

# Computer Science Principles

## Lesson: April 8, 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.

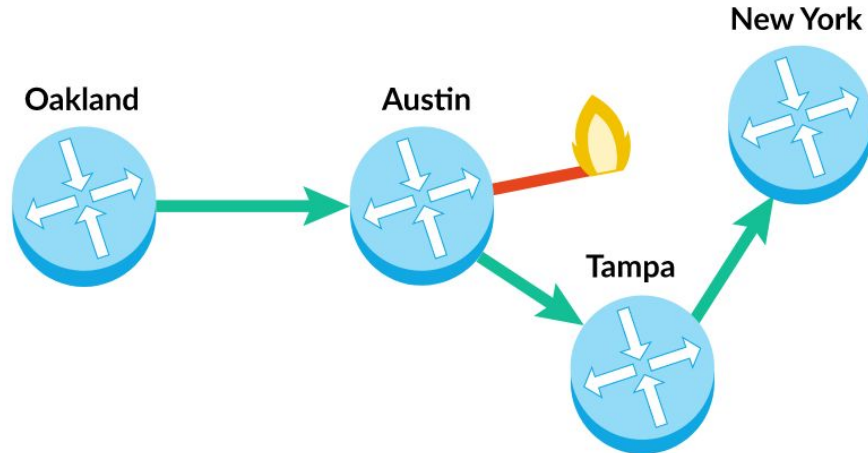
### A Question to Ponder:

**Have you or your parents ever lost a letter or package in the mail? Write your answers in your journal...**

# Practice:

## How can computers send data reliably?

The postal system tries hard to deliver letters to their destination, but sometimes, things happen along the way: natural disasters, thefts, messy handwriting, hungry dogs...and **pandemics!!**. The Internet is a lot like a postal system: it has to get information from one part of the world to another part of the world. Once again, things can happen along the way, like a fire destroying an ethernet cable.



The designers of the Internet wanted to make data transmission as reliable as possible, so they created the **TCP/IP protocols** to add fault tolerance and redundancy to the Internet.

In this next [video](#), you'll learn more about TCP/IP from a Spotify software engineer and the creator of the Internet himself, and then we'll dig deeper into the protocols.

## How can computers send data reliably?

- Click [here](#) for a deep dive into **Internet routing protocols**  
..Remember to take notes!
- Let's Practice what you have learned. Click [here](#) for more practice.

## How can computers send data reliably?

- Click [here](#) for a deep dive into **Transmission Control Protocol (TCP)**  
..Remember to take notes!
- Let's Practice what you have learned. Click [here](#) for more practice.

- **Quiz Time! Click [Here](#) to Quiz yourself over what you have learned**
- **Tomorrow: Encryption and Decryption: How can computers send private data?**