

Introduction to Technology & the Internet

The goal of today's class

By the end of the class, a student who has never studied technology should be able to explain:

- What a computer is
 - What hardware and software are
 - What an operating system is
 - What the Internet is
 - What the World Wide Web is
 - What a website is
 - What a web browser is
 - What a search engine is
 - What a URL is
 - What a domain name is
 - What a server is
 - What an IP address is
 - What Wi-Fi and mobile data are
 - What an app is
 - What happens when they visit a website
 - Basic online safety
 - The difference between the Internet and the Web
-

1. Start With Something They Already Know

Instead, ask:

"Who used WhatsApp today?"

Hands will go up.

Then:

"Who used TikTok?"

"Who watched YouTube?"

"Who searched something on Google?"

"Who used Facebook or Instagram?"

"Who sent money using an app?"

Then tell them:

"All of these things depend on technology, computers and networks. Today we're going to understand what is actually happening behind the screen."

2. What Is Technology?

Start extremely simply.

Technology

Technology is the use of knowledge, tools and systems to solve problems or make tasks easier.

Examples:

A spoon

A calculator

A phone

A car

A computer

A microwave

A banking app

The Internet

Technology isn't only computers.

You can ask:

"Is a bicycle technology?"

Yes.

"Is a smartphone technology?"

Yes.

"Is WhatsApp technology?"

Yes.

3. What Is a Computer?

Simple definition:

A computer is a machine that receives information,
processes it, stores it and produces a result.

Introduce the four basic ideas:

Input → Processing → Output → Storage

For example, using a calculator:

Input

You enter:

5 + 5

↓

Processing

The computer calculates it.

↓

Output

10

↓

Storage

The computer can store information such as files, photos and programs.

Everyday examples

Keyboard → Input

Mouse → Input

Microphone → Input

Screen → Output

Speaker → Output

Printer → Output

Hard drive/SSD → Storage

RAM → Temporary working memory

CPU → Processing

4. Hardware vs Software

This is one of the most important beginner concepts.

Hardware

Hardware is the physical part of a computer that you can touch.

Examples:

Keyboard

Mouse

Monitor

CPU

RAM

SSD

Motherboard

Printer

Webcam

Software

Software is the set of instructions that tells hardware what to do.

Examples:

Windows

macOS

Android

iOS

Chrome

WhatsApp

Microsoft Word

VS Code

A simple analogy:

Human body analogy

Hardware = body

Software = instructions/knowledge

A computer needs both.

5. What Is an Operating System?

Now introduce:

Operating System = the main software that manages a computer and allows other programs to run.

Examples:

Windows

macOS

Linux

Android

iOS

Explain:

If you have a laptop running Windows:

Laptop hardware

↓

Windows

↓

Chrome / Word / VS Code / Games

The operating system sits between the user, applications and hardware.

6. What Is a File?

Before going to the Internet, explain files.

A file is simply:

A piece of information stored by a computer.

Examples:

photo.jpg

song.mp3

video.mp4

document.pdf

assignment.docx

website.html

program.js

Then explain **folders**.

A folder helps organize files.

For example:

```
Documents
|
├── Assignment.docx
├── CV.pdf
└── Projects
    ├── website.html
    └── app.js
```

7. What Is a Network?

Now we're getting toward the Internet.

A network is:

Two or more devices connected so they can communicate or share resources.

Example:

```
Computer — Computer
|           |
└── Network ─┘
```

At home:

```
Phone
|
Laptop — Wi-Fi Router — Internet
|
Smart TV
```

This introduces the concept of connected devices.

8. What Is the Internet?

This is where you should slow down.

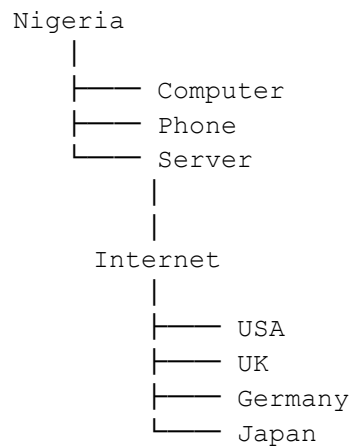
Simple definition

The Internet is a worldwide network of connected computers and devices that communicate with each other.

Think of the Internet as **roads**.

There are millions of devices around the world.

They need ways to communicate.



The Internet connects these networks together.

9. Internet $\neq$ World Wide Web

This is extremely important.

Many beginners think:

Internet = Web

They aren't exactly the same.

Internet

The **infrastructure/network** connecting computers around the world.

World Wide Web

A service that operates **on top of the Internet** and allows people to access interconnected web pages and resources using browsers.

Think:

Internet = roads

Web = one system of places/services you can reach using those roads

Other things also use the Internet:

Email

WhatsApp

Online games

Video calls

File transfers

Banking systems

Streaming

The Web is only one part of the larger Internet ecosystem.

10. What Is the World Wide Web?

Explain it as:

The World Wide Web is a system of interconnected websites and web pages that we access through the Internet.

It was invented by **Tim Berners-Lee**.

A student can open:

`https://www.google.com`

and the browser retrieves a web page from a server.

11. What Is a Website?

A website is:

A collection of related web pages and resources available under a web address.

Examples:

Google

YouTube

Wikipedia

Amazon

Pendeet

A website might contain:

Homepage
About
Products
Contact
Login
Profile

12. What Is a Web Page?

A website can contain many individual pages.

For example:

pendeet.com



Each individual page is a **web page**.

13. What Is a Web Browser?

Ask:

"What do you use to open websites?"

They'll probably say:

Chrome.

Exactly.

A browser is software used to access and interact with resources on the Web.

Examples:

Google Chrome

Safari

Microsoft Edge

Firefox

Opera

Important distinction:

Chrome is NOT the Internet.

Chrome is a **browser**.

The Internet is the underlying network.

14. What Is Google?

This is another common misunderstanding.

Ask:

"Is Google the Internet?"

No.

Google is primarily a **search engine/company and collection of online services**.

You can use Google through a browser.

For example:

You = me
↓
Chrome
↓
Google Search

↓
Search results
↓
Website

15. Search Engine vs Browser

Make them memorize this.

Browser Search Engine

Chrome Google

Safari Bing

Firefox DuckDuckGo

Edge Google

Opera Bing

A browser is the **tool you use to access the Web**.

A search engine helps you **find information on the Web**.

16. What Is a URL?

When they see:

<https://www.pendeet.com/shop>
<https://www.google.com>

tell them:

That is a URL.

URL means:

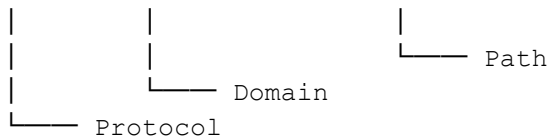
Uniform Resource Locator

Don't spend too much time on the name.

Explain that it is basically an **address for a resource on the Web**.

Break it down:

<https://www.pendeet.com/shop>



17. What Is a Domain Name?

Example:

`pendeet.com`

That is a domain name.

Other examples:

`google.com`
`youtube.com`
`facebook.com`
`wikipedia.org`

A domain gives humans an easier name to use instead of remembering a numerical IP address.

18. What Is an IP Address?

Computers communicate using network addresses.

An IPv4 example:

`142.250.72.14`

Explain:

An IP address is a numerical address used to identify a device or network interface on a network.

You can compare it to a house address.

Instead of saying:

"Go to John's house."

You need an address.

Similarly, computers need addresses.

19. DNS — The Internet's Phonebook

This is a great beginner concept.

Ask:

"If computers understand IP addresses, why do we type
google.com?"

Because of **DNS**.

DNS = **Domain Name System**

It translates domain names into IP addresses.

Conceptually:

You type:

google.com

↓

DNS

↓

142.xxx.xxx.xxx

↓

Google's server

Analogy:

You know your friend's name, but your phone knows their
phone number.

DNS does something conceptually similar for domain names and IP addresses.

20. What Is a Server?

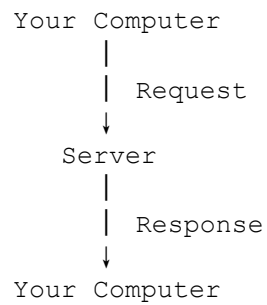
This is a BIG one for future developers.

Tell them:

A server is a computer or system that provides services or resources to other computers, called clients.

Example:

When you open a website:



The server may contain:

Website files

Images

Videos

User accounts

Products

Databases

APIs

21. Client and Server

Introduce this relationship:

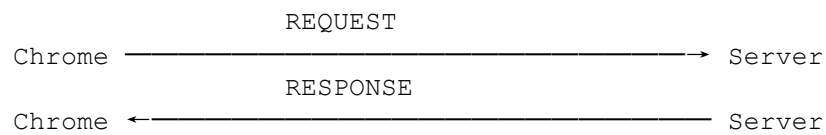
Client

The device/application requesting something.

Server

The system providing it.

Example:



This concept will become incredibly important when they eventually learn:

Frontend

Backend

APIs

Databases

Authentication

22. What Happens When You Visit a Website?

This is a fantastic classroom demonstration.

Tell them:

"Let's say you type `pendeet.com`."

Then simplify the journey:

1. You enter `pendeet.com`
↓
2. Browser checks the address
↓
3. DNS helps find the server
↓
4. Browser sends a request
↓
5. Server receives request
↓
6. Server processes it
↓
7. Server sends a response
↓
8. Browser receives it
↓
9. Browser displays the webpage

This is the moment where students start realizing that a website isn't magic.

23. HTTP and HTTPS

Explain simply.

HTTP = a protocol used for communication between clients and web servers.

HTTPS = HTTP with encryption provided through TLS.

Tell them:

When you see:

`https://`

the communication is protected using encryption while travelling between the browser and server, assuming the connection is correctly secured.

Don't tell beginners:

"HTTPS means the website is safe."

That's too simplistic.

HTTPS protects the connection, but it doesn't automatically mean the website itself is trustworthy.

24. What Is Wi-Fi?

Another common misconception:

Wi-Fi $\neq$ Internet.

Wi-Fi is a **wireless networking technology**.

Your laptop can connect to your router through Wi-Fi.

The router may then connect to the Internet through your ISP.

For example:

Laptop
↓

Wi-Fi
↓
Router
↓
ISP
↓
Internet

25. What Is an ISP?

ISP = **I**nternet **S**ervice **P**rovider

These are companies that provide Internet connectivity.

Examples in Nigeria include providers such as:

MTN

Airtel

Glo

9mobile

Spectranet

Smile

So:

You
↓
Phone / Router
↓
ISP
↓
Internet

26. Mobile Data vs Wi-Fi

Explain:

Mobile data

Your phone connects to the cellular network.

Phone

↓
Mobile network
↓
ISP
↓
Internet

Wi-Fi

Your device connects wirelessly to a local network.

Phone
↓
Wi-Fi
↓
Router
↓
ISP
↓
Internet

Both can ultimately give you Internet access.

27. What Is an App?

An application is software designed to perform specific tasks.

Examples:

WhatsApp

Instagram

Calculator

Camera

Chrome

Pendeet

Explain:

An app is software.

The phone itself is hardware.

28. Website vs App

For beginners:

Website

Usually accessed through a browser.

Chrome → website

Mobile app

Installed on your device.

Phone → app

But modern technology gets more complicated because some websites behave like apps, and apps can use web technologies.

Don't overcomplicate this yet.

29. Frontend vs Backend

This is where you can start preparing them for software development.

Frontend

What the user sees and interacts with.

Examples:

Buttons

Text

Images

Forms

Navigation

Product cards

Technologies:

HTML
CSS
JavaScript
React
React Native

Backend

The systems working behind the scenes.

Examples:

Authentication

Database operations

Payments

Orders

APIs

Business logic

Technologies can include:

Node.js
Python
PHP
Java
C#

30. Database

Ask:

"If you create a Pendeet account, where does your account information go?"

It needs to be stored somewhere.

That's where databases come in.

A database stores and organizes information.

Example:

Users

ID	Name	Email
1	John	john@email.com
2	Mary	mary@email.com

Other examples:

Products
Orders
Payments
Messages
Posts
Comments

31. API

Introduce this carefully.

API = Application Programming Interface

For beginners:

An API allows different software systems to communicate with each other.

Example:

```
Pendeet App
  ↓
  API
  ↓
Backend
  ↓
Database
```

The app might ask:

"Give me this user's products."

The backend processes the request and sends information back.

32. Cybersecurity Basics

Since they're entering tech, teach them this **from day one**.

Explain:

Passwords

Don't use:

123456
password
qwerty

Use strong, unique passwords.

2FA

Two-factor authentication adds another layer of protection.

Example:

Password
+
OTP / Authenticator

Phishing

Someone tries to trick you into giving away:

Password

OTP

Bank details

Credit card information

Account credentials

Never share OTPs

Make this very clear.

Your bank, legitimate company or security team should not need you to send them your OTP through WhatsApp or a phone call.

33. Cloud Computing

You can introduce the concept without going deep.

Students often hear:

"My files are in the cloud."

Ask:

"Where is the cloud?"

The cloud is essentially **remote computing infrastructure accessed over a network/Internet**.

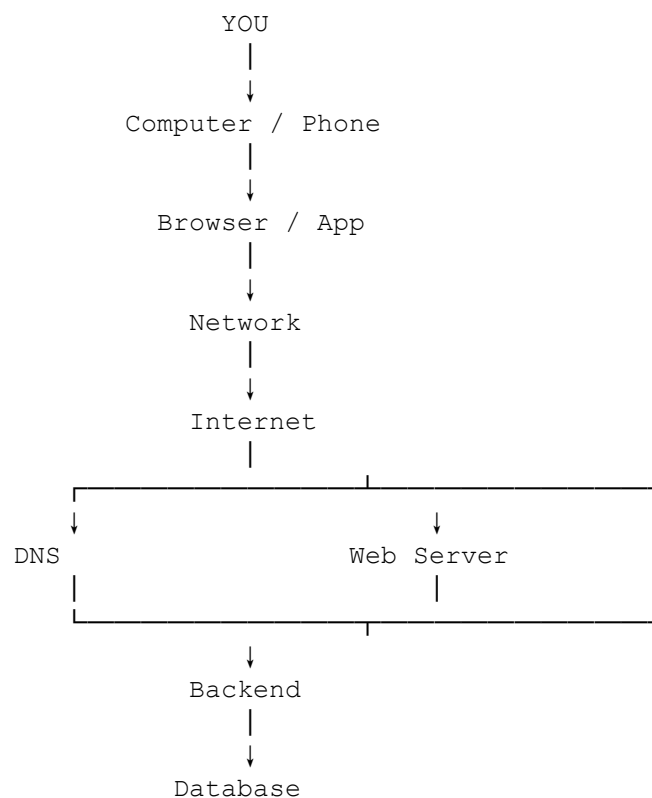
Instead of storing everything on your laptop:

```
graph TD
    A[Your Computer] --> B[Internet]
    B --> C[Cloud Servers]
```

Examples include cloud storage and cloud computing services.

34. The Big Picture

this:



Note:

"This is the foundation of the technology world you are about to enter."

35. A Simple Class Exercise

Test Yourself.

Exercise

1. What is hardware?
2. Give three examples of hardware.
3. What is software?
4. Give three examples of software.
5. What is the Internet?
6. Is the Internet the same thing as the World Wide Web?
7. What is a browser?
8. Give two examples of browsers.
9. What is a search engine?
10. Is Google Chrome the same thing as Google Search?
11. What is a URL?
12. What is a domain name?
13. What is an IP address?
14. What does DNS do?
15. What is a server?
16. What is Wi-Fi?
17. Is Wi-Fi the same thing as the Internet?
18. What is an app?

19. What is a database?

20. What is an API?
