



## March: Install a Programmable Thermostat

**Task:** Install a programmable thermostat and set it to heat or cool your space only when needed.

Did you know that properly using a programmable thermostat in your home is one of the easiest ways you can save energy, money, and help fight global warming? A programmable thermostat helps make it easy for you to save by offering four pre-programmed settings to regulate your home's temperature in both summer and winter - when you are asleep or away. <http://energy.gov/energysaver/articles/thermostats-and-control-systems>

**Advanced:** 1) Experiment with greater setbacks (cooler in the winter, warmer in the summer) to find the your family's minimal heating and cooling needs; 2) help a friend install a programmable thermostat.

### What you should know:

#### Installation

- Install your programmable thermostat unit on an interior wall, away from heating or cooling vents and other sources of heat or drafts (doorways, windows, skylights, direct sunlight or bright lamps).
- Read all instructions and proceed carefully! Programmable thermostats are a low voltage wiring installation and involve anywhere from 2–10 wires, depending on your type of heating and cooling system. However, you should shut down your electricity during any replacement. The previous attachment points will reconnect your new unit.
- If the job requires more than just a replacement, call your certified HVAC professional to ensure proper installation, as well as operation of your heating and cooling system. It's a good idea to upgrade an old manual thermostat to a programmable unit if you're replacing a CAC or heating system given that programmable thermostats are far more accurate and will maximize the efficiency of your new system. Heat pumps may require a special unit to maximize energy savings year-round. Talk to your retailer or HVAC contractor before selecting the thermostat.
- If you're replacing a manual thermostat that has a mercury switch, be careful not to break the tube that holds this toxic substance. Contact your local recycling/hazardous materials center, or the manufacturer of your new thermostat, for advice on proper disposal.

To see a video demonstration, go to <http://www.thisoldhouse.com/toh/video/0..20053916.00.html>

Through proper use of a programmable thermostat (using the 4 pre-programmed settings) you can save about \$180 every year in energy costs.

### **Rules of Thumb for Proper Use:**

- Keep the temperature set at its energy savings set-points for long periods of time (at least eight hours), for example, during the day, when no one is at home, and through the night, after bedtime.
- All thermostats let you temporarily make an area warmer or cooler, without erasing the pre-set programming. This override is canceled automatically at the next program period. You use more energy (and end up paying more on energy bills) if you consistently “hold” or over-ride the pre-programmed settings.
- Units typically have 2 types of hold features: (a) hold/permanent/vacation; (b) temporary. Avoid using the hold/permanent/vacation feature to manage day to day temperature settings. “Hold” or “vacation” features are best when you're planning to be away for an extended period. Set this feature at a constant, efficient temperature (i.e. several degrees warmer temperature in summer, several degrees cooler during winter), when going away for the weekend or on vacation. You'll waste energy and money if you leave the “hold” feature at the comfort setting while you're away.
- Cranking your unit up to 90 degrees or down to 40 degrees, for example, will not heat or cool your house any faster. Most thermostats, including ENERGY STAR qualified units, begin to heat or cool at a set time, to reach setpoint temperatures sometime thereafter. Units with adaptive (smart/intelligent) recovery features are an exception to this rule — Adaptive recovery units are constantly calculating the amount of time required to heat or cool the house, so that it reaches that temperature when the homeowner programmed it. By “examining” the performance of the past few days the thermostat can keep track of the seasons. In this way, your house is always at the comfort levels when occupied, but saving the most energy when unoccupied.
- Many homes use just one thermostat to control the whole house. If your home has multiple heating or cooling zones, you'll need a programmed setback thermostat for each zone to maximize comfort, convenience and energy savings throughout the house.

### **How Do You Choose the Right One for You?**

To decide which model is best for you, think about your schedule and how often you are away from home for regular periods of time — work, school, other activities — and then decide which of the three different models best fits your schedule: the 7-day, 5+2-day, or the 5-1-1-day.

**7-day models** are best if your daily schedule tends to change, say, if children are at home earlier on some days. They give you the most flexibility, and let you set different programs for different days — usually with four possible temperature periods per day.

**5+2-day models** use the same schedule every weekday, and another for weekends.

**5-1-1 models** are best if you tend to keep one schedule Monday through Friday and another schedule on Saturdays and Sundays.

**For additional tips on choosing, installing, and using a programmable thermostat, see <http://greenlivingabout.com>.**