

Learner Full Name: _____

School: _____

Class: _____

Workstation Device: _____

Station #: _____

Session 6: Searching the Web & Internet Foundations

Until now, your computer has worked completely alone inside our classroom. But when you connect your computer to the **Internet**, it joins a worldwide conversation linking millions of schools, libraries, scientists, and communities across every continent!

1. Plain Talk: The Road Network of Computers

Think about the road network in Ghana: untarred feeder roads connect small villages to highways, which lead to major cities like Accra, Kumasi, and Tamale. Vehicles travel along these roads carrying goods and letters.

The **Internet** is an electronic road network: millions of computers connected by underground copper lines, radio cell towers, and **giant undersea glass cables** laid deep under the Atlantic Ocean that come ashore right here on the coast of Ghana (in Accra and Tema)!

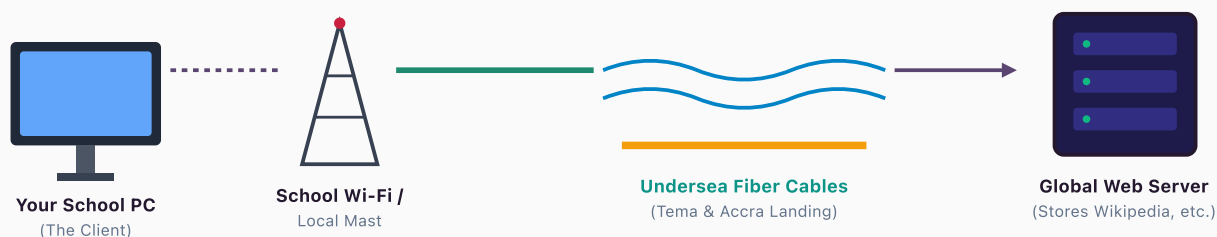


Figure 6.0: How your school computer connects across the Atlantic Ocean to reach global knowledge servers.

2. Internet vs. World Wide Web: Don't Confuse Them!

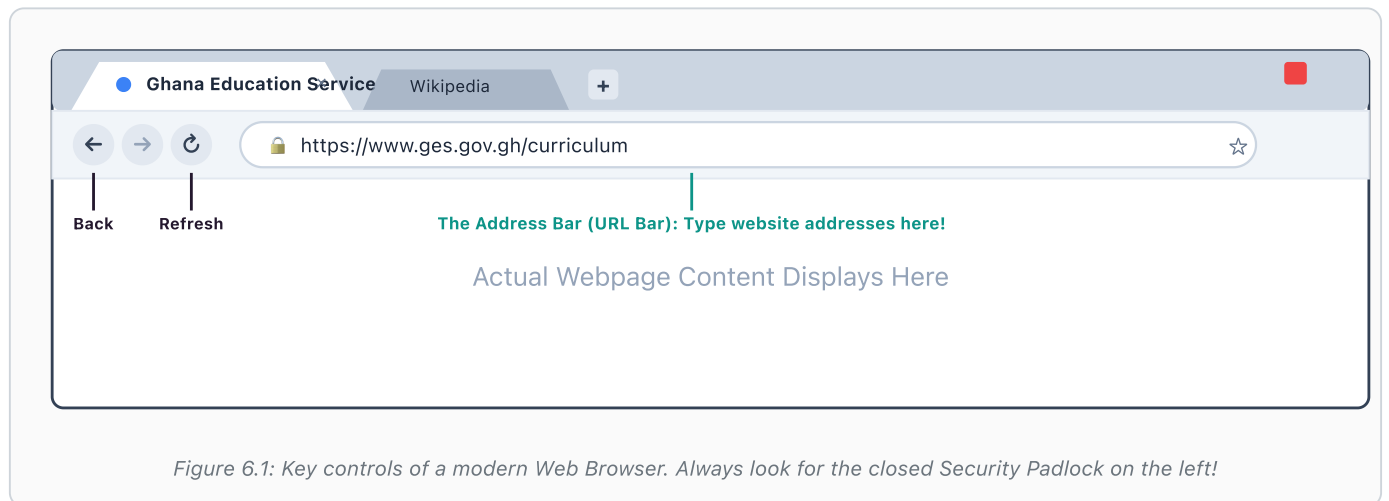
The Internet (The Physical Road)	The World Wide Web (The Cars on the Road)
The massive worldwide network of physical computers, wires, routers, and radio signals.	The collection of multimedia pages, documents, pictures, and videos that travel across that network.
<i>Analogy:</i> The roads, bridges, and junctions.	<i>Analogy:</i> The cars and lorries carrying passengers and goods.



1. What is a Web Browser?

To visit a website, you need a specialized program called a **Web Browser**. The browser translates code written across the world into beautiful, readable pictures and text on your screen.

Common browsers you will see on Ghanaian computers include: **Google Chrome**, **Microsoft Edge**, and **Mozilla Firefox**. (Safari is on Apple Mac and iPhone.)



2. Browser Navigation Controls Decoded

Control Button	What It Does	When Should You Click It?
Back Arrow (←)	Returns to the previous page you were reading.	When you opened a result and want to go back to the search list.
Forward Arrow (→)	Moves forward to the page you just backed out of.	When you hit Back by mistake!
Refresh (↻)	Reloads the page from scratch across the network.	When a page loads slowly, shows an error, or freezes.
New Tab (+)	Opens a fresh, clean browsing page in the same window.	When you want to search something new without losing your current page.

1. What is a URL?

Just as every home or school in Ghana has a physical location or GhanaPost GPS address (e.g., GA-183-9024), every single page on the World Wide Web has its own unique digital address called a **URL** (Uniform Resource Locator).

https:// **www.** **e x a m p l e** **.org** **/science/water**

1. **Protocol** (Secure encrypted World Wide Web) 2. **Web** 3. **Domain Name** (Name of organization) 4. **Extension** (Organization type) 5. **Specific Page Path** (Folder & page inside site)

Figure 6.2: Anatomy of a Web Address (URL). The extension tells you who runs the site!

2. Domain Extensions: Who Runs the Website?

The last few letters of a web address tell you what kind of organization created it:

Extension	What Kind of Organization	Reliability for School Homework
.edu / .edu.gh	Ghanaian schools, colleges and universities.	HIGH: Verified academic professors & researchers.
.gov / .gov.gh	Official Government Ministries & Departments.	HIGH: Official laws, public statistics, and curriculum.
.org	Often non-profits, but anyone can register one.	CHECK: Still check WHO wrote it (e.g. Wikipedia, UNESCO).
.com	Commercial business company.	CAUTION: May be trying to sell you products or show ads!

3. The Security Padlock: HTTPS vs. HTTP

THE MEANING OF THE PADLOCK

When you look at the address bar, check if there is a tiny **closed padlock icon** (Chrome may show a small settings icon instead) and the letters **https://** (the 's' stands for *Secure*). This means information passing between your computer and that website is scrambled into secret code so thieves and eavesdroppers cannot steal it.

1. Browser vs. Search Engine: Don't Confuse Them!

THE WEB BROWSER (Your Window on the Web)

The application software on your computer (Chrome, Edge, Firefox). It is the window you look through to see and visit web pages.

THE SEARCH ENGINE (The Head Librarian)

A website living *inside* your browser (Google, Bing, DuckDuckGo) that keeps an enormous index of billions of pages to help you find answers.

2. The Art of Keyword Searching

Search engines do not need conversational chat words like "please" or "tell me". They hunt for **Key Target Words**:

 Weak Search (Too vague or full of filler)	 Smart Keyword Search (Specific & Direct)
trees in ghana (Millions of random results)	mangrove tree species coastal protection Ghana
how can our school get some clean drinking water?	ceramic pot water filtration schools Ghana
plastic	plastic sachet recycling projects Accra

3. The 4-Way Fact-Check Shield

Anyone in the world can create a webpage and write completely false information. Before writing a fact into your Tech Club report, pass it through this 4-step shield:



Figure 6.3: The 4-Way Fact-Check Shield. If two independent reliable sources agree, the fact is trustworthy!

4. Panic Button: Deceptive Pop-Ups & Flashing Traps

WARNING: "YOU HAVE WON A FREE IPHONE & 5,000 CEDIS!"

While browsing, you might see flashing boxes claiming you won a lottery or prize.

Rule: If you did not buy a ticket, you did not win! Never click these boxes. Never enter your name, school, or phone number. Immediately click the tiny **[X]** on the tab to close it!



1. Lab Goal: Research a Real Ghanaian Environmental Topic

Follow these 5 steps to conduct verified school research online:

1

Launch Your Web Browser:

Double-click the **Google Chrome** or **Microsoft Edge** icon on your desktop (or find it via Start Menu).

2

Direct Navigation Practice:

Click directly inside the top **Address Bar**.

Type: `https://en.wikipedia.org` and tap the **Enter** key.

Notice: You went straight to the website without using a search engine!

3

Open a New Tab:

Press **Ctrl** + **T** to open a fresh tab.

In the search box, type your research query: `Kakum national park canopy walkway wildlife Ghana` and press

Enter.

4

Inspect Results:

Do not click the first link blindly! Read the short summary text underneath each result title. Click a link ending in `.org`, `.edu`, or an official tourism board page.

5

Record Your Findings: Fill in the research record sheet below based on what you discovered:

2. Student Research Record Sheet

Research Field	Your Recorded Answer (Fill in below)
1. Exact Web Address (URL)	
2. Organization / Author	
3. First Verified Fact	
4. Second Verified Fact	

3. Useful Keyboard Shortcuts for Browsing

Ctrl

+

T

: Opens a brand-new Tab.

Ctrl

+

W

: Closes the current active Tab.

1. Match the Web Term to its Meaning

Draw a line connecting each digital concept on the left to its definition on the right:

- | | |
|--------------------|---|
| [Web Browser] | • Official domain extension for Ghanaian government institutions. |
| [Search Engine] | • The program on your computer (Chrome, Edge) used to visit websites. |
| [URL] | • Physical glass fibers on the Atlantic seabed carrying internet data. |
| [Undersea Cable] | • The unique address of a webpage (e.g. https://...). |
| [.gov.gh] | • A website (like Google) that helps you search the web using keywords. |

2. Written Review Questions

Question 1: You want to research how to purify river water using moringa seeds. Write three effective keywords you would type into a search engine:

Question 2: What does the tiny closed padlock icon in the browser address bar tell you?

Question 3: Why is an educational website ending in .edu.gh generally more trustworthy for school research than a personal blog ending in .com?

3. Self-Assessment & Mentor Sign-Off

Tick the column that reflects your confidence at the end of Session 6:

Web Browsing & Research Competency	With Help	Almost Alone	All By Myself!
1. I can explain the difference between the Internet and the World Wide Web.	☐	☐	☐
2. I can identify the difference between a Browser (Chrome) and a Search Engine (Google).	☐	☐	☐
3. I know how to type a direct URL into the address bar and use Back, Forward, and New Tab.	☐	☐	☐
4. I can use specific keywords to find educational information and spot deceptive ads.	☐	☐	☐

Mentor Signature: _____

Date Completed: _____