Unit 9  Media and Webs

**Mechanical Universe & Beyond**

1. **Physics for the 21st Century**  
   Basic Building Blocks of Matter  
   Click online Text
   - Intro
   - First Subatomic Particle
   - Particle Zoo in Cosmic Rays
   - From Cloud Chambers to Bubble Chambers
   - Discovery of Quarks
   - Neutrinos
   - Matter and Antimatter
   - The Origin of Mass

2. **Science in Focus**  
   Forces and Motion  
   view 8 Workshop VDOs
   - making Impact
   - Drag Races
   - When Rubber Meets the Road
   - On a Roll
   - Keep on Rolling
   - Force again Force
   - The Lure of Magnetism
   - Bend of Stretch

3. **Science in Focus**  
   Energy  
   view 8 Workshop VDOs
   - What Is Energy
   - Force & Work
   - Transfer & Conversion of Energy
   - Energy in Cycles
   - Energy in Food
   - Energy & System
   - Heat Work & Efficiency
   - Understanding Energy

4. **Science in Focus**  
   Shedding Light on Science  
   view 8 Workshop VDOs
   - Shine & Shadow
   - Law of Light
   - Pigments Pain & Printing
   - Color Cones & Cornea
   - Sunlight to Starch
   - Energy & Ecosystem
   - Sun & Seasons
   - Wind & Weather

5. **Science in Focus**  
   Matter  
   view 8 Workshop VDOs
   - What is Matter
   - The Particle Nature of Matter
   - Conservation of Matter (physical)
   - Conservation of Matter (Chemical)
   - Density & Pressure
   - Rising & Sinking
   - Heat & Temperature
   - Particle Model of Matter

6. **Science in Focus**  
   Reaction in Chemistry  
   view 8 Workshop VDOs
   - Atoms & Molecules
   - Macro to Micro Structure
   - Energetics & Dynamics
   - Chemical System
   - Chemical Design
   - Chemistry of Life
   - Chemistry & Environment
   - Chemistry at Interface

7. **Mechanical Universe**  
   Physics VDO  
   to view 50 VDOs  
   Click Video on Demand {VoD}
   - Law of Falling Bodies
   - Inertia
   - Vectors
   - Newton’s Law
   - The Apple & the Moon
   - Moving in the Circle
   - Fundamental Forces
   - Gravity Electricity & Magnetism
   - Resonance
   - The Millikan Experiment
   - Conservation of Energy
   - Potential Energy
   - Harmonic Motion
   - Conservation of Momentum
   - Angular Momentum
   - Torque & Gyroscope
   - Kepler to Einstein
   - Kepler’s 3 Laws
   - Kepler Problem
   - Energy & Eccentricity
   - Waves
   - Navigation in Space
### Light and Color
- Reflection of Light
- Refraction of Light
- Diffraction of Light
- Polarization of Light
- Prisms and Beamsplitters

### Optics and You
- Human Vision and Color Perception

### Light and Color
- Astigmatism
  - Interactive JAVA

### Light and Optics Tutorials
- Silicon Zoo

### Interactive JAVA Tutorials
- Atomic Orbitals
- Compact Disc
- AC Generator
- DC Generator
- Computer Hard Drive
- Condenser Microphone
- Resistor Color Code
- Loud Speaker
- Transformer
- Transistor
- LED
- Rutherford Experiments

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### Energy and You
- Human Vision and Color Perception

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### EIA Energy Kids

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### Energy Sources
- Nonrenewable Basics
- Oil (Petroleum)
- Natural Gas
- Coal
- Uranium (Nuclear)
- Renewable Basics
- Biomass
- Geothermal
- Hydropower
- Solar Basics
- Wind Basics
- Electricity
- Hydrogen

### Energy Timelines
- Famous People
- Benjamin Franklin
- Thomas Edison
- Nikola Tesla
- Albert Einstein

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### S Cool Revision

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### Home
- Biology
- Chemistry
- Physics

### Measurements
- Units and Prefixes
- Summary

### Mechanics
- Vectors v. Scalars
- Speed and Velocity
- Circular Motion
- Forces
- Newton’s Laws
- Friction
- Pressure
- Momentum
- Collisions
- Work and Energy

### Light – Reflection
- Refraction and Polarization
- Reflection
- Refraction
- Diffraction
- Polarization

### Electricity
- Current Electricity
- Conductors and Insulators
- Resistance
Current Charge and Voltage  Transformer and Rectification
Electromagnetic Induction  Electromagnetic Field and Forces

5. Thermodynamics and Ideal Gases
6. Quantum Physics  Nuclear Energy  Particles  Matter and Antimatter

PBS Science

1. PBS VDOs  Dark Matter  Elegant Universe  Hunt for Alien Earths
2. PBS Interactive  Structure of Metal  Let’s Make a Microbe  Tour Solar System
3. Physics of Stone Arches  CERN Particle Physics Machine  Picturing Atoms
4. NOVA Space and Flight

PC Architecture

1. PC History and Logic  The Von Neumann Model  Data Processor
2. Intro to Motherboard  CPU  CPU and Motherboard
   Inside and Around CPU  Examples of CPU
3. The Cache  L2 Cache  RAM  RAM Technology  Advice on RAM
4. Choosing a CPU  CPU’s Immediate Surroundings  Overclocking
   Evolution of Pentium 4
5. CPU’s and Multimedia  I/O System  From ISA to PCI Express
   Adapters  SCSI USB and Firewire  Hard Disk USB SATA
6. Data and Monitor  System Software
7. Best VDOs! here  How Stuff Works  top playlists >

Computers VDOs  Hard Ware VDOs  RAM VDOs  Upgrade VDOs
Home Network VDOs  Computer Virus VDOs
Bob High Voltage Tesla Coil

Engine Models
Crank Substitute Engine  Revolving Cylinder Engine  Watt Beam Engine
Grasshopper Beam Engine  Newcomen Engine  Unknown Beam Engine
Single Cylinder Stirling Engine  Two Cylinder Stirling Engine
Stirling Engine with Rose Yoke  Low Temperature Diff Stirling Engine

Best VDOs!  here  How Stuff Works  top playlists >

Car Parts VDOs  Car Maintenance VDOs  Hybrid Car VDOs  Motorcycle VDOs
Car Accident VDOs  How Car Engines Work

E Club

>Home  Site Map  Studying Electronics  e Links

1.  Symbols  Soldering Guide  Components

2.  Projects  555 and 556 Timer Circuits  3.  Components

Capacitors  Connectors and Cables
Diodes including zener diodes
Integrated Circuits (Chips)  4000 series logic ICs (pin connections etc)
  74 series logic ICs (pin connections etc)

- LEDs (Light Emitting Diodes)  Relays  Resistors  Variable Resistors
- Resistor Colour Code Calculator
- Switches
- Transistors  Heat sinks for transistors
- Other components including LDRs and thermistors

4.  Studying Electronics

Block Diagrams  Circuit Diagrams  Circuit Symbols - including the functions of components
Electricity and the Electron  Series and Parallel Connections  Voltage and Current
Meters - voltmeters, ammeters, galvanometers and ohmmeters  Multimeters - choosing and using
Resistance - resistors in series and parallel, conductors and insulators
Ohm's Law - including the VIR triangle and calculations
Power Supplies  Transducers  Voltage Dividers  Transistor Circuits
Analogue and Digital Systems  Logic Gates
Capacitance and Uses of Capacitors  Impedance and Reactance
555 and 556 Timer Circuits  Counting Circuits  Quantities and Units
Books about Electronics
1... Working with Electricity Safely

Always Turn the Power Off, Before Start Work !

2. Elementary Electricity  Electricity & the Electron  Series & Parallel Connection
Voltage & Current  Meters  Multimeters  Resistance  Ohm’s Law
Power & Energy  AC DC Electric Signals  Oscilloscope
Power Supply  Transducers  Voltage Divider
Transistor Circuits  Analogue & Digital Systems  Logic Gates
Capacitance & Uses of Capacitors
Impedance & Reactance
555 and 556 Timer Circuits  Counting Circuits
Quantities & Units in Electronics


4. Electronic Components
Capacitors  Resistors  Connectors  Switches  Lamp  Relay  LEDs
Diodes  Transistors  IC  Variable Resistor  Other