

1A

Electric Charges and Forces: Initial Ideas
Induced Charges: Near a Charged Rod
Electric Forces and Free Body Diagrams
Coulomb's Law

1B

Using Coulomb's Law
More Coulomb Problems
Gravitation vs Electrical Interactions
Electric Force between Charges
Coulomb Law – Two Point Charges

1C

Sketching Electric Fields (not in packet)
E from two charges (not in packet)
Electric Force and Electric Field
Electric Dipole

2A

Breaking it up
Distributed charge
Half circle
Ring of Charge

2B

Non-Uniform Charge Distributions
Uniformly Charged Rod on the Bisector
More on charged arcs

2C

Net Flux Through a Cylinder
More on Gauss' Law
Gauss – Spherical Solid

3A

Gauss – Spherical Hollow
Gauss' Law for Cylindrical Symmetry
Gauss – Cylindrical Rod
Cylindrical Pipe

3B

Flat Symmetry
Flat Plates
Dynamics and Kinematics in a Uniform E field (not in packet)
Gauss' Law – Spherical Solid / Nonuniform Charge Density

3C

Nonuniform Charge Density (includes conductors)

Gauss' Law with Conductors

Flat Conducting Sheet of Charge

Gauss' Law with Conductors and Insulators

4A

Thick Spherical Conductor (not in packet?)

Gauss' Law / Kinematics (not in packet)

Dipole in E field (not in packet) ? left out

Voltages, Equipotentials and Fields

Equipotential Lines

4B

Mapping Equipotential Surfaces

4C

Work and Potential Energy

Potential and Kinetic Energies

Work done Assembling Charges

Voltage from several pt charges

Finding Electric Field from Voltage

5A

Calculating Voltage from Electric Field: Conductors

Calculating Voltage from Electric Field: Insulator

Voltage for Cylindrical Conductors

Voltage by Integration over Charge Distribution

Fields and Potentials for a Charged Conducting Sphere

5B

Make a Capacitor

Introduction to Capacitors

Calculating capacitance

5C

Beginning Circuits – Capacitors

Solving for Equivalent Capacitance

Cap_series_parll

Table with C,V,Q,U

6A

Resistivity of Nichrome Wire (Lab)

Ohmic and Non-ohmic devices (Lab)

6B

Resistive Circuit

Temperature coef of resistivity

Kirkoff law example problem

6C

Battery Equivalent Circuit

RC Circuits - Limits

7A

Kirchoff problem (not in workbook)

RC Circuit Lab

7B

Magnetic Fields – Force on Moving Electric Charge

Velocity Selector

Circular Motion – Charged Particles in Uniform Magnetic Field

Mass Spectrometer for Isotope Separation

Magnetic Field and Kinematics Problems

7C

Hall Effect

Lorenz Force Law revisited

Electric and Magnetic Dipoles in Uniform Fields

8A

Law of Biot-Savart

8B

Biot-Savart Superposition

Two long parallel wires

Current Loop

8C

Force on a Loop Near a Wire

Forces on Currents

Ampere's Law

9A

Ampere's Law, non-uniform current densities

More Ampere Problems

Other Applications of Ampere's Law

Design a Solenoid

9B

Magnetic Induction: Faraday's Law and Induced Current
Lenz's Law

9C

Magnetic Induction
Motional EMF
Loop Near a Long Wire (not in worksheets)

10A

Solenoid and Pick up Coils
Transformers

10B

RL Circuits