

Ch 11 Energy in thermal process

U internal energy (of the particles) J

Q heat - energy transferred by temp. change J

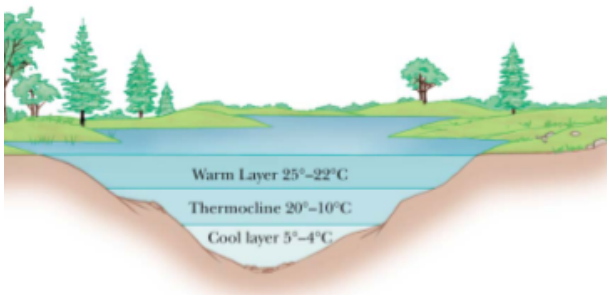
calorie - energy needed to raise 1g H₂O 1°C

kcal = Cal

$$1 \text{ cal} \equiv 4.186 \text{ J}$$

3 types of heat transfer

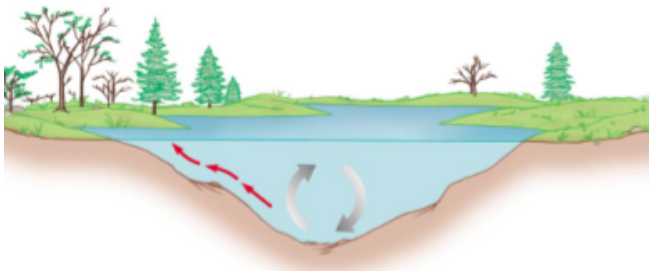
- convection - heat currents



lake "turns over"
2 times/gr

Brooks/Cole

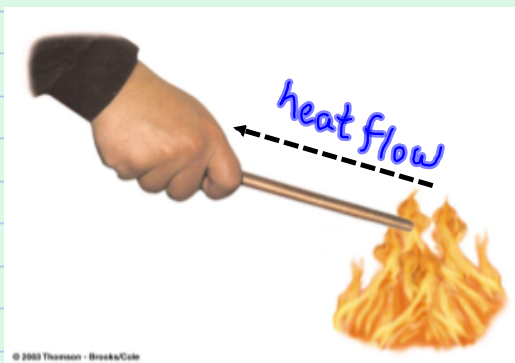
(a) Summer layering of water



003 Thomson - Brooks/Cole

(b) Fall and spring upwelling

Conduction - particle to particle transfer of heat



Heat reaches the hand by conduction through the copper rod.

Radiation - heat transfer by waves (does not need a medium)

