

DATA SHEET USEFUL FOR THE AS UNIT 2 ENERGY TRANSFERS EXAM

Body Temperature

- normal 36.8°C ; range 36.5–37.2°C
- death below 25°C
- hypothermia 32°C
- fever above 37.2°C
- heat exhaustion or heat stroke likely if above 38°C in absence of infection
- high temperatures that above 43°C would lead to death

Breathing:

- breathing rate 12–15 breaths per min
- tidal volume 400–500 cm³
- vital capacity (male) 4.8 dm³
- vital capacity (female) 3.1 dm³
- peak flow 400–600 dm³ min⁻¹

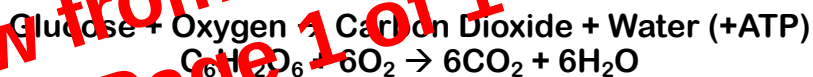
Blood Pressure:

- 18-year-old male 120/80 mm Hg
 - 20-year-old male 125/80 mm Hg
 - 40-year-old male 135/85 mm Hg
- Females usually have slightly lower blood pressure:
- 20-year-old female 123/80 mm Hg
 - 40-year-old female 133/85 mm Hg

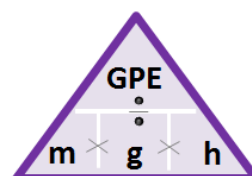
Pulse Rate:

- Normal 60-80 beats per minute

Aerobic Respiration
Equation



$$GPE = \text{mass} \times \text{gravitational field strength} \times \text{height}$$



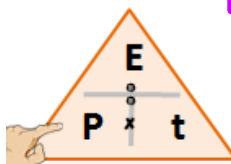
$$\text{Kinetic Energy} = 0.5 \times \text{mass} \times \text{velocity}^2$$

$$KE = 0.5 \times m \times v^2$$

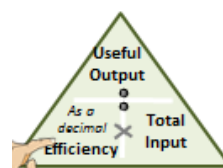
$$m = KE \div (0.5 \times v^2)$$

$$v = \sqrt{(KE \div 0.5 \times m)}$$

$$\text{Power} = \text{Work Done} \div \text{Time Taken}$$



$$\text{Efficiency} = \text{Useful Energy Output} \div \text{Total Energy Input}$$



$$\text{Kilowatt hour (kWh)} = \text{Power (kW)} \times \text{Time (hours)}$$

$$\text{Cost (pence)} = \text{Kilowatt Hours (kWh)} \times \text{Price per unit (pence)}$$