Heating

We can reduce our energy use for heating by living at a lower temperature, using solar gain instead of fossil fuel or insulation to reduce heat loss

The most environmental form of Heating is by using solar gain which has a zero-carbon footprint. This is followed by using Green electricity to power a heat pump. If you have underfloor heating then this could be economic to install.
The worst form of Heating is open fires or wood burners burning either coal-based products or wood-based products. They are generally very inefficient, produce significant amounts of carbon dioxide and dangerous particles.

Insulation: Keeping the warmth at home

Many of us may be feeling that our homes aren't quite as warm as we would like them to be, or that we're suddenly spending a lot more on heating.

If this is you, then it's time to have a think about insulating your home. Home insulation involves adding a layer of material in the loft or roof, under the floor or in the walls to keep the heat in - like putting on a coat on a cold day. If you want to make your house warmer and cut bills, insulation should be at the top of your list.

If you end up using less gas, oil or electricity to heat your home, you don't only save money but you cut you carbon emissions. Collectively making our homes more energy efficient is one of the best things we can do to combat runaway climate change.

The first thing to do to make your house warmer and reduce your bills is to **Prevent draughts** close doors and to draw curtains at night which will reduce heat loss from the rooms that you are sitting in. Cut out cold draughts by filling gaps around doors and windows and blocking unused open chimneys. Although controlled ventilation is important to prevent damp and condensation, uncontrolled draughts waste heat and energy. You can buy off-the-shelf products to seal around doors and windows, and ready-made products to draught proof keyholes and letterboxes. There are also simple ways to stop draughts from floorboards, skirting boards, loft hatches and more. Find out more on how to draught proof your home. https://energysavingtrust.org.uk/advice/draught-proofing/

Add **cosy furnishings** Rugs, curtains, and draught excluders can all help stop heat escaping from your home, and are especially useful options if you rent. Carpet is a better insulating material than wood or tiles and, if you have bare floorboards, it will block draughts from between the gaps too. Fitted carpets are most effective, but large rugs also work – the thicker the better. The same is true for curtains; heavy, lined materials can keep the heat in and prevent draughts, with the added benefit of keeping rooms cool in summer by minimising solar gain.

Insulate hot water pipes and tanks Reduce heat loss from your heating system by insulating pipes, tanks, and radiators. If you have a hot water tank that's not insulated, fit a cylinder jacket. They are very cheap to buy and easy to fit, but make sure it's at least 80mm (3 inches) thick. The Energy Saving Trust says that insulating your hot water tank is likely to pay for itself in just one year. Insulating all accessible hot water pipes is also an inexpensive DIY job; simply buy foam tube of a suitable diameter, cut to length, and fit around the pipes. Adding reflective panels behind radiators is another low-cost option. They prevent heat from being lost through external walls by reflecting it back into the room instead and are especially effective for radiators on uninsulated solid walls

For larger projects next look at your **walls**. If your home was built in the past 30 years, the walls are probably already well insulated. But older homes were built with much less insulation. If your home dates from around 1930-1980, it probably has cavity walls - that is, two brick 'skins' with a gap between them. Over the years, many such homes have had their cavity walls filled with insulating material - often polystyrene beads or expanding foam. This can save up to £200 a year on heating bills, so is well worth the £500 or so that it costs to install. And there are grants available for this in some cases.

Homes that are older - pre-1930s - often have solid walls. There's no gap that can be filled. But they can still be insulated by attaching a layer of material either on the outside of the house or the inside - we call this 'external' or 'internal' solid wall insulation. This can be quite a complicated job, though, and not all homes are suitable. Follow the links at the foot of this article for more information.

Homes also lose a lot of heat through the **roof**, so insulation is important here, too. Again, if your home is new or if the loft has been converted into a living space, there won't be much you can do to improve it in this regard. But if your home has a traditional loft, then it's time to check how much insulation there is. The recommended depth is now 270mm (10 inches) so if you have less than this or none at all you should definitely consider a top-up - you could save up to £400 a year. The insulation comes in big rolls, and while it's a job that a competent DIY-er could manage, there are also installers who specialise in this work. As with cavity wall insulation, there might be grants for this depending on where you live and your personal circumstances.

Look at your windows. If you need to replace your window frames then look at Double or Triple glazing to reduce the heat loss. If you want to keep your window frames then you can install secondary glazing.

Floor insulation. This is only something to think about for ground floors or floors above an unheated space like a garage. And since less heat is lost through the floor than through the walls or roof (because heat rises, as we all know!) the savings here are much less - around £40 a year.

Want to find out more? Check out the Energy Saving Trust's pages on reducing home heat loss at www.energysavingtrust.org.uk/energy-at-home/reducing-home-heat-loss. The Centre for Sustainable Energy's home energy advice pages are also a useful source of information: www.cse.org.uk/advice.

Small Changes

1. Find and block draughts.
2. Draw curtains at night
3. Fit blinds if you get too much solar gain in the summer
4. Check the insulation in the loft
5. Insulate hot water pipes and tanks.