Physical Quantities, Symbols and Units

The table below indicates the physical quantities required for numerical calculations that are included in the National 5 Physics course together with:

• the symbol used by SQA

• the SI unit of the quantity

• the abbreviation for the unit

• the equations from the relationship document which include the quantity.

| **Physical Quantity** | **Sym** | **Unit** | **Unit Abbrev.** | **Equations** |
| --- | --- | --- | --- | --- |
| gravitational potential energy | *Ep* | joule | J |  |
| mass | *m* | kilogram | kg |  |
| gravitational field strength | *g* | newton per kilogram | N kg-1 |  |
| height | *h* | metre | m |  |
| kinetic energy | *Ek* | joule | J |  |
| velocity | *v* | metre per second | m s-1 |  |
| electric charge | *Q* | coulomb | C |  |
| electric current | *I* | ampere | A |  |
| time | *t* | second | s |  |
| voltage potential difference | *V* | volt | V |  |
| resistance | *R* | ohm | Ω |  |
| total resistance | *RT* | ohm | Ω |  |
| supply voltage | *VS* | volts | V |  |
| power | *P* | watt | W |  |
| energy | *E* | joule | J |  |
| heat energy | *Eh* | joule | J |  |
| specific heat capacity | *c* | joule per kilogram per degree Celsius | J kg-1 0C-1 |  |
| temperature | *T* | kelvin  degree Celsius | K 0C |  |
| pressure | *p* | pascal | Pa |  |
| force | *F* | newton | N |  |
| area | *A* | square metre | m2 |  |
| volume | *V* | cubic metre | m3 |  |
| distance | *d* | metre | m |  |
| speed | *v* | metre per second | m s-1 |  |
| frequency | *f* | hertz | Hz |  |
| wavelength | *λ* | metre | m |  |
| amplitude | *A* | metre | m |  |
| period | *T* | second | s |  |
| activity | *A* | becquerel | Bq |  |
| number of counts, decays | *N* | *no unit* |  |  |
| absorbed dose | *D* | gray | Gy |  |
| equivalent dose | *H* | sievert | Sv |  |
| radiation weighting factor | *wR* | *no unit* |  |  |
| equivalent dose rate |  | sievert per year | Sv yr-1 |  |
| displacement | *s* | metre | m |  |
| average velocity |  | metre per second | m s-1 |  |
| acceleration | *a* | metre per second per second | m s2 |  |
| final velocity | *v* | metre per second | m s-1 |  |
| initial velocity | *u* | metre per second | m s-1 |  |
| weight | *W* | newton | N |  |
| work done | *Ew* | joule | J |  |
| specific latent heat | *l* | joule per kilogram | J kg-1 |  |