

ThermoSense Mk1

Temperature and Heat are different but linked.

Temperature (T) is a measurement of the average kinetic energy of the molecules which vibrate in an object and can be measured by a thermometer.

ThermoSense Mk1 is a thermometer which measures from two temperature sensors Hot and Cold changes. These are displayed on your computer in Graphical and Numerical ways with the information available for personal investigation .

Temperature can be used to determine the **Internal Energy(U)** contained within an object.

Heat Energy(Q) always refers to the **transfer of Internal Energy** between objects, **not to the Internal Energy(U) contained within the objects.**

Two objects: say two baked potatoes, one large (A), one small (B) could be at the same temperature or have different temperatures.

A) At Same Temperatures

* If potato (A -large) and potato (B-small) are **at the same temperature** then **potato (A)** will have **more Internal Energy(U)** than **potato (B)**



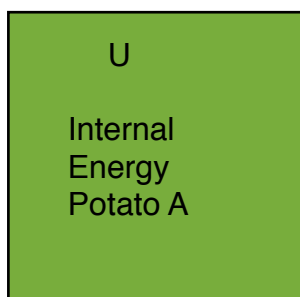
Potato A



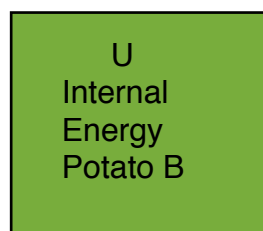
Potato B

That is the:-

Internal Energy of Potato (A) is greater than Internal Energy of potato (B)

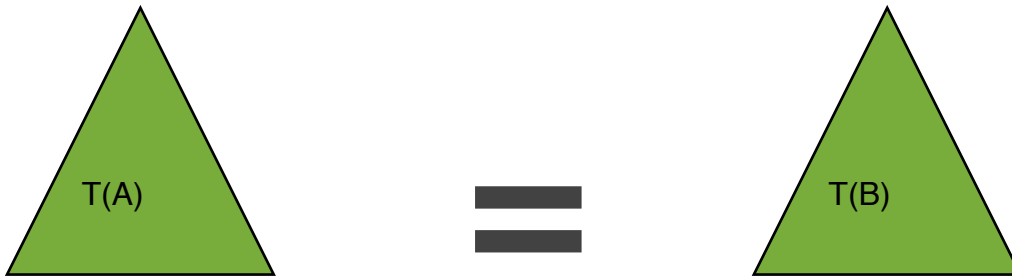


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even though

TEMPERATURE of Potato(A) = TEMPERATURE of Potato (B)



Heat Energy Transfer (Q).

*** Requires a Temperature difference between two objects.**

So if TEMPERATURE of Potato(A) = TEMPERATURE of Potato (B)

and

They touch each other, so as to be in thermal contact

There is no **Heat Energy** conduction

SO

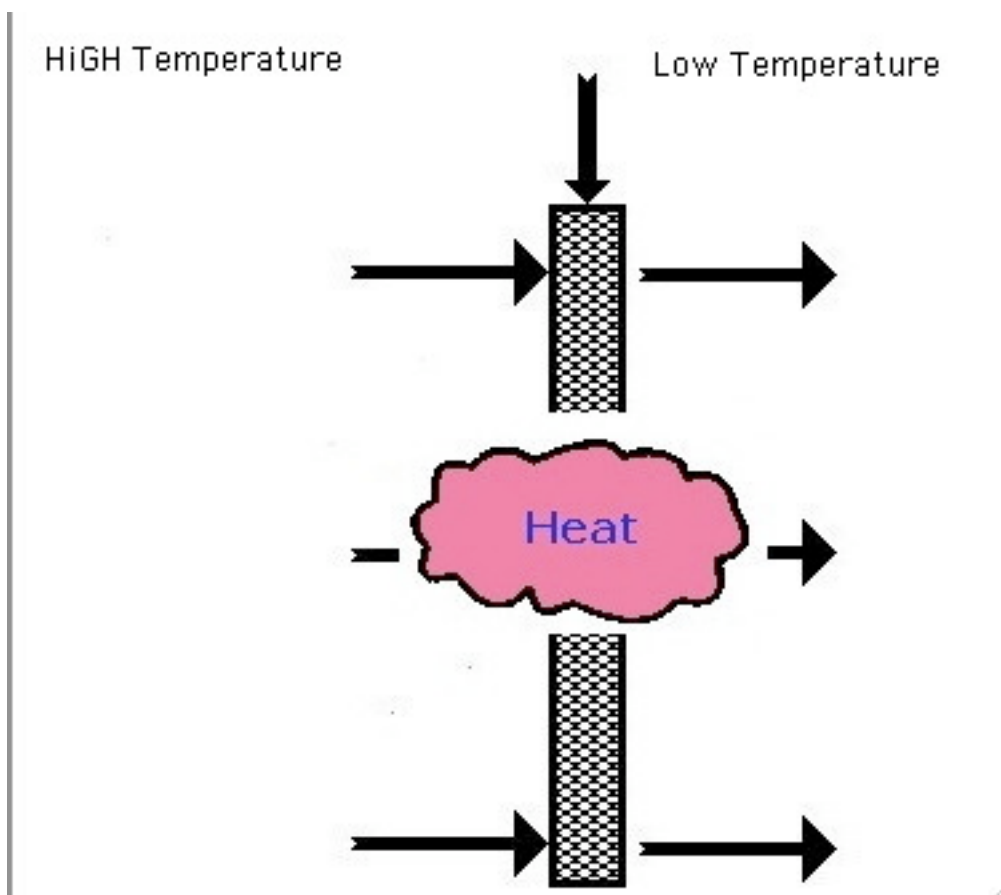
Heat Energy Transfer between Potato(A) & Potato (B)

is zero.

Q=0

B) At different Temperatures.

*** for Heat Energy (Q) to transfer from one object to another there must be a Temperature difference.**



*** Heat Energy (Q) transfers from an object at a High Temperature to an object at a lower Temperature.**

*** Heat Energy (Q) may transfer by three means:-**

To Illustrate

a) Conduction ---Finger touch on a hot surface.

b) Convection --- Draft from a gap in a wall.

c) Radiation --- Heat from the Sun on your face.

WITH THIS IN MIND WE CAN HAVE FUN AND LEARN USING IMAGING ASSOCIATES INTERNATIONAL'S THERMOSENSE MK1

ThermoSense Mk1 will enable you to make easy Temperature and Heat Transfer measurements and help you investigate Sustainable Environmental issues involving ENERGY.

Practical Measurements will increase your insight into many scientific and political Issues including GLOBAL WARMING!