

Living Smart: New thermostats can 'learn' home's routine

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Programmable thermostats have long been considered an effective tool to help homeowners manage the operation of their heating and cooling systems.

Consumers can program the thermostat so the heating or [cooling system](#) comes on and goes off at certain times of the day or on certain days of the week.

At one time, programmable thermostats were the darlings of [energy efficiency](#). Too often, though, consumers don't program their thermostat, or program it incorrectly. In fact, some studies supported by the U.S. EPA state that programmable thermostats can actually increase [energy consumption](#) if not properly programmed.

When Dallas resident Alan Prather decided it was time to ditch his old non-programmable thermostat in an effort to reduce his [energy bills](#), he looked at all of his options, including a programmable thermostat. Instead, though, he invested a little more money into a new type of thermostat—one that learns the schedule and temperature preferences of the homeowner and creates a personalized schedule based on temperature setting preferences and activity in the home.

Learning thermostats - also known as smart thermostats - can cost upwards of \$200, but Prather feels they're worth the investment. During the scorching Dallas summers, prior to installing his learning thermostat, Prather said his energy bills would exceed \$300. This summer, they were

down to about \$200.

"I love it," Prather said. "My [air conditioning](#) bills were beginning to get really outrageous. Anything you can do to get the most out of what you've got without having to spend \$10,000 to \$15,000 without replacing the whole (HVAC system) is a good thing. In three months, it paid for itself."

Learning thermostats work in conjunction with your [wireless Internet](#) and take about a week or two to "learn" the homeowners' preferences and patterns. The system notes manual temperature adjustments and creates a schedule based on your family's living habits. Built-in [sensors](#) can detect if someone is in the room or even in the home. If the system detects no one is home, it will adjust its temperature to a predetermined limit. For example, you could establish a minimum temperature of 60 degrees in the winter, or a maximum temperature of 80 degrees in the summer and the system will ensure the temperature never falls below or exceeds those thresholds.

"The first week or so, it's learning from what you adjust it to," said Nathan Rutledge, general manager of JD's A/C in Longview, Texas. "After that, it's learning based off activity in its area. For example, here in our office, there's always somebody moving around, so it knows we're there. At your house, if somebody is not there and there's no activity, the thermostat knows that and adjusts to whatever temperature you want when you're not there. It does a better job of saving energy, because it knows when you're there and it knows when you're not. A conventional thermostat doesn't know if you're there or not. It just goes by how you program it."

Different learning-type thermostats have different features. Some, for example, offer reminders for when it's time to change air filters. Others can show the temperature outside and compare it to the inside. Not all

systems work with all types of heating and cooling systems. Some systems, for example, won't work with air conditioners with two-stage cooling. It's important you talk to a qualified HVAC specialist about the type of learning thermostat that is best for your application.

One nice feature is that homeowners can access their system remotely, via a smartphone, computer or tablet device and change the temperature settings.

"Let's say you have a secondary home or a weekend house at the lake; you can adjust the [temperature](#) to what you want before you get to the house to make sure you're comfortable before you get there," Rutledge said. "You can also look at a report that shows how much energy you've saved. It gives you a month-by-month comparison."

Prather loves his [programmable thermostat](#) so much, he's trying to convince his sister to invest in one.

"She has a condo in Utah for skiing and a couple of years ago, somebody turned the heat off in January," Prather said. "It was 20 below zero and there was no heat. Every water pipe in the house broke. The default (setting) I have is 45 degrees. It'll come on if the house gets down to 45, no matter what, which I think is a good thing.

"It really does learn well. Most of these programmable thermostats, people don't use them because they forget to program them. This one, in about 10 days, figures out when you're here and when you're not. It's been really easy."

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