So You Want to Buy Internet Access...

Maybe you just moved into a new home or apartment and you want to be able to access the Internet. Or maybe you’ve had Internet access for years and you’re thinking about switching Internet Service Providers (“ISPs”) or plans. Either way, you have questions: What “speed” do I need to do all the things that I like to do on the Internet? What equipment do I need to access the Internet? Should I buy the equipment, or lease it from my ISP? How can I get the most out of my home Wi-Fi network? We have answers.

How Much Speed Do You Really Need?

When you choose an Internet plan, you have to decide how much speed you want. On the Internet, “speed” is a measure of how quickly you can download (or upload) data. Since digital data is made up of “bits,” Internet speeds are measured in terms of the number of “bits per second” that you can download or upload, or, more often, in “megabits per second” (“Mbps”). In New York, ISPs offer a variety of speeds, from as low as around 6 Mbps, all the way up to 100, 200, 300 and even 1,000 Mbps. That’s a lot of speed, but how much do you really need?

To answer that question, start with these:

1) What will you be using the Internet for? Different Internet applications require different minimum speeds in order to work properly. For example, Netflix recommends that you have at least a 5 Mbps connection in order to watch movies in High Definition, Skype recommends at least 1.5 Mbps for a video call, and Microsoft recommends 3 Mbps for online gaming on its Xbox Live platform.

2) How many devices will be using your home Internet connection at the same time? The speed that comes into your home will be split among all the devices using it at once. So if you need 5 Mbps to watch a movie on your laptop at the same time that your spouse needs 3 Mbps to play a video game on their tablet and your two kids each need 1.5 Mbps to make video calls on their phones, you will need at least 11 Mbps to keep everybody happy. If you also have so-called “Internet of Things” devices, like

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**Internet Glossary**

- **ISP**: “Internet Service Provider” – the company that you pay to connect you to the Internet.
- **Broadband**: The Federal Communications Commission defines broadband Internet speeds as any speed at or above 25 Mbps download and 3 Mbps upload.
- **Modem**: A piece of equipment that connects your devices to your ISP and the Internet.
- **Wi-Fi**: The technology that allows you to connect devices to a router wirelessly using radio waves.
- **Router**: A piece of equipment that allows you to connect a number of devices to your modem, either with cables or wirelessly using Wi-Fi.
- **Gateway**: A combination of a modem and router in a single box.
- **Mbps**: “Megabits per second” – the unit of measurement for Internet speeds.
- **802.11**: An engineering standard used in Wi-Fi technology. Routers using different 802.11 standards (e.g. 802.11ac, 802.11n, 802.11g) have different maximum data rates.
thermostats, baby monitors, security cameras or refrigerators that use your Internet connection, you’ll need even more speed.

3) **Will your devices be connecting to the Internet over Wi-Fi?** The amazing conveniences of connecting wirelessly to the Internet come at a price; Wi-Fi speeds are almost always slower than wired speeds. A number of factors contribute to the slowdown over Wi-Fi, including: signal interference from things like cordless phones, baby monitors, microwave ovens and other Wi-Fi networks; physical interference from walls and furniture; and the distance between your device and router. So if you want to watch streaming movies on your tablet in bed, you should make sure that your router is close to your bedroom, not hidden behind a bookshelf two rooms over.

**What Equipment Do You Need?**
To connect to the Internet at home, you need two pieces of equipment: a computer (or other device, like a phone or tablet), and a modem. If you want to connect to the Internet over Wi-Fi, you’ll also need a router. These days it is common for modems and routers to be combined into a single box, often called a “gateway.” You can rent a modem and router from your ISP, or you can buy them yourself. If you decide to rent this equipment from your ISP, be sure to ask them if you are getting the right equipment for the speed level you’ve signed up for. If you decide to buy your own equipment, just check with your ISP first to be sure the equipment you buy will be compatible with your ISP’s network. Whether you rent or buy, keep in mind that, as technology evolves, modems and routers need to be able to handle more and more speed. So make sure that you’re getting equipment that can handle the speed you decided you need.

**How Much Speed Are You Actually Getting?**
Once you’re all set up with the equipment you need to access the Internet and a promise from your ISP to deliver a certain speed to you, you should check to see what speed you’re actually getting. There are a number of tools that you can use to check your speed, including Measurement Lab’s Internet Health Test <<http://internethealthtest.org>>, Ookla <<www.speedtest.net>> and DSL Reports <<www.dslreports.com/speedtest>>. To use these tools, simply type in their Internet address and follow their instructions.

If the speed that you measure is not the speed you are paying for, call your ISP to find out why. The problem could be as easy to fix as moving your router to a better location or changing a setting on your device to make sure that it is using the fastest Wi-Fi technology available. But the problem might also be one that only your ISP can fix. For example, your ISP might need to provide you with a new modem or router, or perform maintenance on its network.