

Electric Field Mapping Worksheet

Data Table(s) or Observations

Sketch the equipotential lines for each of the conductor arrangements demonstrated by your teacher, filling in additional lines based on the pattern you see. Then fill in the electric field lines based on your teacher's instructions.

Post-Lab Questions

Point Charges

1. Where is the field mostly uniform, showing lines most evenly spaced? Why might this be so?
2. The two electrodes tested were opposite charges. Sketch your best guess for the field lines of two same-charge point electrodes.

Parallel Plates

3. Describe the electric field between the parallel plates.
4. What happens to the field lines and equipotential lines near the top and bottom edges of the plate?

Synthesis Questions

5. Why must the electric field lines and the equipotential lines be perpendicular to each other?
6. Compare a single point charge to a gravitational analog draw or describe a representation. What path must the ball take to stay at the same potential energy? How does this compare to the equipotential lines?