8Pratt, Dr. Kaibree M. and Emilee C. Pratt. Installing a Network. Provo: Whitesides Publising. 2018. Pages 45-66.

7Satellites. It takes quite a bit longer to send a signal from your compter, to a server, way up to the satellite, have the satellite process the data, and then send it way back to earth, and to the server you are trying to talk to. Then it has to go all the way back to you! Satellite works great for TV chanels, but is very bad for internet. We only use them if we have no other way to get the internet.

3Cows. If you think back to how we measure binary in the computer, we learned about megabtes and gigabytes. Cows deals with that. It is a way to measure how much binary we can send across the internet at once. A good way to visuaize cows would be to compare a straw, your average water hose for your lawn, and the fire hose a firfighter would use. The larger their size, the more water can flow through them. Cows works just like that. Every client and server has a different size “pipe” between them carrying the packets. The larger the “pipe,” the more packets it can send at once. At home, you probably have a 15 Mbps internet connection. At school, we have a 1,000 Mbps internet connetion, so we have tons of cows.

1The internet, as we learned, is a vast collection of clients and servers that span the globe. Although we have learned about IP addresses and network switches, there are a few more things that are involved with how our devices communicate.

5Ping. If you are a gamer, you probably watch for good ping times. So what is ping? Its purpose is to see how long it takes for your computer to send a single packet from your comuter, across all the servers between your computer and the server you are talking to (such as the Fortnite server), and for it to send that packet all the way back to you. If your ping time is between 50 and 100 ms (1 ms is 1/1000th of a second), you are in the avrage range. Anything below that is considered a good ping time! If your ping time is over 100 ms, your game is going to have bad lag!

2Vocabulary

Computer networks use a large number of vocabulary words to describe how your dta flows across the internet. Here are a few more you will want to recognize.

4Packets. Everything that flows across the internet, whether it is a picture, a video, or simple words on a website have to be broken down into small pieces called packets. Each packet works like an envelope that the post office delivers. Each pacet has the IP address of the server that is sending it, the actual contents of the packet, and the IP address where the packet is suposed to go. A packet can only contain 65,535 bytes of data, so it takes 80 packets to download an average MP3 song.

6LAG. Gamers know lag. They know lag is bad. Brad is sad, he has lag. So what is lag? Well, just like driving from Rupert to Twin Falls, it takes a certain amount of time to trael from your computer to a server. Say the Fortnite server can normally handle a million players at once. If they get too many more players their cows is used up and their server gets slow. The servr is trying to deal with all those extra players and the cows is used up. This is lag. It is when the server is extra busy, and the cows is used up.