

## Definitions and Concepts for CAIE Physics A-level

### Topic 18: Electric Fields

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**Coulomb's Law:** The size of the force that acts between two point charges is proportional to the product of their charges and inversely proportional to the square of their separation. It is attractive for opposite charges and repulsive for like charges.

**Electric Field:** A region surrounding a charged object which causes a non-contact force to be exerted on any charged object placed within the field.

**Electrical Field Strength:** The force per unit positive charge exerted on a charged object placed at a chosen point in the field.

**Electric Potential:** The work done per unit charge on a positive test charge in bringing it from infinity to a chosen point in the field.

**Electric Potential Energy:** The work done on a positive charge in bringing it from infinity to that point in the field. It is proportional to the product of the two charges and inversely proportional to their separation.

**Equipotential:** A surface of constant potential. No work is done by the field when an object moves along an equipotential.

**Field Lines:** Lines that demonstrate the direction in which a positive charge would feel if placed at that point in the field.

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