Computer Science Principles
Lesson: April 6, 2020

Learning Target:

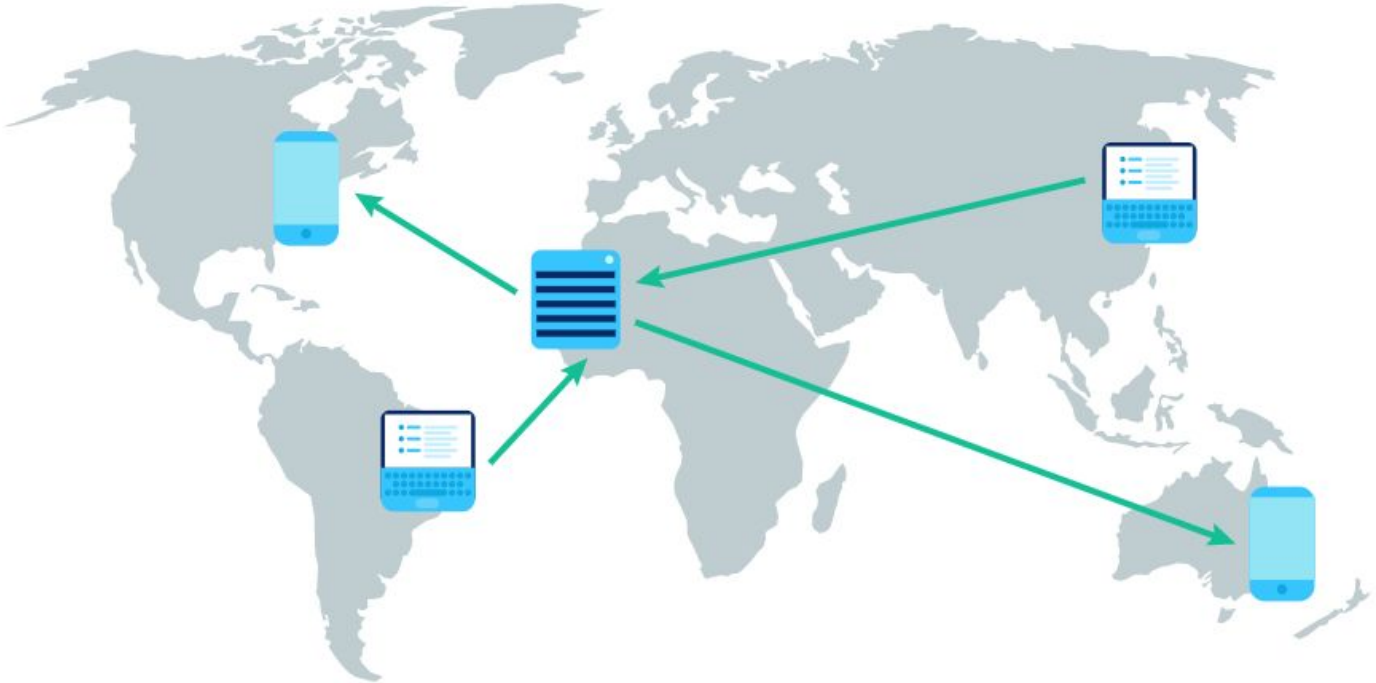
In this lesson, the goal is to build student understanding of the Internet as a set of computers exchanging bits in the form of packets, and for students to identify the components of their digital footprint.

Let's Get Started:

Watch Video: What is the Internet?

Practice:

The **Internet** is a global network of computers communicating with each other in some way, whether they're sending emails, downloading files, or sharing websites.



To create a global network of computers, we need:

- **Wires & wireless**: Physical connections between computers.
- **IP & DNS**: Addressing protocols to uniquely identify all the computers on the Internet.
- **TCP/IP**: Protocols to reliably route packets of data from one computer to another.
- **TLS**: A secure protocol for sending data without letting everyone else on the Internet read it.
- **HTTP & HTML**: Common protocols and formats for sharing documents and viewing them across any type of computer.

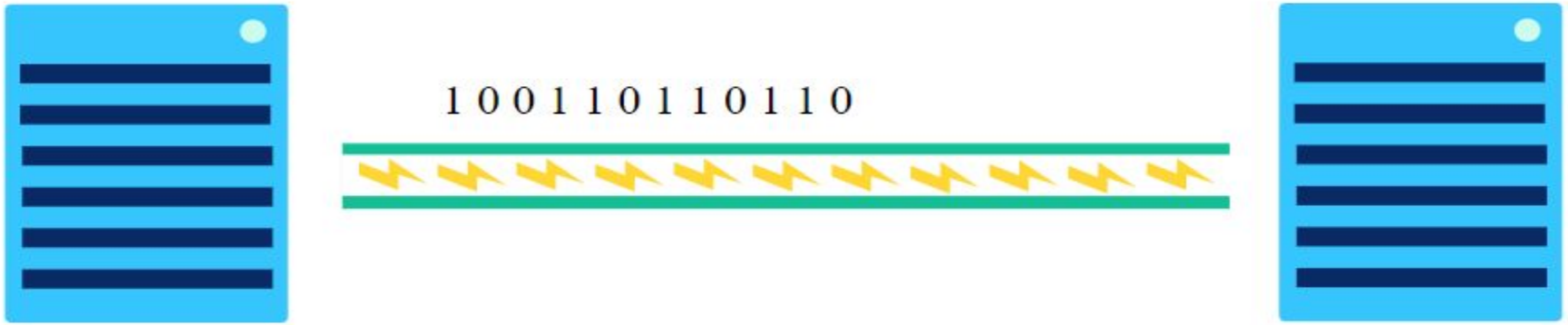
You likely use the Internet every day, but you're probably new to many of those acronyms. In this unit, we'll learn more about each of the technologies underlying the Internet.

Stop Here and create a journal entry in your notebook:

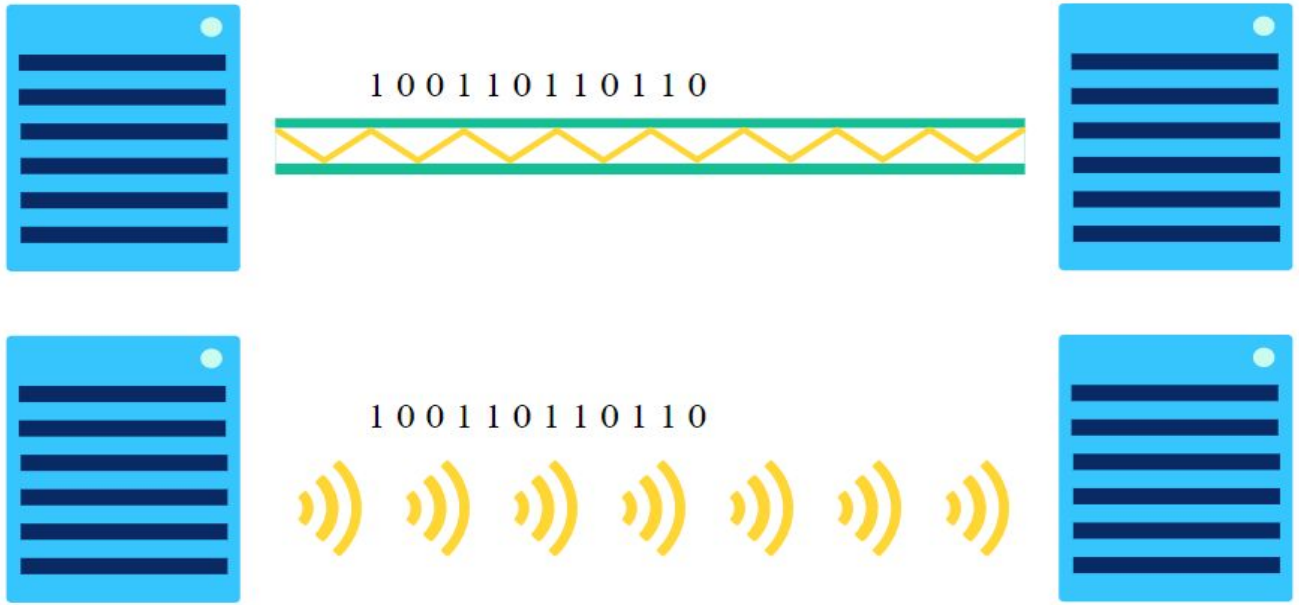
What would your life be without the Internet? What would you miss the most? What wouldn't you miss at all? What do you hope the Internet will enable in the future?

To make the global Internet possible, we need a way for two computers to communicate with each other, and it needs to work quickly across very long distances.

The very first network connections re-used the copper cables of telephone lines, communicating binary data via pulses of electricity.



Engineers soon discovered how to send data in fiber optic cables as pulses of light and how to send data wirelessly via radio waves.



The Internet still uses all of these types of connections, because they each have their own benefits and drawbacks, like faster speed or higher cost.

Wires, cables, and WiFi

In the next video you will learn how computers send binary data over physical connections. Then we'll dive deeper into the types of connections and their speed.

Click Here to read and take notes over Transporting Bits over wires.

Transporting bits over wires

How much have you learned?

Click here to check your knowledge of how the internet works so far…

Tomorrow: IP and DNS: How do Computers Find Each other???