

NEXT-TIME QUESTION

Hot water/steam radiators are common fixtures that nicely warm the interiors of buildings. These radiators warm a room primarily via

- a) conduction.
- b) convection.
- c) radiation.
- d) ... all about equally.



thnx to Dean Baird

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Drewitt!



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Answer: b, convection

The exposed pipe work of the radiator is brought to a high temperature by steam or hot water. Air near the radiator is warmed by conduction. The placement of the radiator in a room allows the newly heated air to rise away from the radiator, drawing cooler air toward it. The radiator warms the cool air and the process continues. Convection! Although conduction and radiation play a role, convection is predominate.

Notice how the pipework allows for a vertical flow of air; you never see pipework in a horizontal orientation. Radiators are often painted with highly reflective silverish paint, which reduces emissivity, inhibits radiation, and allows the radiator pipes to become and remain hotter than they otherwise would—increasing their ability to drive convection.

Maybe the fixture should be called a "convector?"



Hewitt
Draw it!