**Topic 2: Internet Services**

1. What is an Internet Protocol Address (e.g. 192.168.1.15) ?
   1. What do the numbers mean?
   2. How is it related to a website name (Domain Name)?
   3. How does it allow computers to identify and locate each other?
   4. Who owns and controls IP numbers? Are IP numbers worth money?
2. IPv4 (Internet Protocol Version 4) compared to IPv6 (Internet Protocol Version 6)
   1. What is the difference?
   2. What are some limitations of IPv4?
   3. How will IPv6 address these issues?
   4. What is the plan for replacing IPv4 with IPv6?
3. Domain Name
   1. What is a domain name?
   2. How are domain names related to IP numbers?
   3. What do the suffixes like “.com”, “.org”, “.ca” mean?
   4. Who owns and controls Domain Names?
   5. Is there a standard format for domain names or can each country define their own standard?
   6. How can you get a domain name? Are they worth money?
4. Domain Name Server
   1. How does a DNS (Domain Name Server) work?
   2. What happens if your phone or computer cannot find a DNS?
   3. Where are they located in the Internet? How many are there?
   4. What happens if you make changes to a domain name or its related IP number?
5. DHCP Server
   1. What is a DHCP server? What function does it provide?
   2. What happens if your phone or computer cannot find a DHCP Server?
   3. Where are they located in the Internet?
6. Gateway Server
   1. What is a Gateway server? What function does it provide?
   2. What happens if your phone or computer cannot find a Gateway Server?
   3. Where are they located in the Internet?
7. Network Router / Network Switch
   1. What is a Network Router? What function does it provide?

Routers connect networks.

* 1. What is a Network Switch? What function does it provide?

Switches create a network.

* 1. Where are they located in the Internet? How many are there?

These two pieces perform very similar functions, but are very distinct in their features once you closely examine it.

* 1. Provide an example pathway from your phone to your favorite web site through a series of switches and routers. Show how domain names and IP addresses are used.

1. Local Area Network (LAN)
   1. What services and hardware components are part of a LAN?

Switches are a primary hardware component in LANs. They enable network communication. Servers are enterprise class computers providing the workplace with services ranging from messaging, virus protection, applications and collaboration tools. Servers are a crucial element to a LAN.

* 1. Provide a labeled diagram of a typical LAN.

1. Wide Area Network (WAN)
   1. What services and hardware components are part of a WAN?

A wide area network (WAN) is a computer network that extends over a massive distance

* 1. How is a WAN different from a LAN?

LAN is typically faster and more secure than WAN. WAN enables more widespread connectivity over range