

When you buy insulation it has a big letter R followed by a number. That big R number means resistance to heat flow, the higher the number the more the insulation resists the flow of heat, that means it is better at insulating.

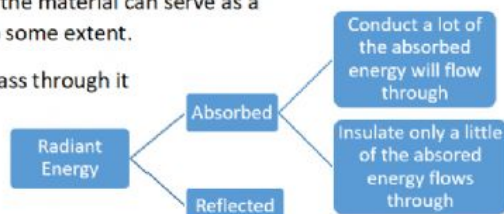


Choose whether or not the statement is true or false. If you choose False, write the term that would make the statment true in the blank.

- _____ 1. Materials that are poor conductors are *poor* insulators.
- _____ 2. The transfer of energy through matter by direct contact of its particles is *convection*.
- _____ 3. The transfer of energy in the form of invisible waves is *conduction*.
- _____ 4. Solids usually conduct heat *better* than liquids and gases.
- _____ 5. The R-value of insulation indicates its *resistance* to heat flow.
- _____ 6. Air is a *poor* heat conductor.
- _____ 7. Wind and ocean currents are examples of *conduction* currents.
- _____ 8. Energy is usually transferred in fluids by *radiation*.
- _____ 9. As water is heated, it expands, becomes *less* dense, and rises.
- _____ 10. Dark-colored materials absorb *less* radiant energy than light-colored materials.
- _____ 11. Only radiant energy that is *reflected* is changed to thermal energy.
- _____ 12. The higher the R-value of insulation the *less* resistant it is to heat flow.

Radiant energy is either absorbed or reflected. If it is absorbed the material can serve as a conductor or an insulator. All materials conduct and insulate to some extent.

If it acts more like a conductor than an insulator the heat will pass through it more easily (conduct) and less will be absorbed compared to other materials. If it acts more like an insulator than a conductor, it will absorb more thermal energy and less will pass (conduct) through compared to other materials.



For each pair of materials decide, will the object most reflect radiant energy or absorb it.

If it absorbs it will it act more like a conductor or an insulator compared to the other object.

13. a silver spoon compared to

Reflect

↑

Better conductor or insulator

Absorb

↑

Better conductor or insulator

a wooden log

Reflect

↑

Better conductor or insulator

Absorb

↑

Better conductor or insulator
14. a white shirt compared to

Reflect

↑

Better conductor or insulator

Absorb

↑

Better conductor or insulator

a red shirt

Reflect

↑

Better conductor or insulator

Absorb

↑

Better conductor or insulator
15. foil in the sunlight compared to

Reflect

↑

Better conductor or insulator

Absorb

↑

Better conductor or insulator

a sidewalk in the sunlight

Reflect

↑

Better conductor or insulator

Absorb

↑

Better conductor or insulator
16. single-pane window compared to

Reflect

↑

Better conductor or insulator

Absorb

↑

Better conductor or insulator

double-pane window

Reflect

↑

Better conductor or insulator

Absorb

↑

Better conductor or insulator
17. R-5 insulation compared to

Reflect

↑

Better conductor or insulator

Absorb

↑

Better conductor or insulator

R-35 insulation

Reflect

↑

Better conductor or insulator

Absorb

↑

Better conductor or insulator