

Electric fields

Specification reference	Checklist questions	
6.2.1 a	Can you explain electric fields being due to charges?	<input type="checkbox"/>
6.2.1 b	Can you understand a uniformly charged sphere modelled as a point charge at its centre?	<input type="checkbox"/>
6.2.1 c	Can you describe using electric field lines to map electric fields?	<input type="checkbox"/>
6.2.1 d	Can you demonstrate that electric field strength is $E = \frac{F}{Q}$?	<input type="checkbox"/>
6.2.2 a	Can you demonstrate Coulomb's law, $F = \frac{Qq}{4\pi\epsilon_0 r^2}$, for the force between two point charges?	<input type="checkbox"/>
6.2.2 b	Can you calculate electric field strength, $E = \frac{Q}{4\pi\epsilon_0 r^2}$, for a point charge?	<input type="checkbox"/>
6.2.2 c	Can you describe the similarities and differences between the gravitational field of a point mass and the electric field of a point charge?	<input type="checkbox"/>
6.2.3 a	Can you calculate uniform electric field strength, $E = \frac{V}{d}$?	<input type="checkbox"/>
6.2.3 b	Can you explain parallel-plate capacitor and permittivity: $C = \frac{\epsilon_0 A}{d}$, $C = \frac{\epsilon A}{d}$, $\epsilon = \epsilon_r \epsilon_0$?	<input type="checkbox"/>
6.2.3 c	Can you describe the motion of charged particles in a uniform electric field?	<input type="checkbox"/>

Specification reference	Checklist questions	
6.2.4 a	Can you describe electric potential as the work done in bringing a unit charge from infinity to a point?	<input type="checkbox"/>
6.2.4 b	Can you calculate electric potential, $V = \frac{Q}{4\pi\epsilon_0 r}$?	<input type="checkbox"/>
6.2.4 c	Can you calculate capacitance, $C = 4\pi\epsilon_0 R$, for an isolated sphere?	<input type="checkbox"/>
6.2.4 d	Can you demonstrate force–distance graphs for point or spherical charges?	<input type="checkbox"/>
6.2.4 e	Can you calculate electric potential energy, $E = Vq = \frac{Qq}{4\pi\epsilon_0 r}$?	<input type="checkbox"/>