

A L e v e l P h y s i c s

OCR Physics Specification A - H156/H556

Module 2: Foundations of Physics

| **You should be able to demonstrate and**  **show your understanding of:** | **Progress and understanding:** | | | |
| --- | --- | --- | --- | --- |
| **1** | **2** | **3** | **4** |
| **2.1 Physical Quantities and Units** | | | | |
| Physical quantities have a numerical value and a unit. |  |  |  |  |
| Making estimates of physical quantities listed in this specification. |  |  |  |  |
| Système internationale (S.I.) base quantities and their units – mass (kg), length (m), time (s), current (A), temperature (K), amount of substance (mol). |  |  |  |  |
| Derived units of S.I. base units. |  |  |  |  |
| Units listed in this specification. |  |  |  |  |
| Checking the homogeneity of physical equations using S.I. base units. |  |  |  |  |
| Prefixes and their symbols to indicate decimal submultiples or multiples of units – pico (p), nano (n), micro (μ), milli (m), centi (c), deci (d), kilo (k), mega (M), giga (G), tera (T). |  |  |  |  |
| The conventions used for labelling graph axes and table columns. |  |  |  |  |
| **2.2 Making Measurements and Analysing Data** | | | | |
| Systematic errors (including zero errors) and random errors in measurements. |  |  |  |  |
| Precision and accuracy. |  |  |  |  |
| Absolute and percentage uncertainties when data are combined by addition, subtraction, multiplication, division and raising to powers. |  |  |  |  |
| Graphical treatment of errors and uncertainties; line of best fit; worst line; absolute and percentage uncertainties; percentage difference. |  |  |  |  |
| **2.3 Nature of Quantities** | | | | |
| Scalar and vector quantities including examples of each. |  |  |  |  |
| Vector addition and subtraction. |  |  |  |  |
| Vector triangles to determine the resultant of any two coplanar vectors by calculation or by scale drawing. |  |  |  |  |
| Resolving a vector into two perpendicular components;  *F*x = *F* cos θ  *F*y = *F* sin θ |  |  |  |  |

The material in this checklist is based on the OCR Physics A Specification published at [ocr.org.uk/**alevelphysicsa**](http://www.ocr.org.uk/qualifications/as-a-level-gce-physics-a-h156-h556-from-2015/) by Oxford, Cambridge and RSA Examinations.