Weight	Work done
weight (gravity force) = mass × gravitational field strength	work done = force × distance
Force applied to a spring	**Distance**
force applied to a spring = extension × spring constant	distance = speed × time
Acceleration	**Resultant force**
$\text{acceleration} = \frac{\text{change in velocity}}{\text{time taken}}$	force = mass × acceleration
Momentum (higher tier only)	**Kinetic energy**
momentum = mass × velocity	$\text{kinetic energy} = 0.5 \times \text{mass} \times (\text{speed})^2$

Work done

$$W = Fs$$

- work done, J
- force, N
- distance, m

Equation rearranged

$$F = W \div s$$

$$s = W \div F$$

Weight

$$W = mg$$

- weight, N
- mass, kg
- gravitational field strength, $\mathrm{m/s^2}$

Equation rearranged

$$m = W \div g$$

$$g = W \div m$$

Distance

$$s = vt$$

- distance, m
- speed, m/s
- time, s

Equation rearranged

$$v = s \div t$$

$$t = s \div v$$

Force applied to a spring

$$F = ek$$

- force applied to spring, N
- spring constant, N/m
- extension, m

Equation rearranged

$$e = F \div k$$

$$k = F \div e$$

Resultant force

$$F = ma$$

- resultant force, N
- mass, kg
- acceleration, m/s^2

Equation rearranged

$$m = F \div a$$

$$a = F \div m$$

Acceleration

$$a = \frac{\Delta v}{t}$$

- acceleration, $\mathrm{m/s^2}$
- change in velocity, m/s
- time taken, s

Equation rearranged

$$\Delta v = a\,t \qquad t = \frac{\Delta v}{a}$$

Kinetic energy

$$E_k = \tfrac{1}{2} m\, v^2$$

- kinetic energy, J
- mass, kg
- speed, $\mathrm{m/s}$

Momentum (higher tier only)

$$p = mv$$

- momentum, kg m/s
- mass, kg
- velocity, $\mathrm{m/s}$

Equation rearranged

$$m = p \div v$$

$$v = p \div m$$

Gravitational potential energy (GPE) equation

$$\text{GPE} = \text{mass} \times \text{GFS} \times \text{height}$$

(GFS = gravitational field strength)

Power

$$\text{power} = \frac{\text{energy transferred}}{\text{time}}$$

Power

$$\text{power} = \frac{\text{work done}}{\text{time}}$$

Efficiency

$$\text{efficiency} = \frac{\text{useful output energy transfer}}{\text{total input energy transfer}}$$

Efficiency

$$\text{efficiency} = \frac{\text{useful power output}}{\text{total power input}}$$

Wave speed

$$\text{wave speed} = \text{frequency} \times \text{wavelength}$$

Charge flow

$$\text{charge flow} = \text{current} \times \text{time}$$

Potential difference

$$\text{potential difference} = \text{current} \times \text{resistance}$$

Power

$$P = \frac{E}{t}$$

- power, W
- energy transferred, J
- time, s

Equation rearranged

$E = Pt$ $t = E \div P$

Gravitational potential energy (GPE) equation

$$Ep = mgh$$

- gravitational potential energy, J
- mass, kg
- gravitational field strength, N/kg
- height, m

Power

$$P = \frac{W}{t}$$

- power, W
- energy transferred, J
- time, s

Equation rearranged

$W = Pt$ $t = W \div P$

Wave speed

$$v = f\lambda$$

- wave speed, m/s
- frequency, Hz
- wavelength, m

Equation rearranged

$f = v \div \lambda$ $\lambda = v \div f$

Potential difference

$$V = I\,R$$

- potential difference, in volts, V
- current, in amps, A
- resistance, in ohms, Ω

Equation rearranged

$I = V \div R$

$R = V \div I$

Charge flow

$$Q = I\,t$$

- charge flow, C
- current, A
- time, s

Equation rearranged

$I = Q \div t$

$t = Q \div I$

Power	Power
$\text{power} = \text{potential difference} \times \text{current}$	$\text{power} = (\text{current})^2 \times \text{resistance}$
Energy transferred	**Density**
$\text{energy transferred} = \text{charge flow} \times \text{potential difference}$	$\text{density} = \text{mass} \div \text{volume}$
Pressure (physics only)	**Moment of a force (physics only)**
$\text{pressure} = \frac{\text{force normal to a surface}}{\text{area of that surface}}$	$\text{moment of a force} = \text{force} \times \text{distance}$

Power

$$P = I^2 \ R$$

- power, W
- current, A
- resistance, Ω

Equation rearranged

$$R = P \div I^2$$

$$I^2 = P \div R$$

Power

$$P = V \ I$$

- power, W
- potential difference, V
- current, A

Equation rearranged

$$I = P \div V$$

$$V = P \div I$$

Density

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

- density, kg/m^3
- mass, kg
- volume, m^3

Equation rearranged

$$m = V\rho$$

$$V = m \div \rho$$

Energy transferred

$$E = Q \ V$$

- energy transferred, J
- charge flow, C
- potential difference, V

Equation rearranged

$$Q = E \div V$$

$$V = E \div Q$$

Moment of a force

$$M = F \ d$$

- moment of a force, Nm
- force, N
- distance, m

Equation rearranged

$$F = M \div d$$

$$d = M \div f$$

Pressure

$$p = \frac{F}{A}$$

- pressure, N/m^2
- force, N
- area, m^2

Equation rearranged

$$F = p \ A \qquad A = F \div p$$

Teaching notes

Print the sheets double sided to create a set of cards each with an equation, units, and symbols. They could be grouped together and attached together into sets for students to quickly refer to.

They could also be used as a revision aid with students working in pairs to test each other on equation recall and checking if they can rearrange equations correctly.