Keeping warm vs keeping the bills down

Some of us remember when keeping warm in winter meant fetching coal or logs, lighting a fire, sitting close to it and putting on a sweater. Homes and lives have become more complicated. Most British homes now have central heating and we have generally got the idea that we pay less for energy if the heating is efficient, the home is well insulated and we open the windows no more than necessary. It's even normal again to keep warm by wearing warm clothes indoors!

To help us, there is plenty of advice available, particularly from the Energy Saving Trust: see https://energysavingtrust.org.uk/energy-at-home/. Even so, there is something that many people find difficult: using the heating controls so that it is as warm as you want it to be, when you want it, not too hot and not heated when you don't need it to be. Overheating wastes money – money that could be used when you most need heating or to invest in more efficient heating, lighting, hot water, etc. And, in the back of the mind, there's always the carbon dioxide emissions and other pollution that result from using energy unnecessarily. But the combination of timers, thermostats and power controls can make it difficult to get what you want. And it's not helped by the obscure (or missing) instructions and the tiny buttons and displays.

So, what are those controls and how should you use them? There's no fixed answer because it usually requires a little experimentation to get the heating "tuned". But the effort is worth it. And the whole family can get involved. The advice here is focused on the types of control that are generally found with gas central heating with water-filled radiators but the same general points apply more widely. If you have the latest tech, you might have all the controls integrated in a single remote device or an app on your phone.

1. The boiler – source of power

The boiler produces the hot water that circulates through the radiators. It probably also produces the hot water that comes out of your taps but the two should be independently controllable: you can heat the home without heating the water and *vice versa*. That might seem obvious but I do meet people who have experienced older systems that are more limited in how they work.

The boiler should have a control to select the water temperature. If you can't find it, ask the service engineer when you next have your annual service. A modern boiler is generally more efficient at lower water temperature settings so try somewhere in the middle of the range (which should be enough, at least in spring and autumn). You might need to set it a little higher in colder weather. But get advice from your service engineer and then experiment with how high it needs to be to keep your home warm.

2. The thermostats

As a minimum, there should be a thermostat in one room. This device controls whether the boiler is heating the whole home or not. Better control is achieved by also having a "thermostatic radiator valve" (TRV) on the radiators in each room that does not have a room thermostat. This allows you to control the temperature of each room independently, so that you are not heating the whole house to the same temperature. For example, most people like to have the bedrooms a little cooler than living rooms. And the kitchen might not need heating at all while you are cooking.

Although thermostats have been around for a long time, there is still a lot of misinformation and confusion about them. A thermostat is a kind of automatic switch. You set the temperature you want the room to be. When the room reaches that temperature, the thermostat turns off the heating. That's it – nothing else. Turning it higher does not make the room get warm any more quickly.

The complication is knowing what temperature to choose. And thermostats sometimes do not even have a temperature scale – just a few numbers (e.g. 1 to 6). So you might need to experiment: is the room warm enough but the radiator is still hot? Turn the thermostat down a little and check again in half an hour. Is the room too cold and you are already warmly dressed? If the radiator is hot, the room is still heating up – leave it half an hour. If the radiator is cold, check the boiler or timer – is the system on? If so, turn the thermostat up a little. And so on. Once the thermostat settings are where you want them, you should not need to make further adjustments unless you change how you use the room.

One warning: rooms that you are not using do not need to be as warm but beware having too great a temperature difference between rooms. A few degrees is generally fine but cold rooms can cool the adjacent rooms. And cold rooms in a warm home can suffer from condensation and mould.

3. The timer

There should be a timing control so that you can set which times of day your heating is active. While it is active, the thermostats will have the final say on whether the home is actually being heated. So, for example, if you are away, you can keep the heating on but reduce the room thermostat setting just to prevent pipes from freezing. Some timers set the same pattern every day. Others ("seven-day timers") allow you to set a different pattern for each day. The timer might be integrated into the boiler, or wired into a wall or operated wirelessly.

What the timer does is simple. Using it is often more complicated than seems necessary. Certainly I do not look forward to learning how to use a new timer. If you have the instructions, don't try to make sense of them by reading them: just try to follow them. Again, your service engineer might be able to help, or ask a friend or neighbour.

Enjoy experimenting, keep warm and save energy.