piracy
- ability to engage with others online
- provide and access information online
- ability to use the internet when you need to.

Responsibilities:

- respect others' privacy
- respect various sources
- exhibit positive behavior in interactions with others
- ensure safe sharing online.

Social responsibility: -

- ☞ Peg Keiner uses social media to spread information about how to safely get rid of the problem of PPE in the environment.
- ☞ **You can use your social responsibilities**
 1. to help others via social media,
 2. to contribute in social activities that help solve social issues (like improving health care, fighting pollution and the factors affecting climate change)
 3. Express your opinions in a positive way.
(How to communicate with people in person, and how to respect their opinions.)
 4. You may have information sources like videos or articles, about a cause.
(Be sure that they are accurate and easy to understand.
Don't spread false information.

5. Make sure the information you share are clear.
(Being socially responsible includes being mindful of the websites you use. (If a site is spreading false or harmful information, stop visiting that site)

Corporate social responsibility Companies (CSR).

(CSR) using the internet to help others, by addressing environmental concerns or supporting important causes.

Lesson3: - Online communication

communicating online with a teacher

1. be polite and respectful,
2. use titles, as, Mr., Mrs., or Dr.
3. Avoid making jokes.

haven't met the person you're writing to yet,

1. be sure to introduce yourself.
2. Be clear about what your message is about.
3. State your reason for sending the message up front.

classmate you don't know well,

1. be sure to use their full first name.
2. Don't abbreviate or use nicknames.

a friend or family member

1. be more casual in tone
2. be respectful.

Remember: -

when you are: -

on a video call, your emotions will be visible to everyone,
on written messages feelings are more difficult to convey

Think about this as you send your communication

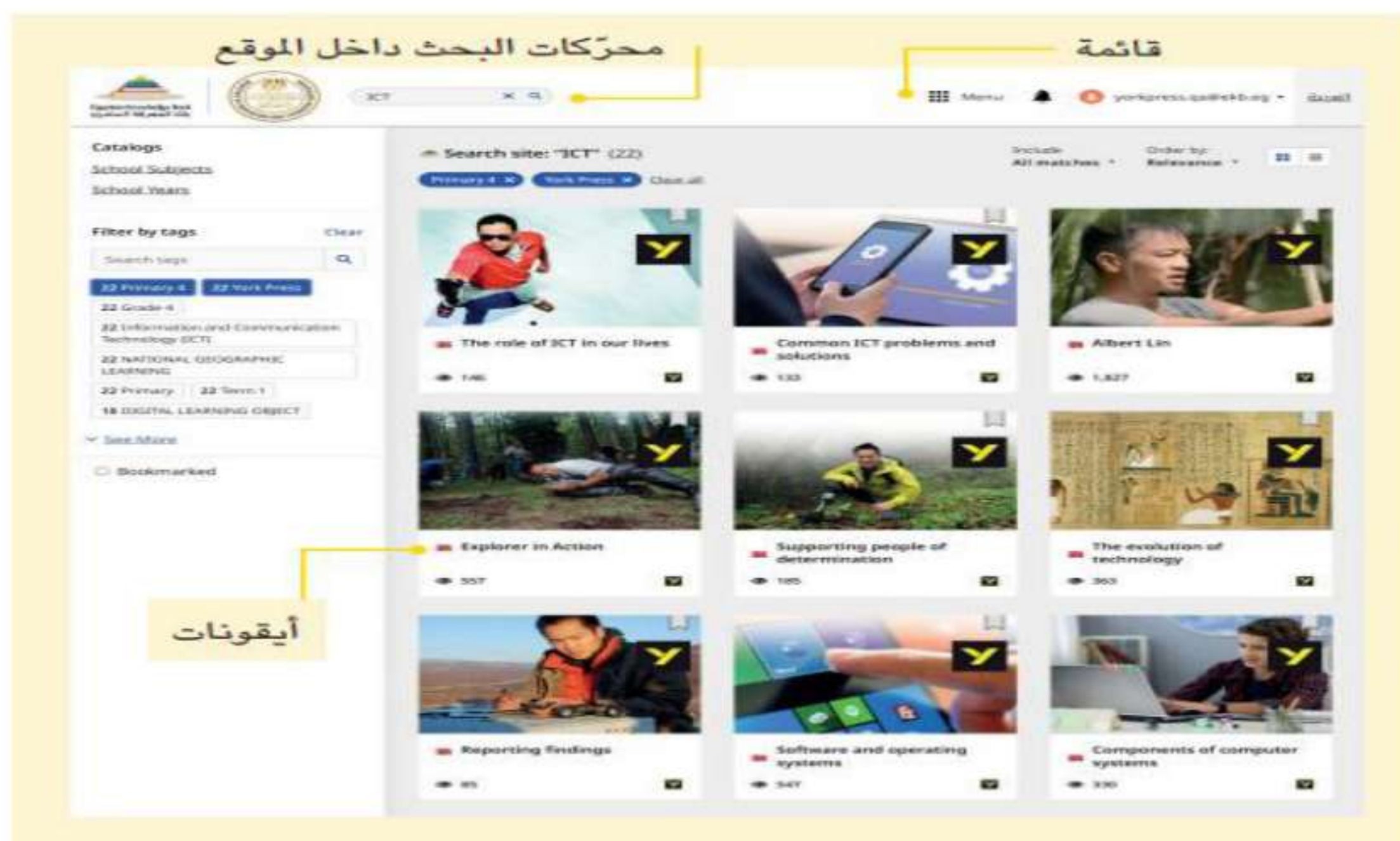
Nonverbal communication is lost and meaning can be misinterpreted negatively because it does not explain tone of voice, gestures, posture, and eye contact, So...

How to communicate online positively?

1. **Use positive words**: Set a positive tone with words such as can and will. Avoid negative words such as can't, won't
2. **Be conversational**: Add warmth with words, and your sentence structure.
3. **Use emojis**: Emojis add tone and emotion. it's usually safe to use one or two positive emojis.

Begin and end with positive phrases: Use friendly or encouraging phrases such as I like your ideas for our project

Lesson 4: - Information websites



The Alexandria Digital Library, and the Egyptian Knowledge Bank are examples of reliable online libraries They offer: -

- collection of online educational resources, including articles, dictionaries, encyclopedias and books, and video, audio, and interactive files
- files can be downloaded to your device
- content suitable for all ages
- safe and accurate sources
- free access for all Egyptian citizens
- material that is subject to copyright

The features of Helpful websites: -

1. Search engines inside the website provide results based on what you type in the field.

The EKB and ADL content have specialized search engines.

2. Menus also help you to find information.
 - help to avoid scrolling and spending too much time looking for general information.
 - They include clear titles and content information.
3. Icons can be clicked to reach other sections or webpages.
4. Contact and About fields are easy to find so visitors can contact or

learn more about the people involved in a website.

Website Creation

Software programs like WordPress are used to create websites.

☞ When you start creating your website, you can choose a **blank template** or choose one of the **software's pre-loaded templates**.

Once you choose a template to work with, you will be able to access free design tools to create your website.

Note: When creating a website, be sure to consider the photos and videos, and font size/type.

1. Website's title and a tagline (While creating a website)

General Settings

Site Title

Tagline

In a few words, explain what this site is about.

2. Design your homepage

My website 0 + New

Dashboard
Posts
Media
Pages
All Pages
Add New
Comments

Pages

Add New

All (2) | Published (1) | Draft (1)

Bulk Actions
Apply
All dates
Filter

☐ Title
☐ Privacy Policy - Draft, Privacy Policy Page
☐ Sample Page

3. Add menus for easy navigating.

My website 0 + New

Dashboard
Posts
Media
Links
Pages
Comments
Appearance
Themes
Customize
Widgets
Menus
Header
Editor

Menus

Manage with Live Preview

Main menu has been updated.

Edit Menu
Manage Locations

Edit your menu below, or [create a new menu](#).

Pages

Most Recent
View All
Search

☐ About

Search All
Add to Menu

Lesson 5: - Commercial and non-commercial internet services

Websites are either Commercial or Non-Commercial.

1. Commercial websites

- a) The purpose: - is to sell products or services.
- b) An example: - Amazon.

2. Non-Commercial websites

The purpose: - is to provide information or raise awareness on an issue.
an example: - The Egyptian Knowledge Bank.

- ❖ Be wary of fake reviews
- ❖ customer reviews: - often included which can be helpful to both the business and the customer.

Reviews help customers decide if they want to buy a particular product or not

*Reasons of fake reviews

- 1. Beware of comments and ratings as they are usually written by the company itself or their relatives in order to promote the company's products.
- 2. a rival business will post negative reviews under a false name on their competitors' sites to prevent customers from making a purchase.
- ❖ Some reviews may not be fake, but they may be misleading. A review that's overly positive or negative shouldn't be trusted.
- ❖ Getting information about a product.
 - 1. Via reviews
 - 2. via advertisements.

Some sites know the things that you repeated or watch it in frequent, so by the algorithm, Sites begin to present you advertisements to a similar products.

Lesson 6: - Using ICT for content creation

Microsoft Edge is the web browser that comes with Microsoft Windows.

Goal: - help you browse, search, stream and more.

The Collections feature: - organizes research in one place and on multiple devices.

- ❖ You can start a collection for each new project.
- ❖ each collection you can add entire web pages.
- ❖ you can also add individual videos, images (including charts and graphs), text, links and notes.
- ❖ You can also export each collection to other apps such as Excel and Word.

To start a collection

- Select Collections on the toolbar.
- Select Start a New Collection.
- Type the title of your collection in the box.
- Add content by selecting Add current page.
- Drag an image into the collection.
- Select text or links and drag them into a collection.

Writing help- Microsoft Editor

Use it to check for spelling and grammar.

The editor will highlight problems such as capitalization errors, sentence fragments and missing or incorrect words and punctuation then make a suggestion to correct each error.

You decide whether to accept or ignore each suggestion

- Select the **Editor icon** in Word's toolbar, or in the browser, to review possible grammar and spelling errors to improve clarity, formality, and conciseness

Lesson 7: - How to choose online sources

SOURCES FOR RESEARCH

1. ONLINE LIBRARIES

- Online libraries sometimes include dictionaries, thesauruses, and encyclopedias.
- Not all sources posted there are verified or accurate.
- Online libraries such as the Alexandria Library and the EKB have secure information.

2. ONLINE MAPS

provide us with clear and accurate directions to places such as Google Maps.
Google Maps it considered accurate and are regularly updated

3. ONLINE MUSEUMS allow you to view museums digitally, also include information about each museum.

4. SPECIALIZED SEARCH ENGINES

such as Google or Bing are very useful.
use appropriate keywords to find your results

- Be careful, those engines may lead you to unreliable pages or unsafe pages

5. A WEBSITE'S META INFORMATION

- Websites include meta information, such as keywords, information about the site, and what it contains.
- When you search and get results, the information that is below each link is the meta information for the site. This allows you to read more about the site before clicking on the link.
- the bottom of websites, include information such as a copyright notice, logo, contact information, and social media icons.

• **Lesson 8: - choosing between synchronous and asynchronous communication**

	<u>Synchronous</u>	<u>Asynchronous</u>
1	real-time communication between people in the same time	does not occur in real time and does not occur in real time
2	Ex as video chats, live television shows, and instant chat rooms	email, voice and text messages and recorded videos
3	useful when you are writing about a lighthearted	useful in serious matters with someone you don't know well or with someone in authority

-
- **Rules should be respected while communication**
- **Be polite.** Beware of your tone even if you're upset. don't bother anyone.
- **Be patient.** Wait for responding to your messages even if it's your friend. wait before sending another message
- **Be helpful.** If anyone need help with online communication, share what you know.
- **Be clear.** be sure your message is clear. Try not to make when communicating online.

• **Abbreviation: -**

- ☞ **COVID PPE (personal protective equipment)**
- ☞ **Corporate social responsibility Companies (CSR).**
- ☞ **EKB: -the Egyptian Knowledge Bank**
- ☞ **ADL: - Alexandria Digital library**

Lesson 1: - Explorer in action



(Dr. Diego Ponce de Leon)

- ☞ National Geographic Explorer
- ☞ Dr. Diego holds a **PhD** from the **Energy and Resources Group**, University of **California** Berkeley.
- ☞ He uses remote sensors to improve energy efficiency

**** He develops using technology to build renewable energy-related data infrastructure and systems.**

These data systems allow him: -

1. **to collect data on power grids** to improve the power system
2. **reduce energy waste.**

Recently, the world Made a lot of progress in Switching from **power generation** to using both **wind** and **solar** energy instead

How energy is generated?

power generated by **fossil fuels** derived from **coal**, **natural gas**, and **oil**.

Energy efficiency is important So, how Dr Leon work helps devices work efficiently?

1. Connecting all the refrigerators and air conditioners together by a thermostat
2. programming a computer to monitor and control them.
3. He used sensors to monitor the appliances
4. he used his knowledge of software to program the air conditioners and refrigerators in a new, energy-efficient way
5. He used the sensors to monitor how much energy the refrigerators and air conditioners used throughout the day
6. He was able to balance the power grid by moving and storing the electricity from one place to another so that the amounts are more equal

Thermostat is: - a switch that measures temperature in air conditioners and refrigerators

Sensors are: - a device which communicate information back to a computer

Using technology to collect data is crucial in planning for the future

Notice: - a Raspberry Pi 2B is a small, inexpensive computer

Also, it is a simple computer that you can program it to: -

1. turn lights on and off
2. read sensors
3. record data.

Also, you can plug in a keyboard, monitor, and mouse to this very small computer to begin coding it.

Lesson2: - How digital devices work

Tips when deciding to install software

1. INSTALLING SOFTWARE: -

like Microsoft Office versions and Google Chrome, they are downloaded from the internet

☞ Windows PC:

- A. Find the program online.
- B. Click the download button.
- C. Click on the file, located in Downloads.
- D. A box will pop up.
- E. Follow the instructions to finish the installation process.

☞ Android device:

- A. Tap on the Apps icon.
- B. Go to the App store (Google Play).
- C. Find the app you're looking for and click install

2. UPDATING SOFTWARE: -

Software programs need to be updated to run efficiently and some updated automatically.

☞ Windows PC: Some major updates require a restart. Windows will prompt you when this is the case.

To manage updates

Start button -> Settings -> Update and Security -> Windows update.

☞ Android device:

System -> System Update.
there updates that still need to be installed.

Tap on the icon and follow the instructions to install the necessary updates.

3. Troubleshoot screen freezes

☞ Windows PC: Press and hold the "Ctrl," + "Alt" + "Del" buttons and use the Task manager to shut down any program that "not responding."

If that doesn't work, turn your device off by pressing and holding down the power button. Then wait before restarting your device.

☞ Android device: Hold down the power button for 30 seconds and restart.

4. Binary numbers system |

binary numbers is a language of the computer.

Computers understand data (numbers) through a binary electrical signal (1 means on,

0 means off)

The binary system uses the two values 1 and 0 to express the binary numbers system.

Lesson3: - An introduction to a binary number

- ❖ binary system represents information by 1 and 0 – yes and no – on and off
- ❖ Used to send, receive and store information on digital electronic devices such as computers, phones and calculators.
- ❖ Humans use the decimal system to communicate using numbers. Which has ten unique numerals (0-9) as it called the base ten system.

We use these ten numbers to make all the possible numbers from them
Counting from the right, each place represents a value ten times as big as the previous one.

- ❖ Binary has just two unique numerals (1 and 0) and is therefore called a base two system

Just like the decimal system, when binary runs out of unique digits, it adds a digit on the left. Counting from the right, each place represents a value two times as big as the previous one, and so is a quantity of 1s, 2s, 4s, 8s, 16s, etc

Decimal	Binary					
	
		x16	x8	x4	x2	x1
1	1	0	0	0	0	1
2	10	0	0	0	1	0
3	11	0	0	0	1	1
4	100	0	0	1	0	0
5	101	0	0	1	0	1
6	110	0	0	1	1	0
7	111	0	0	1	1	1
8	1000	0	1	0	0	0
9	1001	0	1	0	0	1

Examples: -

$$\begin{array}{r}
 1 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0 \ 1 \\
 \times \quad \times \quad \times \quad \times \quad \times \quad \times \quad \times \quad \times \\
 128 \ 64 \ 32 \ 16 \ 8 \ 4 \ 2 \ 1 \\
 \hline
 128 \qquad \qquad \qquad + \qquad \qquad \qquad 1 \\
 \hline
 129
 \end{array}$$

$$\begin{array}{r}
 0 \ 0 \ 1 \ 0 \ 0 \ 1 \ 0 \ 1 \\
 \times \quad \times \quad \times \quad \times \quad \times \quad \times \quad \times \quad \times \\
 128 \ 64 \ 32 \ 16 \ 8 \ 4 \ 2 \ 1 \\
 \hline
 32 \qquad \qquad \qquad + \quad 4 \qquad \qquad \qquad + \quad 1 \\
 \hline
 37
 \end{array}$$

Lesson4: - Determining the needs for a digital project

Ponce de Leon understands the importance of planning. He uses technology to collect data to plan for the future.

Let's look at some tools you may need for a group project.

Microsoft Word: is an efficient program write anything. You also can work in the same time, but with an internet connection, you can set up a Word document to be edited by numerous users, at different locations. This can be done by setting up online editing.

Microsoft Paint: You can save the images you create and insert them into your document.

Email: Use email to send your work to Others. Write your ideas in a message or attach a document or image that you've created. Remember to tell them that you're sending an attachment, so they know that it's safe to open.

Assigning roles is Understanding the roles group members

- The strengths of members – their personal characteristics

- Things needed to complete the project: pictures, text, data, etc.
- The tools needed for completing each section of the project
- The format that will be used to deliver information.

Then discuss who might be best suited for each aspect of the project and assign roles

Lesson5: -Gathering data and presenting information

Gathering information using excel need remembering

To **add** the values of cells, use **"+"**

To **subtract**, use **"-"**

To **multiply**, use **"*"**

To **divide**, use **"/"**

Use **"="** in the cell that will **create the formula**,

Add up numbers:

1. Select the cells you want to add together.
2. click: **Home Tab**
3. **AutoSum**
4. **Enter** from **key board**

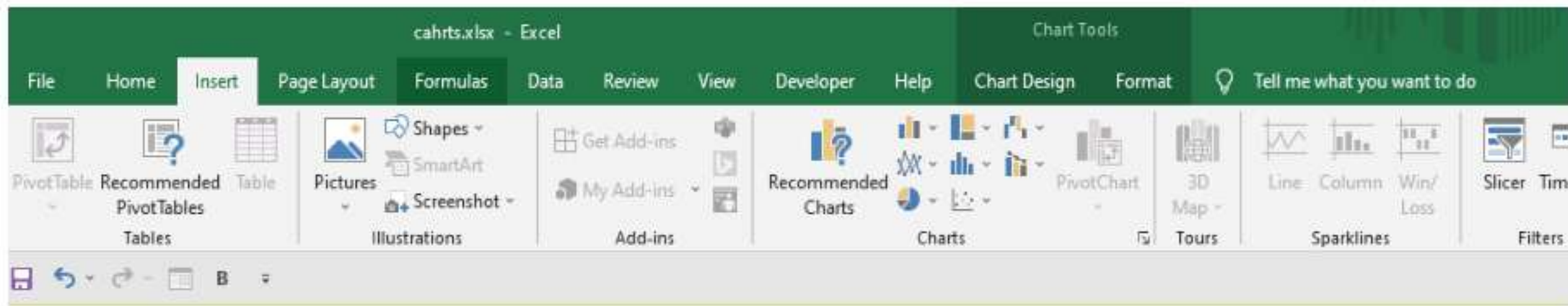
The screenshot shows the Excel interface with the 'Home' ribbon selected. A table is displayed with the following data:

	Name	Math	Arabic	English	science	total
1	Mariam ahmed	23	24	25		
2	Maya ahmed	26	25	24	22	

The formula bar shows the formula `=SUM(D4:G4)` being entered into cell H4. The result '97' is shown in the cell. The cell H5 contains the formula `=SUM(number1; [number2]; ...)` and the result '97' is shown in the cell H6.

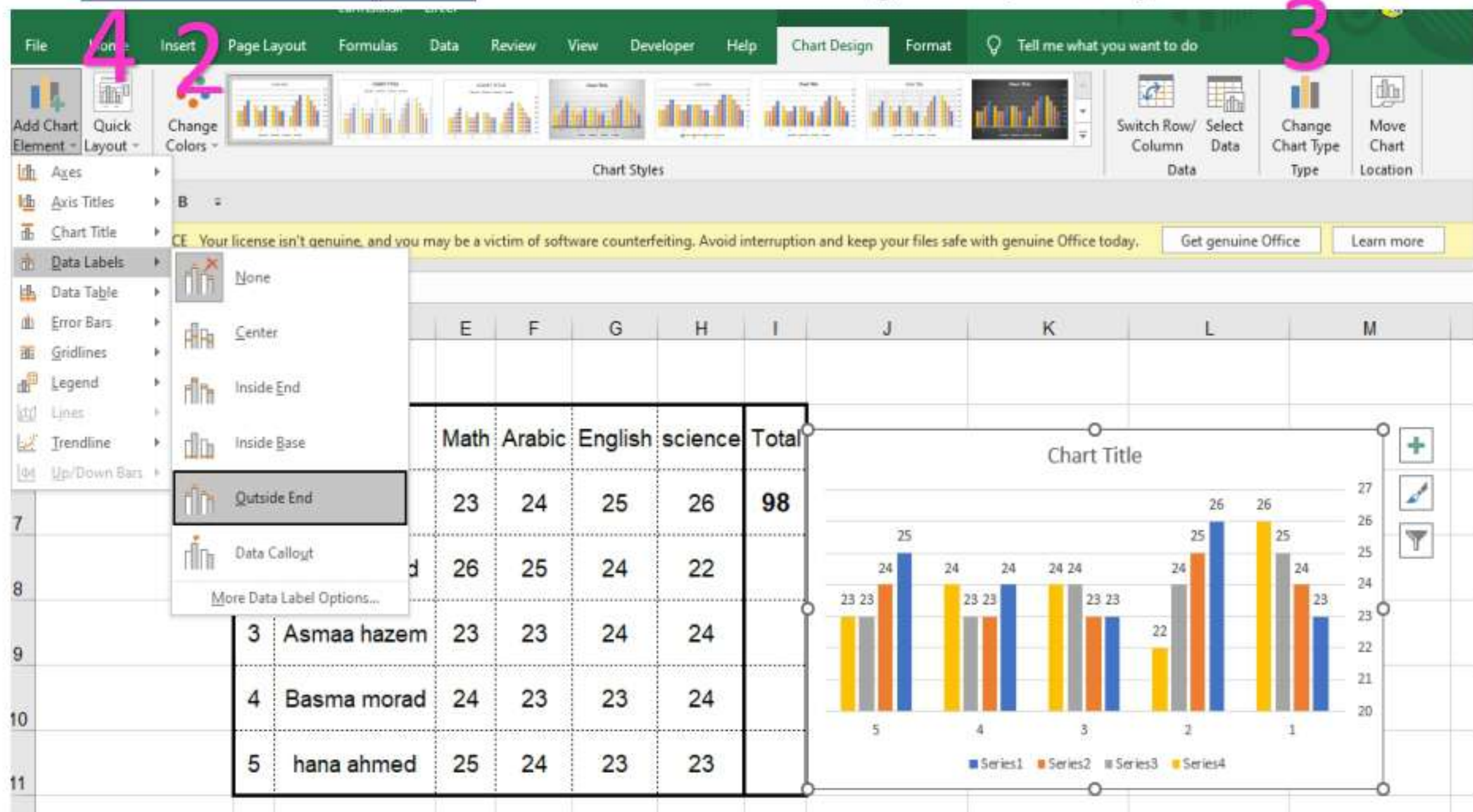
To add infographics to Excel

1. Select the cells you want together.
2. click: **Insert Tab**
3. Choose from **charts** in the **Ribbon**



In Graph charts: -

1. **Add titles or labels** Toolbar >> Chart Design >> Add Chart Element
2. **Choose the color:** Toolbar >> Chart >> Design >> Format
3. **Choose the type:** Toolbar >> Chart Design >> Change chart type
4. **Choose the layout:** Toolbar >> Chart Design >> Quick Layout



Digital information-handling skills

You can **research**, **collect**, **classify** and **process** information using digital information handling skills.

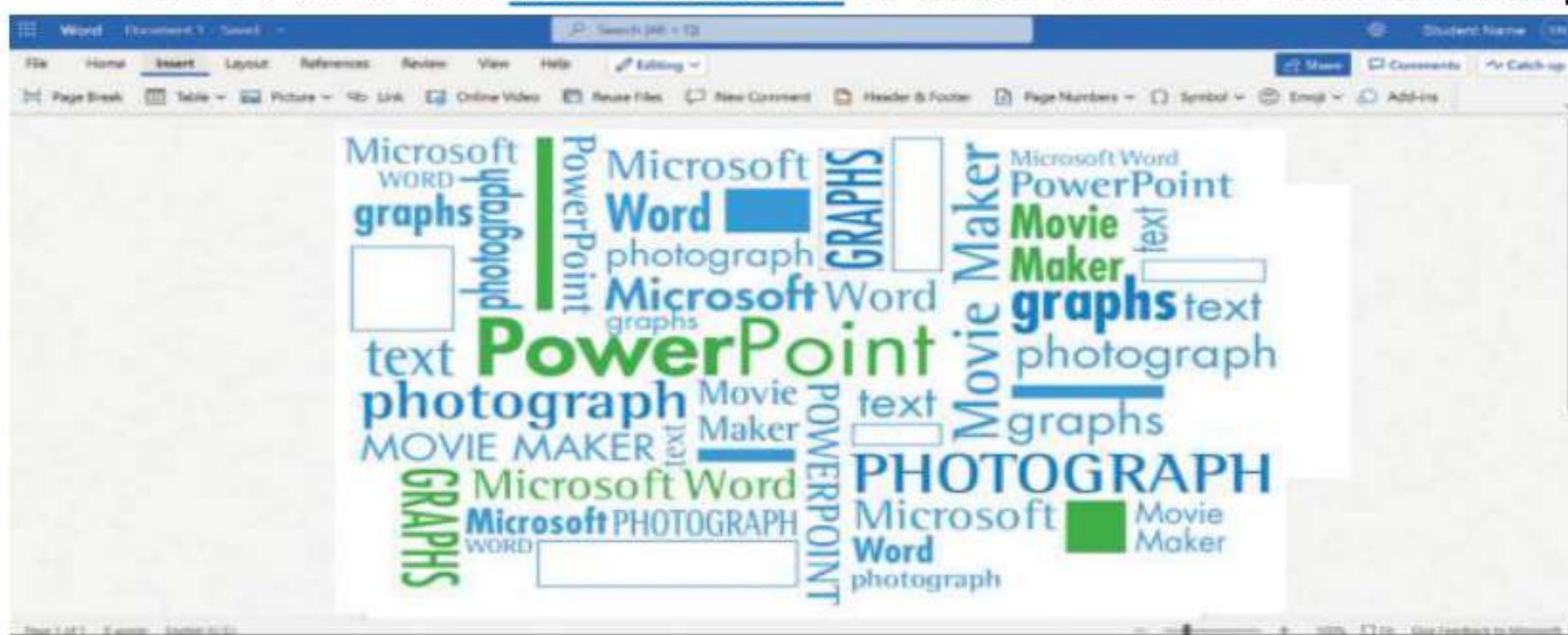
- ❖ **Research:** When researching a topic, first define a research question, then use the internet or offline sources, to find information.
- ❖ **Collection:** You can use Word, Excel, pen and paper. Put data into specific files and folders
- ❖ **Classification:** Excel graphs are one example of how you can classify and provide a visual representation of data drawn in the form of a graph.
- ❖ **Processing:** Once you have researched, collected, and classified your information, you want to process it to get to results.

- You could use Word for a report, Excel for a spreadsheet, or PowerPoint to create a presentation.

Lesson6: - Presenting information in an appealing way

Microsoft Word and PowerPoint Text can show important information in an exciting way.

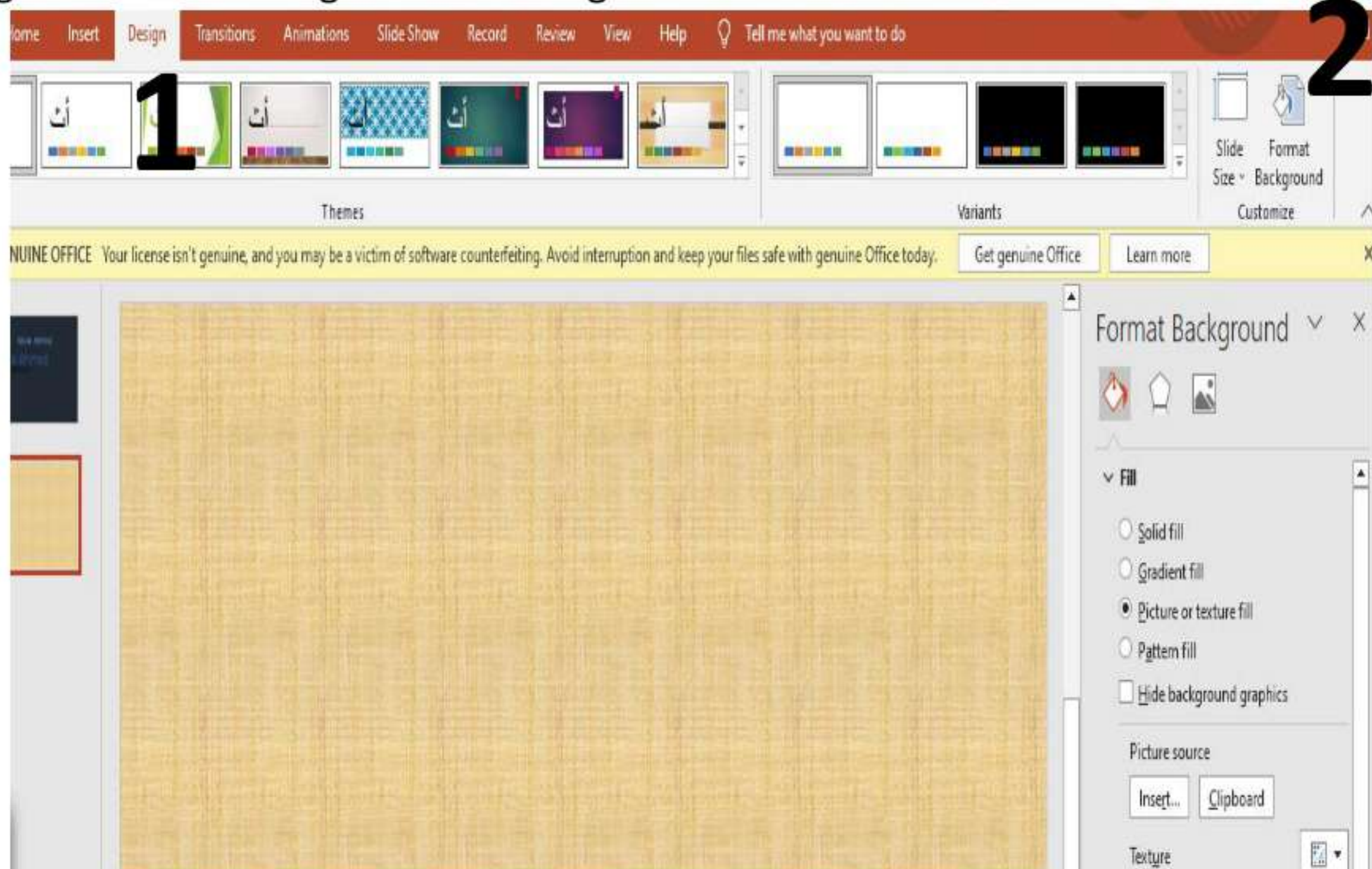
You can use one or two colors to **highlight** specific information, and put important text in **bold** for the main ideas. Use the formatting tools to do this. You can also insert WordArt to make text have even more impact.



In

PowerPoint consider using different background colors.

Design >> format background >>Background colors



Photographs that reflect the topic of your message can catch the viewer's eye. You can also [insert shapes](#) or even your own drawings

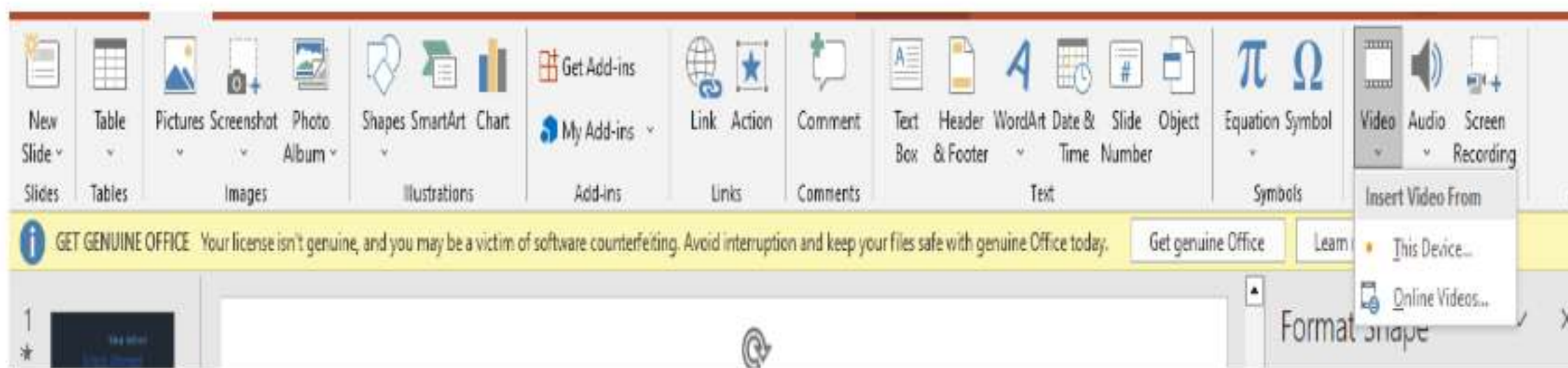
Insert >> Word art



[Graphs and charts](#) are a good way to share data, especially numbers.

[Add audio](#) to enhance a text or image. Be sure there's **a clear** link to the visual displayed data, and that it's **not too long or distracting**.

[Using video clips](#) in your presentation – ones you find online, or videos you have made.



Movie Maker You can use Movie Maker to **make a film** from a selection of still images.

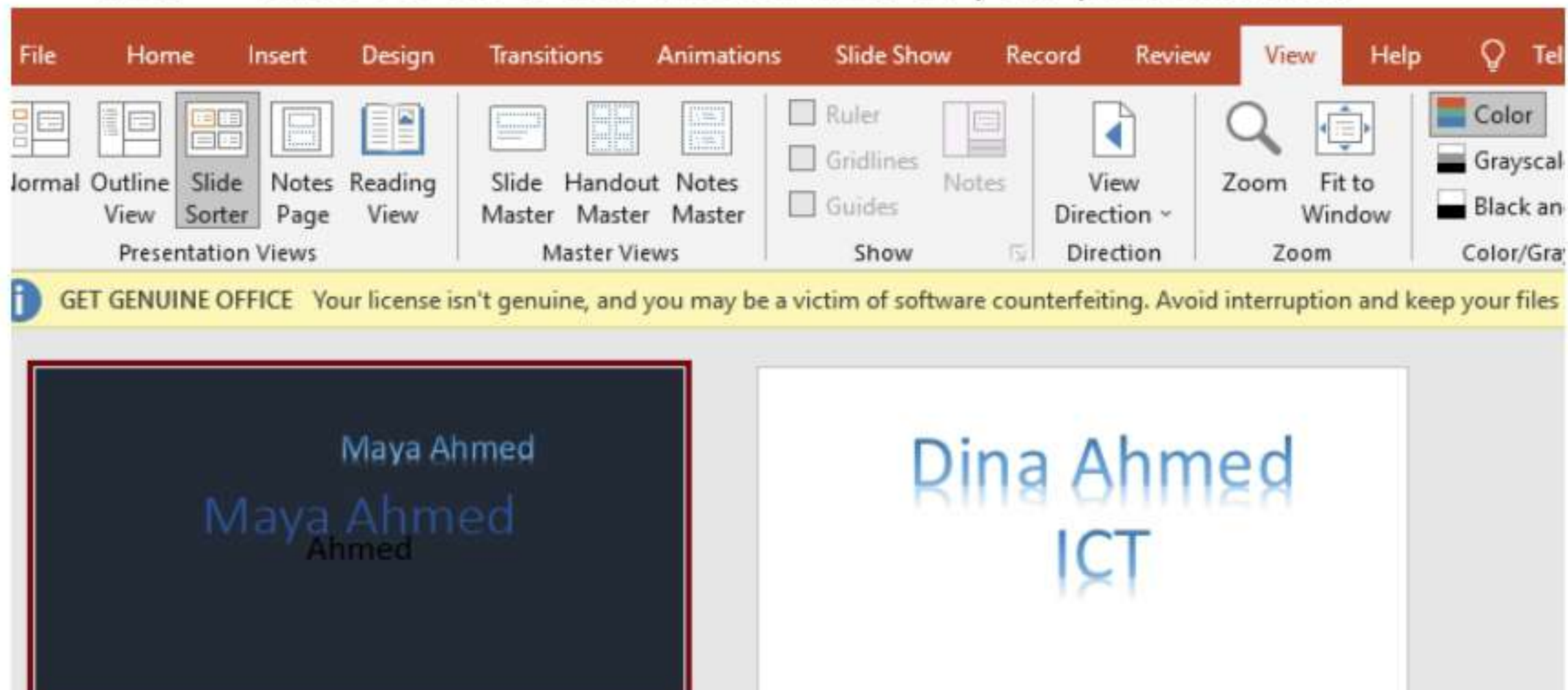
The [intellectual property rights](#) of others should be [respected](#) when using their photos, videos and audio files

Lesson7: - Producing an effective presentation

A storyboard is a chart that shows a sequence of content that forms your presentation

Storyboards

- allow you to plan your ideas and present the results on an effective presentation
- Make a draft with a description of each slide, then go to >>View >> Slide Sorter to see an overview of your presentation.



The 10-20-30 rule of Microsoft PowerPoint

A PowerPoint Presentation: -

shouldn't present too much information

Shouldn't take up too much time.

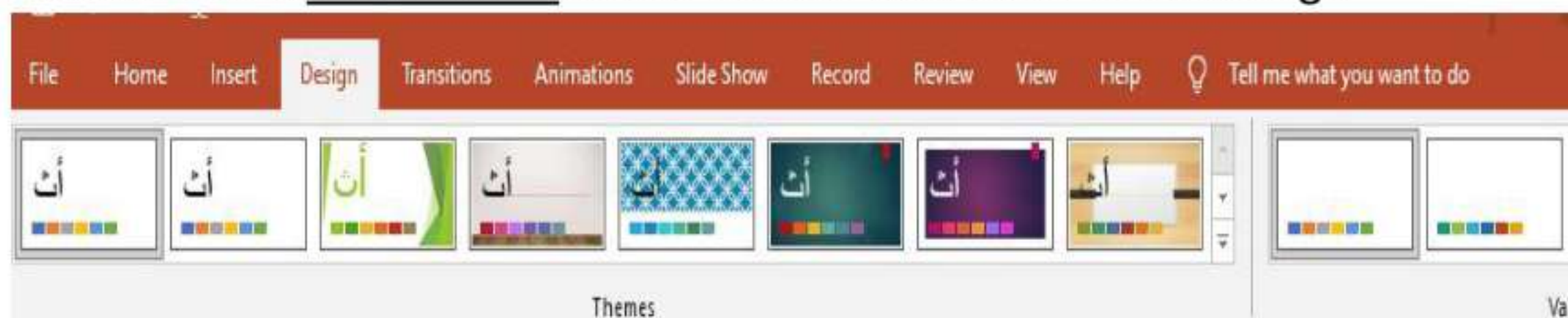
Font size should be easy to read.

10: up to ten slides only

20: no longer than 20 minutes

30: font no smaller than 30-point size

When your presentation is taking shape, look at the **'Design' tab**, which offers **alternatives** to the normal black-and-white design



Lesson8: - Web design principles

HTML (Hypertext Markup Language): is the language that will be displayed on a web browser.

While you can create your story directly through a website-building program, you can also use **Microsoft Word** to create your web page.

When your document is ready, choose '**Web layout**' in the '**View**' tab. You can also **save a file as a web page** by choosing "**file**" then "**save as**" then "**web page**".

The web page displayed in an online search engine

- Consider including a **larger image** that **reflects the main message** or provides information for your story. You may also include **smaller images**

The heading: -

The story title catches your audience's attention. It should have **a larger font size** than the rest of the text

Subheadings: - allow your audience see a particular section of your story.

Subheadings have a **smaller font size** than **headings**.

The main text: -

will tell the story. **Text size** should be **suitable** and **smaller than subheadings**.

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>

<h1>This is a Heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

This is a Heading

This is a paragraph.

The web page displayed in an online search engine

Your story should have a **title or heading**, that catches your audience's attention. It should have a **larger font size** than the rest of the text so that it stands out.

Subheadings break up information and allow your audience to see what a **particular section of your story** is about. Subheadings have a **smaller font size** than headings.

The **main text** will tell the story. Text size should be **suitable and smaller** than subheadings.

Consider font size and color for each piece – the main text will be smaller, but must still be clearly visible. Use simple fonts so your message is not hard to read.

Name: My web page

● This is a heading

● This is a subheading

● Main text

For more information, view some HTML commands with your teacher's help.



Visuals



Audio/Video

PowerPoint and web pages can include audio and video.