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|  |  | **Worksheet Guide For “Wires, Cables & Wifi”** logo.png |

**Vocabulary**

Bit: any pair of opposites

Bandwidth: the maximum transmission capacity of a device

Bit Rate: the number of bits that we can actually send over a given period of time usually measured in seconds.

Latency: the amount of time it takes for one bit to travel from one place to another

Why is it important to communicate a timing protocol prior to sending messages?

**It allows multiple 0s and 1 to be communicated. Like 5 0s in a row.**

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|  | **Pros** | **Cons** |
| **Electricity** | **Cheap** | **Signal Loss** |
| **Light** | **Really fast**  **No signal loss** | **Expensive**  **Hard to work with** |
| **Radio Waves** | **Totally mobile** | **Short range** |

Where is copper wire most commonly used? Why don’t we use it everywhere?

It is most commonly used in homes and not everywhere because it can only send a signal so far before it is lost quickly.

Where is fiber-optic cable most commonly used? Why don’t we use it everywhere?

It is most commonly used for connections globally like connecting continents together. We don't use it everywhere because it is expensive and hard to work with.

Where are radio waves most commonly used? Why don’t we use them everywhere?

They are most commonly used for mobile devices such as a phone, laptop,or tablet. We don’t use them everywhere because they have a short range.