Preliminary Physics

Waves

1. Observation of Waves in Slinkies, Water and Ropes
2. Measuring Frequency and Amplitude electronically
3. Identifying the Relationship between Frequency and Wavelength of a Sound Wave
4. Wave Patterns on a CRO for a variety of Sounds
5. Superposition using a CRO or similar
6. The Inverse Square Law of Light
7. Graphing the Angle of Incidence and Angle of Refraction at an Interface and Refractive Index

Electricity

8. Relationship between Voltage and Current in a Circuit
9. Variation in Electrical Potential around a Circuit
10. Investigating Series and Parallel Circuits
11. Construction of a Model of Household Circuits
12. The relationship between Voltage, Current and Power for a Heating Element
13. Making an Electromagnet
14. Mapping Lines of Force for (a) bar magnets (b) Current Carrying Wires and (c) Solenoids.

Moving About

15. Measuring the Average Speed of a Vehicle
16. Vector Addition and Subtraction
17. Newtons 2^{nd} law
18. Momentum and Collisions

Cosmic Engine

19. Penetrating Power of α β γ Radiations

HSC Physics

Space

1. Determination of g using a Pendulum or Data Logger
2. Analysis of Projectile Motion
3. Inertial and non Inertial Frames of reference
4. Analysis of 2 Thought Experiments.

Motors and Generators

5. Demonstration of the Motor effect
6. Production of a Current by Moving a Magnet in a Coil
7. How Current is affected by other factors
8. Production of Alternating Current
9. Making a transformer
10. Induction Motors

Ideas to Implementation

11. Striation Patterns in a Vacuum Tube
12. Cathode ray Tubes demo
13. Production and Reception of Radio Waves
14. Modelling of Semi Conductors
15. Superconductivity and Levitation