Networking Basics
by Barry Cowen

1. **A network consists of two or more computers that are linked together to share data and information. Network types are: Peer to Peer, Client, and Cloud.**
2. **Networks can be wired, wireless, or combinations of both.**
3. **Networking requires a high-speed broadband (DSL, Cable) connection.**
4. **Most home networks are set up as Local Area Networks (LANs).**
5. **Every computer or device connected to the Internet is assigned a unique IP (Internet Protocol) address. IP addresses can be static or dynamic. Dynamic addresses are less problematic and are much less likely to be hacked.**
6. **A router is a hardware device with a built in firewall that stops unauthorized access from outside of the network by directing traffic to and from the computer.**
7. **An access point is a bridging device for connecting a wired and wireless network together. Access points are typically wireless routers or stand-alone devices that plug into an Ethernet hub, switch, or router.**
8. **Two basic cables/connectors are used: RJ-45 (Ethernet) and RJ-11 (Telephone)**
9. **Wired connections are faster than wireless connections.**
10. **A wireless router or gateway device makes it possible to share high-speed Internet access and connect all the computers and printers in your home.**
11. **Wireless standards in general use are 802.11 a, b, g, n, and 802.11 ac.**
12. **Place the router in an elevated location that gives the best possible access, maximizes the signal range, and minimizes interference.**
13. **On your router's configuration page, change the default Service Set Identifier (SSID) that identifies your network settings to prevent unauthorized access and disable SSID broadcasting to prevent others from snooping or using your network.**
14. **For home or office networks, on your router's configuration page, set the wireless Encryption level to WPA2 or higher. WEP is the least secure level.**
15. **Use the same manufacturer for all wired and wireless products to optimize compatibility across all devices.**
16. **Peripherals such as wireless printers are networked using the same router configuration information.**
17. **If you lose an Internet connection, perform a power cycle. Turn off your computer. Unplug the power plug from the router or modem/router or the cable modem. Wait 20-30 seconds. Reconnect the router and cable power plugs, wait until all of the lights are a solid color or flashing as applicable, turn on your computer and try to reconnect to the Internet. This procedure usually restores the IP address and functionality of all network connected devices including wireless printers.**
18. **If you need help, go to the device manufacturer's web site or call their technical support number. Comcast has an excellent basic networking tutorial on their site.**