

Programmable, Smart, & Learning Thermostats

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A “programmable thermostat” is a digital thermostat that allows the resident to program at least 2 different thermostat settings within a 24 hour period. These settings can run from 1-7 days. They are available from most retail stores for \$50-\$150. Most homeowners can install them in less than 30 minutes. A “smart” thermostat, like a smart phone, has a WiFi connection enabling remote access to the thermostat by a computer, tablet, or smartphone, via internet connection. All smart thermostats are also programmable thermostats, but not vice versa. Smart thermostats retail for \$150-\$250 and can be installed by the homeowner or professionally. However, you need a home WiFi network to use the smart features. A “learning” thermostat is a smart thermostat that you don’t have to program. Basically, you treat it like a manual thermostat, adjusting the temperatures throughout the day. After a few days, the learning thermostat will remember your thermostat settings and automatically adjust when needed. These retail for \$250-\$450, and can be installed by the homeowner or HVAC professional.

If you struggle programming your thermostat, value elegant looks, a bright display, and feedback from the thermostat (the leaf rewards it gives you), then the Nest learning thermostat is for you (retail \$250). However, you should install at least 2 occupancy sensors per HVAC system for better comfort. If you are looking for more data or more thermostat interactions through mobile devices, then the Ecobee Smart thermostat is for you (retail \$300 plus professional installation). The Ecobee Smart thermostat (<https://www.ecobee.com>) is not only a smart thermostat, but also a data logger, which records indoor and outdoor temperature, indoor humidity, thermostat set points, and air handler run time, all of which you can access and download anytime via an internet connection. This is enough information for the savvy homeowner to diagnostic their own indoor comfort problems.

Despite what you read on the internet, there is much debate and little evidence on the energy efficiency of programmable thermostats. Pick a thermostat that you are comfortable using and will increase your comfort level within your home.