

Renewable Energy Revision

S1

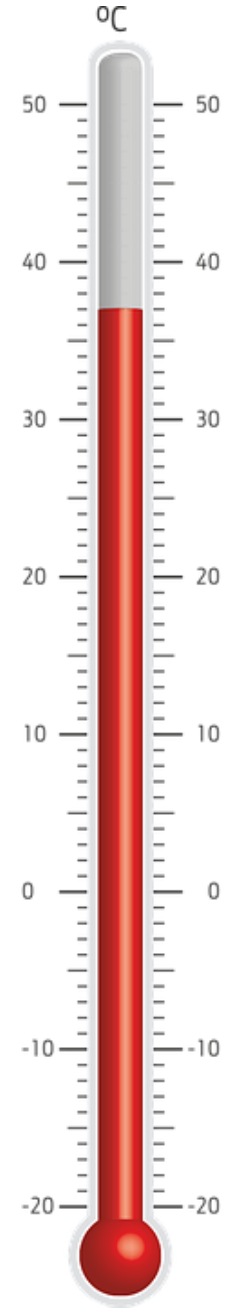


Concepts covered

- Forms of energy– Thermal/Heat energy
- Heat transfer– Solids by Conduction
 - Fluids by convections
 - Radiation
- Insulating Houses to reduce energy bills
- Renewables advantages and Disadvantages

Heat versus Temperature

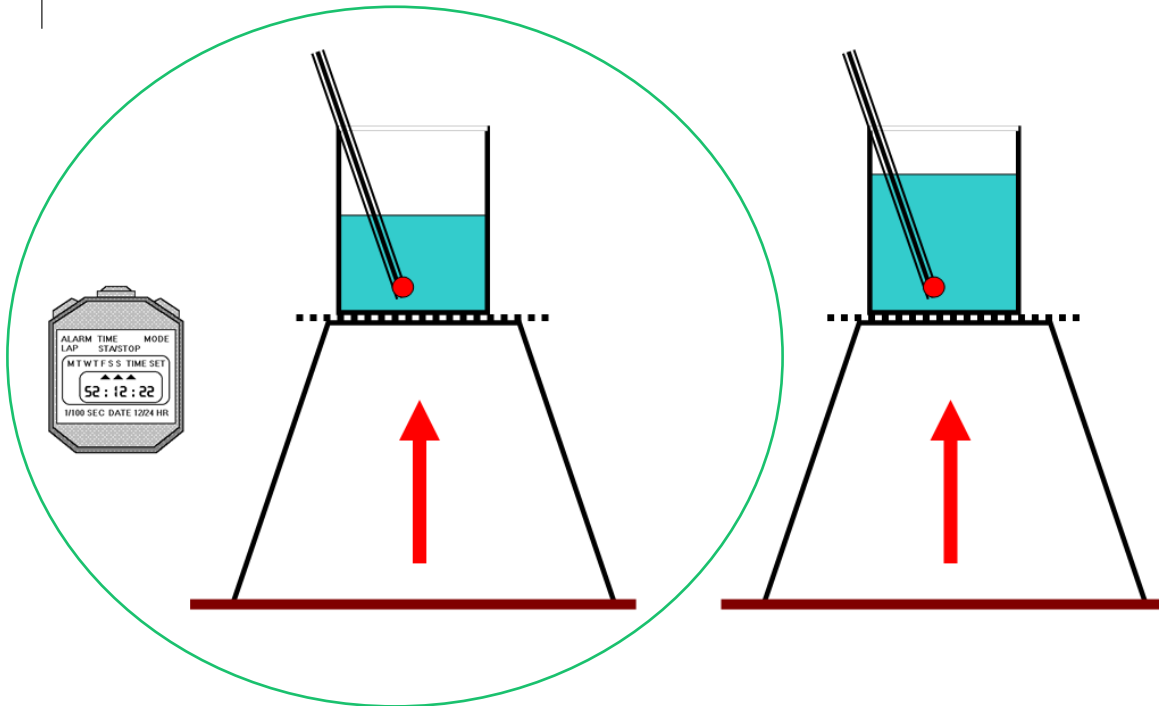
- There is a difference between heat and temperature.
- Heat is a form of energy.
- Temperature is a measure of how hot or cold something is.
- Their unit of measurement is different.
- Heat energy is in Joules
- Temperature is in Degrees Celsius.



Which beaker will heat up first?

- Why?

- What type of heat transfer is occurring ?





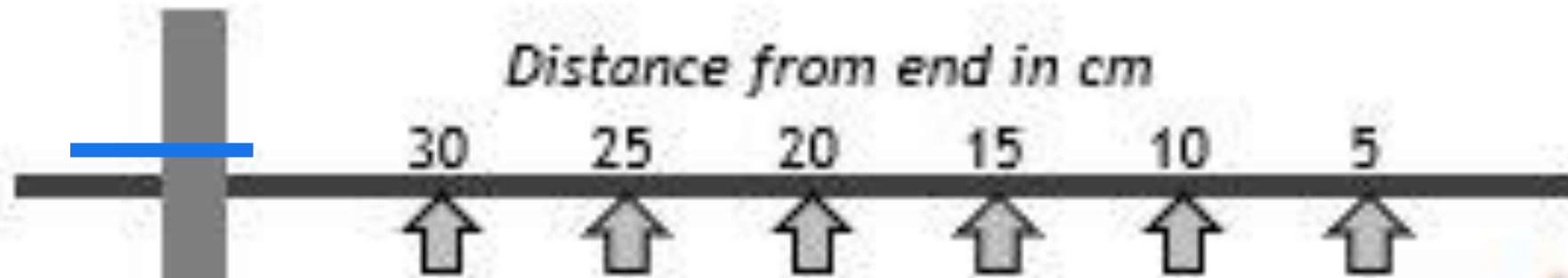
Convection currents

- In the middle of a beaker a purple crystal is added to the beaker using a straw.

The heated fluid rises taking the purple dye with it, the colder fluid sinks down to take its place and the purple dye falls. This sets up a convection current. Eventually the water will reach its maximum temperature of 100 Degrees Celsius.

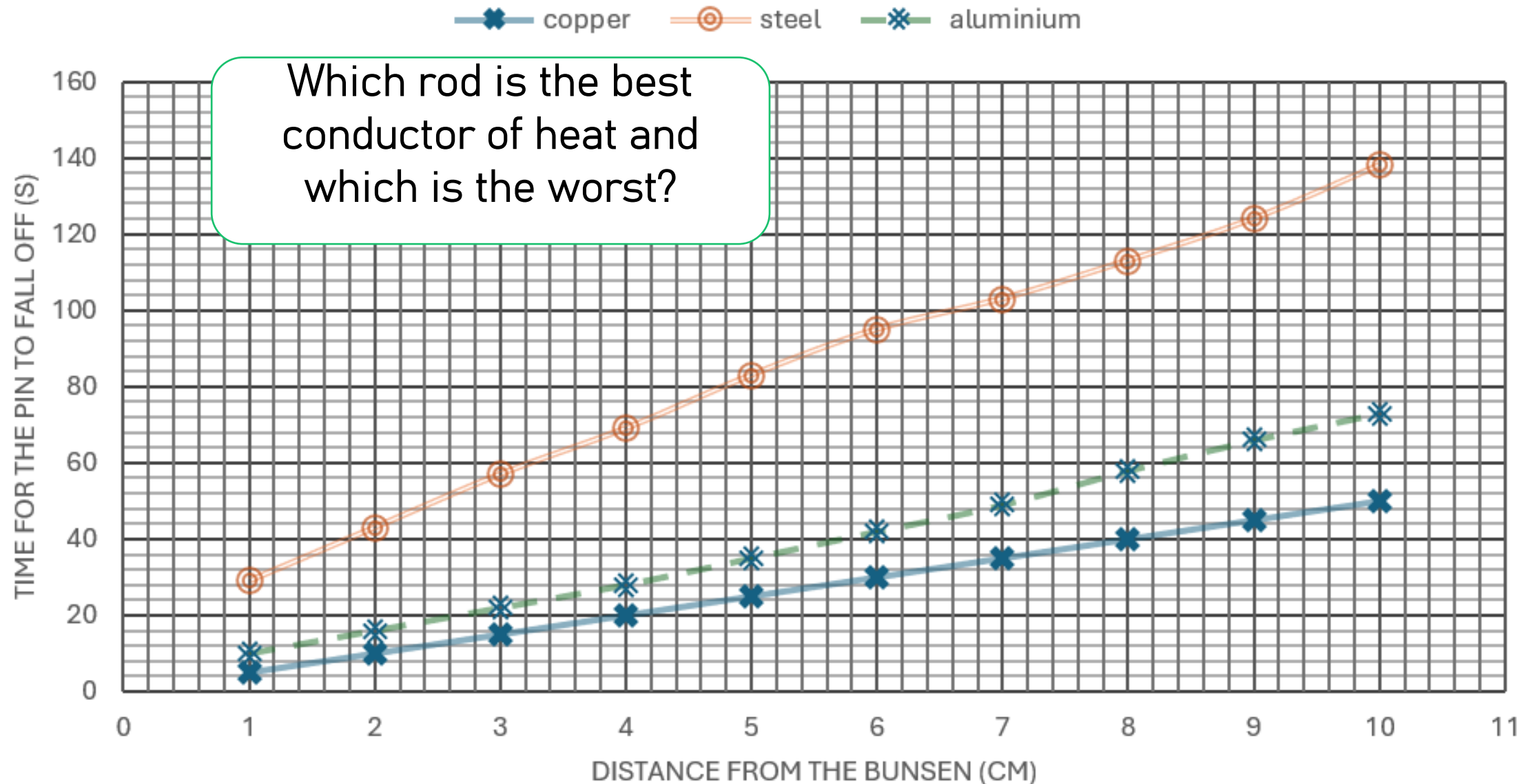


Radiation Brain dump



What is the method of heat transfer along the metal rod?

Time for the pins to fall off for different metals



Insulating houses brain dump

HEAT IS LOST:

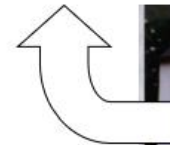
Energy Loss Summary

Through the windows:
have non conducting
window frames, fit
shutters, close thick
lined curtains and have
double or triple glazed
windows

Through the chimney:
cover in the chimney if not in
use (REMOVE IF USING!)

Through the roof:
fit loft insulation the
thicker the better

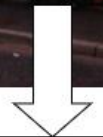
Through the walls:
have a good cavity
(two walls with a
gap between)
fill this cavity with
insulation (cavity
wall insulation)



Through gaps:
fit sausage dog draught
excluders at the bottom of
doors, fit draught excluders
on letter boxes and around
doors and windows.



Through the floor:
fit thick carpet with thick
underlay



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Renewables

- Name the renewable source of energy shown in in the pictures.
- Name the renewable source seen on the front page of the link
- Name the natural resource
- State one advantage
- State on disadvantage



Everyday heat transfer name as many as you can in 3 minutes

Conduction	Convection	Radiation