**PHYSICS 12**

**ELECTRIC FIELD**

* Electric Field is a vector quantity that describes the strength of the electric force per unit charge.
* Electric Field is measured in Newton per Coulomb **[N/C]**
* An electric field exists around any electrically charged (positive or negative) object.
* Direction of the electric field is given by what would a **positive** unit (=1.00 C) charge experience if placed in that field.

$$E=\frac{k q}{r^{2}}$$

$$E=\frac{F}{q}$$

OR

1. **Electric Field around a point charge**

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| --- | --- |
| **Macintosh HD:Users:dagmar:Desktop:Screen Shot 2020-05-21 at 2.06.55 PM.png** | **Macintosh HD:Users:dagmar:Desktop:Screen Shot 2020-05-21 at 2.07.09 PM.png** |

1. **Electric field around two charges**

|  |  |
| --- | --- |
| **Macintosh HD:Users:dagmar:Desktop:Screen Shot 2020-05-21 at 2.09.55 PM.png** | **Macintosh HD:Users:dagmar:Desktop:Screen Shot 2020-05-21 at 2.12.18 PM.png** |

**3. Electric field between two oppositely charged parallel plates**

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$$E=\frac{∆V}{d}$$

Where $∆V$is the potential difference between the two plates and *d* is the distance between the plates measured in meters.

Units:

 **V/m**

* the lines and curves with arrows drawn around a charged object are called **field lines.** The more field lines and the greater the density of the field lines, the stronger the field.