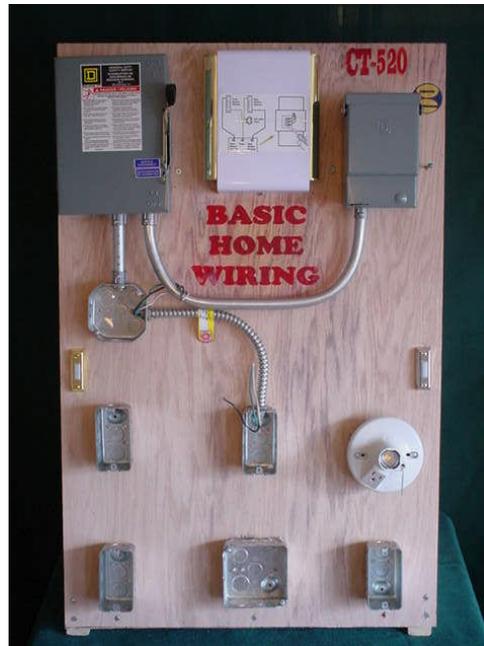


CT 520/10 Basic Home Wiring



Basic Residential Plumbing Module

The simple common sense safety procedures taught in this module will help students discover that home electrical projects are safe, easy, and satisfying. After learning safety procedures, students learn how electricity works, enters the home, is distributed to different rooms, and how grounding keeps the system safe. A glossary of electrical terms provides a handy reference and a catalog of tools helps students identify the hand tools, power tools, and specialty tools needed for electrical repairs. An overview of the parts of an electrical system teaches students how to identify cable and wire types, stripping wires, make proper connections, calculate load and capacity on circuits, and map circuits. Students will install junction boxes, switches, receptacles, lights, thermostats, doorbells, and plugs using the wiring applications trainer and demonstrator. Finally, problems that may be found in a household electrical system, especially older ones are examined. Upon completion of this module, students will understand the procedures required to safely design, maintain, and repair a home's electrical system.

Includes following equipment set for use with the module, to perform the practical, hands-on activities and meet the objectives laid down for the curriculum:

Assorted Electrical Boxes with Fittings and Conduit Mounted to a Baseboard
Long nose Pliers
6" Screw Driver
Knife
Conduit Bender
2- Three-Way Switch Covers
Duplex Receptacle Cover
Porcelain Lamp Receptacle w/Switch 4"
2A Fuse #W2
"Trucall" Bell & Buzer combination w/plate
Box of Connectors – twist type
100' - #14 TW Copper Wire – White
100' - #18 Bell Wire – twisted pair

Circuit Tester
Linesman's Side Cutting Pliers
Wire Stripper
Electricians Tape
SPST Switch Cover
4-Way Switch Cover
Porcelain Lamp Receptacle 4"
Motor Fuse Cover w/SPST Switch
Bell Transformer w/Plate 120/10
2-Pushbuttons #664 Edwards w/plate
100' - #14 TW Copper Wire – Black
100' - #14 TW Copper Wire – Red

1. Overview

Pre-Test

- The Electronics Book
 - Navigation
 - Animation
 - Extending the Book
 - Troubleshooters
- Survival Guides
 - Virtual Hardware Store
- Estimators
 - Wire Gauge
 - Wiring Box Size
 - Power Supply
 - Appliance Cost

2. The Circuit Simulator

- Starting the Simulator
- Laying Out Boxes
 - Placing Boxes
 - Cable Between Boxes
 - Switches and Receptacles
 - Lights in a Box
- Wiring a Device
- Splicing Wires
- Removing Connections
- Wiring a Box Automatically
- Simulating the Flow of Electricity
- Evaluating Your Circuits
- Saving and Opening Your Circuit Designs
- Printing Your Circuit Designs
- Using Circuit Diagrams to Wire Your Home
- Leaving the Circuit Simulator

3. The Electronics Book

- How Power Enters Your House
- Reading Your Electric Meter
- Grounding
- Lightning Protection
- Amps X Volts + Watts
- Your Service Panel
- Circuit Breaker & Fuses
 - Circuit Breakers
 - Fuses
 - Cartridge Fuses
- Labeling Circuits
- Identifying Your Wiring
- Non-Metallic Cable
- Armored Cable
- Conduit Surface Raceway
 - Knob & Tube
 - Aluminum
- How an Electric Circuit Works
- How To Avoid Shocks
- Electrical Hazards
 - Electromagnetic Fields
- The Electrical Code

4. Do Your Own Repairs

- Replacing a Lamp Socket
 - Replacing Cords
 - Replacing Plugs
 - Repairing Incandescent Lights
 - Fluorescent Light Troubleshooter
 - Testing Switches
 - Testing a Receptacle
 - Troubleshooting Doorbells
 - Short-Circuit Troubleshooter
 - When Power Fails
 - Preparing for a Blackout
 - Installing a GFCI Receptacle
 - 8 Common Wiring Mistakes

5. Adding New Wiring

Planning Electrical Work

- When to Extend an Existing Circuit
- When you Need a New Circuit
- When You Need a Dedicated Circuit
- Choose the Right Wiring System

Planning a new Circuit

Cutting Openings for Boxes

- Cutting an Opening in Drywall
- Cutting an Opening in Plaster
- Cutting an Opening in Wood

Searching for Studs

How to Run Cables

- How to Run Cables From Above
- How to Run Cables From Below
- How to Run Cables Across Joints and Studs
- How to Run Cables for a Ceiling Light

Patching Drywall and Plaster

- Small Holes
- Large Holes
- Holes in Plaster

Install a Remodel Box

- Connecting External Cable Clamps
- Stripping and Clamping Armored Cable
- Working with Conduit
 - Bending Conduit
 - Running Wires Through Conduit

New Circuits in Open Walls

- Bending and Stapling Cable
- Locating Boxes
- Making Up a Box
 - Stripping Wires
 - Splicing Wires
 - Grounding Boxes
 - Connecting to Terminals
 - Stuffing Boxes
- Three-Way Switching

6. Improving Your Lighting

Improving Room Lighting

- Choosing the Right Light Source
 - Incandescent
 - Fluorescent
 - Halogen

The Color of Light

- How to Stimulate Your Lighting
- Installing a Dimmer Switch
- Installing a Ceiling Light
- Installing Track Lighting
- Mounting Ceiling Boxes
- Installing Recessed Lighting
- Mounting a Ceiling Fan
- Outdoor Lighting

7. High Tech Wiring

- High Tech with Low Voltage
- Programmable Thermostats
- Installing Multi-Room Audio
- Products that Prevent Interference
- Home Intercoms
- Smoke and Heat Detectors
- Get Wireless!
- Motion-Sensing Light Switches
- Home Security Options
- Home Automation Systems

8. The Data Highway

- Field Guide to the Data Highway
- Getting On-line
- The Right Cables for Today
- Wiring for the Future
- The Many Flavors of Home Video
- Installing a Coaxial Cable Connector
- Protecting your PC and Data
 - Protecting Hardware
 - Work In Progress
 - Stored Work
 - Peripherals
 - Do You Need a Screen Saver?
- Troubleshooting Phone Lines
- Installing a Phone Plug
- Installing a Phone Jack
- Adding a Second Phone Line

9. Troubleshooter

- Fluorescent Lights
- Short Circuits

10. Post-Test