



Everyday Environmental Stewardship

Programmable Thermostats

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Key issue:

Why do I need a Programmable Thermostat?

Stewardship Opportunity

Buying Programmable Thermostats

Non-Programmable thermostats are simple, easy to use, and inexpensive. However, they also allow a large margin for wasting energy and raising heating and cooling costs. *Programmable thermostats* take virtually no time to learn how to use and pay for themselves in energy savings in a year or less. Replacing non-programmable thermostats with programmable thermostats will save energy, reduce heating and cooling costs, and make your home, office, and house of worship more enjoyable.

Programmable thermostats automatically adjust your home's temperature, thus eliminating the hassle of changing the settings when you are running out of the house leaving for work, or going to bed. You can also program these thermostats to change temperatures when you are away or when you are asleep. The multiple time settings permit you to schedule heat or AC when and only when you want it. *Programmable thermostats* with an “**adaptive recovery**” feature even anticipate how long it will take to reach your desired temperature and start your system in just the right lead time!

The main virtue of a *programmable thermostat* is that it changes the temperature many times throughout the day, and 7 days a week, to your desired settings. On manual thermostats, changing settings in a house multiple times a day for multiple zones can be tiresome and, even worse, easily overlooked. The *programmable thermostat* does all the work for you, saves energy and can lower heating and/or cooling costs by \$150+/year. Since these thermostats are digital, they contain no mercury and are better for the environment.

Stewardship Opportunity #1 Choosing A Thermostat

All *EnergyStar* programmable thermostats offer four programmable temperature settings over each day. They come with some or all of the following features: digital, backlit displays, touch screen programming, voice and/or phone programming, hold/vacation features, indicators which tell when it is time to change air filters, indicators that signal malfunctioning of heating/cooling systems, and adaptive recovery features (control features that senses the amount of time it will take to reach desired temperatures). Go to

http://www.energystar.gov/index.cfm?c=thermostats.pr_thermostats

for more information. This same site provides a complete product list of Energy Star qualified thermostats, manufacturer list, and a savings calculator which computes how much money per year you will save by switching to a programmable thermostat. (See the links at the right side column.)

Stewardship Opportunity #2 Installing a Thermostat

Programmable thermostats are easy to install. Voltage can range “low” on up, from 24 to 240 volts. Depending on the type of your heating and/or cooling system, there are 2 to 10 wires. The previous attachment points in the wall will hold up your new programmable thermostat. If the installation involves more than just a simple installation, you should call your local HVAC service person to ensure a safe, proper installation. Also, if your old thermostat has mercury in the switch, make sure to take it to your local recycling/hazardous center. These cannot be thrown away in the trash.

Programmable Thermostats - Proper Use Guidelines

Here are some energy saving tips from the *EnergyStar* web site at

http://www.energystar.gov/index.cfm?c=thermostats.pr_thermostats_guidelines.

- ✚ **Set-Points** — Keep the temperature set at its energy savings set-points for long periods of time when no one is at home, and through the night, after bedtime.
- ✚ **Override** — All thermostats let you temporarily make an area warmer or cooler, without erasing the preset 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 override the preprogrammed settings.
- ✚ **Hold** — 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 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.
- ✚ **Timing** — 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 *EnergyStar* qualified units, begin to heat or cool at a programmed time, to reach set-point temperatures sometime thereafter. Units with adaptive, “smart,” or “intelligent” recovery features are an exception to this rule - they reach desired temperatures by the set time, since they use formulas that are based on your historical use.
- ✚ **Location** — Install your 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).
- ✚ **Zones** — 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.
- ✚ **Batteries** — Don't forget to change the batteries each year. Some units indicate when batteries must be changed.

And for the “How I Did It” thermostat story of MIP&L’s own *Carbon Bigfoot* go to...

<http://www.mipandl.org/resources/MIPL.CarbonBigfoot11.07.pdf>