



## Managing your thermostat for comfort and energy savings

Changing the thermostat to a lower temperature in the winter and higher temperature in the summer saves money. “Setting back” the temperature for as little as eight hours at night or during the day when the home is unoccupied saves money too.

### WHAT A THERMOSTAT DOES

A thermostat does two things. It compares the actual room temperature to the thermostat temperature you select and it gives start-and-stop commands to the heating and cooling system in order to reach and maintain the temperature setting you’ve selected. With older thermostats, you adjust your temperature settings by manually turning the dial or moving the levers to a different temperature. Newer, electronic programmable thermostats can be programmed to adjust the temperature automatically for the time of the day and day of the week.

### BALANCING COMFORT AND ENERGY SAVINGS

#### Will a programmable thermostat really save me money?

It can if the programmable features make it easier for you to adjust the thermostat settings when you are asleep or away. If you already change the thermostat settings by hand, the programmable thermostat may not save you much money, though it could make life more convenient.

#### How much does my thermostat setting affect my heating bill?

In heating mode, reducing your thermostat setting by 1 degree Fahrenheit for eight hours will save about 1 percent on your heating bill. In cooling mode, each degree you set your thermostat above 75 degrees Fahrenheit cuts your cooling costs by about 3 percent. Focus on Energy recommends not adjusting the



temperature more than 5 degrees for daily and nightly setbacks. Greater variances may not save a substantial amount of energy and may create issues with condensation on windows.

#### Doesn't it take more energy for my furnace to get the temperature back to the normal setting after it's been turned down for a long time?

No, it doesn't. While it's true that the furnace runs longer when it's warming up the house from the setback temperature, it doesn't run at all while the house is cooling down to the lower setting. It also saves energy because it takes less fuel to maintain the lower temperature. Longer setbacks will save more energy.

#### Are there times I shouldn't set back my thermostat?

There are several things you'll want to consider when determining when and how much to set back your thermostat.

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- Do you have water pipes that are prone to freezing (located in exterior walls)? Don't set back the thermostat so low as to risk freezing your pipes.
- On the coldest days of winter, the recovery period from a setback may be longer. To compensate, you might consider adjusting the time at which the furnace brings the heat back on, or reducing the amount of the setback.
- If you get excessive condensation on your windows when you set back your thermostat, you may need to reduce the setback to control the humidity level in your house. To learn more, see the *Controlling Home Moisture Problems* fact sheet, which is available on [focusenergy.com](http://focusenergy.com).
- Older boiler systems may require longer recovery times than new systems. Additionally, setting back the thermostat is not recommended for some boiler systems.

### What's the difference between the "hold" and "temporary" settings?

Most programmable thermostats have two override options: hold/permanent and temporary. Hold will keep the thermostat at the override temperature until you tell it to return to the pre-programmed temperature. This mode should be used for extended times away from home, such as a vacation. The temporary override mode will only adjust the temperature until the next pre-programmed period. This mode should be used for short-term adjustments.

### If I turn the thermostat way up, my home will warm up more quickly, right?

No, you'll just use more energy. The thermostat turns the furnace on and off, it doesn't control how much heat the furnace produces. Your home will heat up just as quickly at a thermostat setting of 70 degrees as a thermostat setting of 78 degrees.

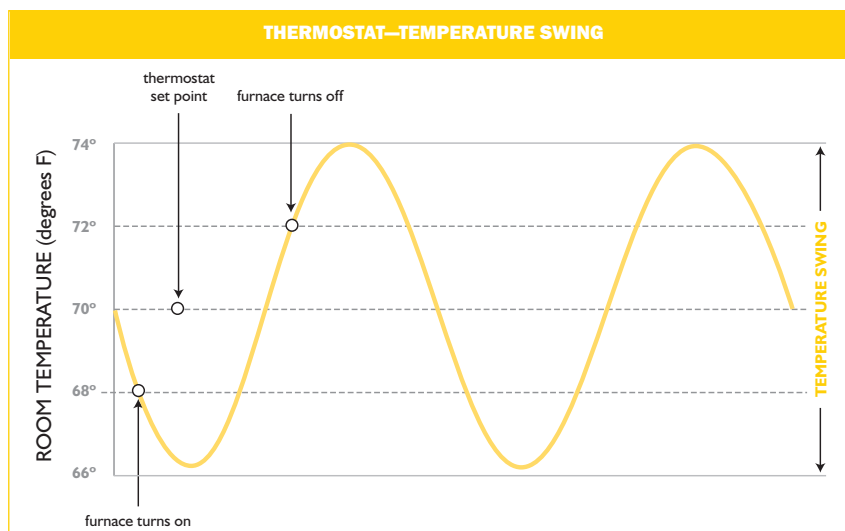
The same idea applies to cooling your house in the summer. If you've set the cooling temperature at 78 degrees, turning it down to 68 degrees won't cool the house any faster. Set it to the temperature you want in order to be comfortable.

### The temperature in my home always seems to be either too cold or too hot—what's wrong?

The temperature differential, or swing, on the thermostat may be too wide. Thermostats are designed to operate in a certain band of temperatures. The thermostat turns the furnace on when the temperature dips below the band and turns the furnace off when the furnace gets above the band. If the temperature in your house is too hot or too cold, the temperature swing may need to be adjusted. Refer to your owners guide or ask your contractor for help adjusting this.

### My furnace seems to turn on and off a lot—is something wrong with my thermostat?

It could be that the temperature swing is too narrow on the thermostat. Or the furnace filter may be clogged, which reduces airflow and causes the furnace to



**This hypothetical thermostat has an 8-degree temperature swing, resulting in room temperatures as low as 66 degrees and as high as 74 degrees.**

overheat. The overheated furnace turns itself off until it cools down, but because the house hasn't warmed up to the right temperature, the furnace goes right back on.

#### **What is the “fan” switch on my thermostat for?**

The fan switch lets you run the furnace fan independently of the furnace. The switch has two settings, usually called “on” and “auto.” When the switch is set to “on” the fan will run all the time, even when the furnace is not heating or cooling. When set to “auto” the fan will run only when the furnace is heating or cooling. A common reason for operating your fan all the time is to improve air circulation, which may eliminate room-to-room temperature differences. But remember, running the fan continuously consumes a lot of electricity. Those extra hours of operation can add several hundred dollars to your annual electric bill.

#### **I'm thinking of purchasing a new furnace. Should I get a new thermostat as well?**

Depending on the type of thermostat you have and the type of furnace you are installing, you may have to replace your thermostat. When replacing your thermostat, be sure to look for one with features that will be the most beneficial to you. Think about your schedule and how often you are away from home for regular periods of time and then decide which model best fits your schedule: 7-day, 5+2-day, or 5-1-1-day programming. Many models also come with additional features, such as hold/vacation features and indicators that tell you when it's time to change your filter.

#### **Can I install a new thermostat myself?**

Some thermostats are easy to install; however, most people should contact a heating contractor.

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