Radiators
Sizing & Positioning

A Sizing Radiators

The size of radiator required for a room depends upon two factors. Firstly, the temperature that you want it to be able to maintain which is a relatively straightforward task and you can use Table 1 below as a guide.

Table 1 Ideal Room Temperatures

IDEAL ROOM TEMPERATURES (ºC)	
Lounge	21
Dining Room	21
Kitchen	16
Bedrooms	16
Bathroom	23
Stairs	18

Secondly, the heat loss from your room. The calculations for this are quite complex since they depend upon the size of windows, number of doors and, in particular, the construction materials used to build the house. The best calculations take every measurement of every room and especially the window sizes and outside wall sizes. They can work on a specific temperature required and even take into consideration the type of materials used in the building (to calculate "U" values) to get an accurate radiator size. Too big and the system will overshoot its temperature and be less economical to run, too small and it won't reach its desired temperature. (Some of the poorer installers get round this complex step by putting in radiators that are to big, and then fitting thermostatic radiator valves to every radiator to cut the heat down.) This calculation produces a heat loss figure in watts, of how much heat you need to warm that room up to the design temperature from -3 deg C in one hour. (*Ref. Website: www.gasman.fsbusiness.co.uk/radiators.htm*) The calculation can be done by using one of the radiator manufacturer's heat loss calculations *(Ref. Website: www.cityplumbing.co.uk/heatloss.htm or www.radcalcs.com)* and usually your installer will do this when quoting.

A quick and easy way to calculate the size of the radiator required for any room in your house is by measuring the room in cubic feet and then applying the following factors to the figure arrived at:

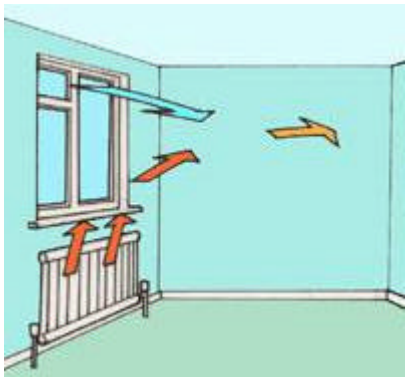
Lounges and dining rooms	Multiply cubic feet by 5
Bedrooms	Multiply cubic feet by 4
Common areas and kitchens	Multiply cubic feet by 3
For rooms facing north	Add 15%
For French windows	Add 20%
For double glazing	Deduct 10%

This will give you the output of any radiator in BTUs (British Thermal Units). Adding the total for all the rooms in your house or flat will give you the demand in BTUs for the whole house. Add 20% to the total for a hot water circulating tank and 10% for general losses. This will give you the boiler size you need for your house. (*Source:www.muswell-*

hill.com/foxandco/pages/calculating_radiator_sizes.htm). It is very unlikely that any radiator will match the exact heat required, so select the first size of radiator above the heat requirement. With rooms greater than 6 metres (18 ft) in any one direction, it is worth considering distributing a number of radiators to minimise the thermal gradient within the room.

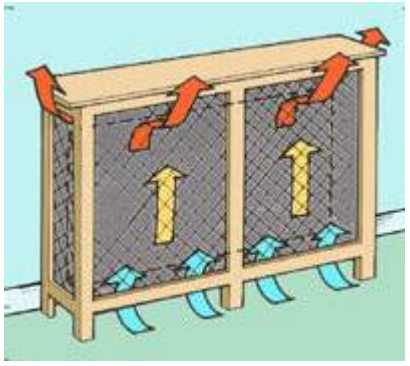
B Positioning Radiators

Generally speaking it's best to fit radiators beneath the windows of a room. The reason for this is two fold. Firstly, cold air falling by the window will be balanced out to some extent by the warm air rising from the radiator. Fitting radiators on the opposite wall can actually cause a noticeable draught, since warm air rising on one side of the room and cold air falling at the other exaggerates the flow around the room.



Secondly, and purely a practical consideration, is that for the most part, the wall area beneath a window doesn't tend to have furniture in front of it. You therefore make use of unused wall space and, at the same time, do not end up shielding the radiator with a chair or the like. If you have double glazed windows, the air will not fall by the windows to anything like the same extent. Therefore you have more flexibility in positioning the radiators. This can be a big help especially if you wish to have full length curtains, which would cover the radiators if they were under the window.

On a similar point, avoid placing objects directly above radiators, as it will reduce their effectiveness. Shelves positioned immediately above can have an adverse effect so make sure they are at least a couple of inches above the radiator. If a shelf is set in this position and is reasonably narrow, the air will flow around it. Radiator covers without enough allowance for air circulation can also be a problem. Make sure air can pass freely in at the base, and out through the front at the top.



Source: www.technosolution.co.uk/diy/centralheating/CHPositionRads/PositionRads.htm