

Heat moves from high temp to low temp
 ⇓
 thermal energy

②
conduction
 - two objects touching
 - through a single solid

* vibration of atoms which cause vibration of neighboring atoms

slow All materials

Bad conductor

* by spread of free moving electrons - fast good conductors only

Good conductor

convection
 - inside a single FLUID → liq. → gas

density

$$\rho = \frac{m}{V}$$

low ρ floats
 high ρ sinks

⇓
 convection current



must have diff temps at top & bottom -

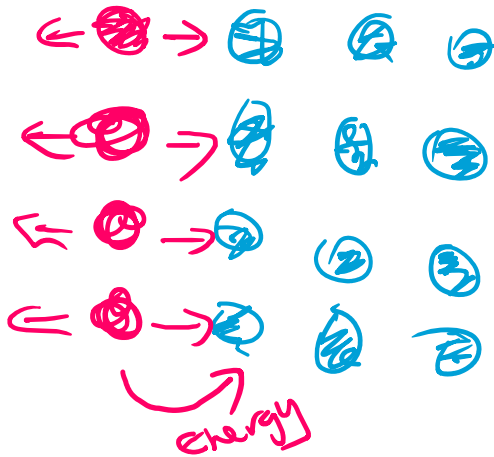
①
radiation
 All objects radiate heat all the time

heat is carried by Infra Red light (electromagnetic wave)

heat
↓
↓
↓
↓

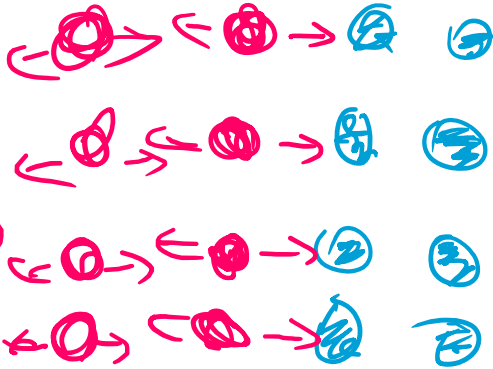


①



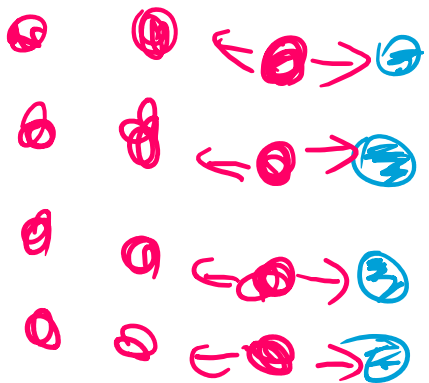
②

heat
→

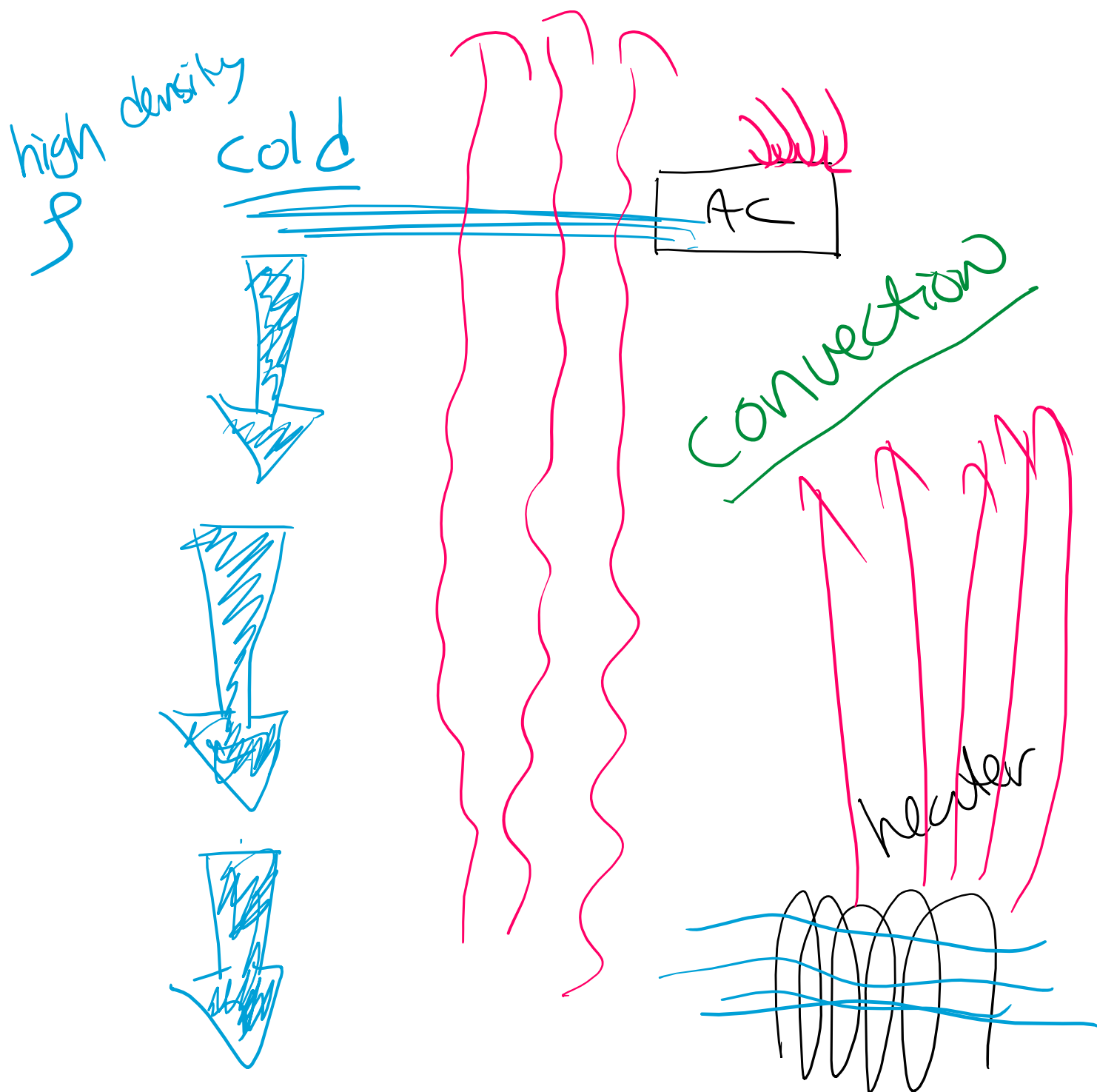


③

heat
→
→
→
→



④



cond	conv	Rad
How to increase		
- use good conductors		
- Solids better than liq or gases	- gases better than liquids	
- Surface Area touching		- Increase Surface area
- higher temp difference	- higher temp difference bet top & bottom	- higher temp difference
		→ colour of surface
	Dark Black Rough Dull very good	shiny white silver reflective smooth very bad

Radiation

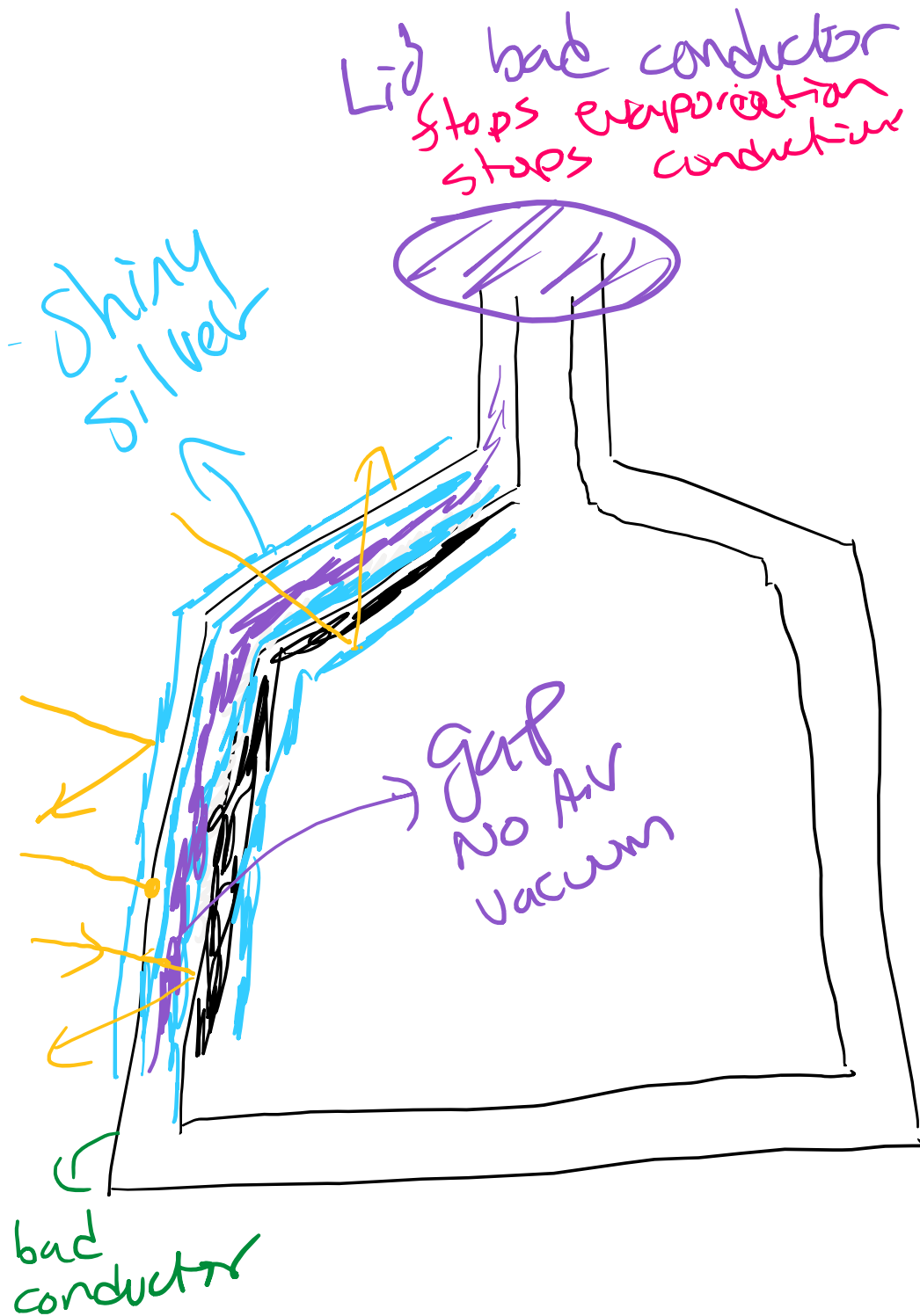
Good ~~radiators~~ emitters are
good absorbers of
heat.

Bad emitters are bad
absorbers



hot weather





thermos

bad conducting
body

vacuum to
stop
conduction
&
convection

shiny surface
to stop
radiation