



Fabric Inks

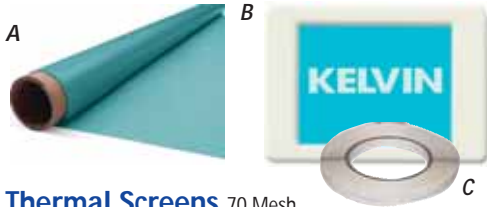
- | | | |
|-----------------|-----------------|--------------------------|
| 420291Red | 420294 ..Yellow | 1 pt.
\$14.95 |
| 42029Blue | 420295 ..Violet | |
| 420293 ..Green | 420296 ..Black | |
| | 420297 ..White | |

**Gel Medium/
Ink Thinner**

420328 500 mL ..\$9.95

**Slow Dry/
Clog Inhibitor**

420329 500 mL..\$11.95



Thermal Screens 70 Mesh

- | | |
|-------------------------------------|--------------|
| 420281 9 x 11-3/8 in., 20/pkg. | \$115 |
| 420282 [A] 11-3/4 W x 22 yds. | \$295 |

Thermal Screen Frames

- | | |
|-----------------------------------|---------------|
| 420280 [B] 4-5/8 x 7-1/2 in. | \$1.95 |
| 420279 7-3/4 x 10-1/2 in. | \$5.95 |

Double-Sided Tape

- | | |
|-------------------------------------|----------------|
| 420283 [C] 1/4 in. W x 50 yds. | \$14.95 |
|-------------------------------------|----------------|



Screen Printing Frame Bases

- Hold screens and the object being printed on in place.
- | | |
|------------------------------------|-----------------|
| 440205 1-Color Printing Base | \$269.95 |
| 440206 4-Color Printing Base | \$495.95 |



Compact Thermal Imager

Process your thermal screens quickly and easily. In addition, use this imager to create mimeos, stencils, spirit masters, and transparencies. With light and dark copy control, solid state construction, reliable durability, curl-free feed, a large 225mm print area, and an easy-to-clean glass roller. Refurbished.

420298 Refurbished Imager**\$1,495**

Wood, balsa and foam blanks require shaping with tools and sanding. Kits may require soldering and advanced assembly. Adult supervision required.
www.kelvin.com • KELVIN®, 280 Adams Blvd., New York 11735, USA • Copyright © Kelvin L.P. • Prices in this catalog represent discounted pricing for educational institutions.



Fabric/Paper Screen Printing Kit All Items Shown Above

Print a T-shirt, poster or even your PC board with this screen printing kit. Get students motivated to learn while they make money for their school's Tech Ed programs! Have students design and screen print a school logo, student design, or other image onto a T-shirt or notebook to help with fundraising efforts.

Kit includes [20] 9 x 11-3/8 in. thermal screens, [9] frames, [5] half-pints of paper thermal imaging ink, [5] half-pints of fabric thermal imaging ink, binder, [3] squeegees, mounting tape, spatula and instructions.

- | | |
|--|----------------|
| 280098 Fabric/Paper Screen Printing Kit | \$275 |
| 280075 KELVIN® Thermal Screen Printing Lesson Guide..... | \$39.95 |
| 120812 Thermal Screen Printing DVD | \$19.95 |

Great For Fundraising!
Screen Print T-Shirts, Posters, Binders, PC Boards, etc.



White T-Shirts 12/pkg.

- | | |
|--------------------|----------------|
| 760032 Small | \$59.95 |
| 760033 Med | \$59.95 |
| 760034 Large | \$59.95 |
| 760035 XL | \$76.95 |
| 760051 XXL | \$76.95 |

**3-Ring
Plastic
Binders**

Screen print a logo or other design onto these notebooks. 1 in. thick.

- | | |
|--------------------|---------------------------------------|
| 420331 Black | \$2.95 or \$2.65 ea./6+ |
| 420332 Red | \$3.49 or \$3.15 ea./6+ |
| 420333 Green | \$3.95 or \$3.55 ea./6+ |



Learn Website Design and Commerce



Promote Your School!

Introduction to Web Design Mini Lab

Design a web page to promote your school, team or organization. This lab includes Front Page Web Design software and a Workstation Sign.

841719 Computer Required **\$1,995**

Intro to E-Commerce Lab

Design and build an online store. This lab includes: Front Page Web Design software, Shopping Cart software and a Workstation Sign. Requires a computer.

841720 Computer Required **\$2,495**

Introduction to HTML & E-Commerce Lab

Design and build an online store with advanced features. Students will also be introduced to HTML programming in order to further enhance your web site with additional features. This lab includes: Dreamweaver Web Design software, Shopping Cart software (more advanced version than software in Lab #841720 above), Basics of HTML book and a Workstation Sign.

841721 Computer Required **\$2,995**



Understand & Use the World Wide Web



Learn How To Surf The World Wide Web!
Search For Information with Search Engines
Send/Receive e-mails

Internet Lab

Covers understanding and using the internet; exploring the history of the WWW; search engines, buying and selling online; setting up e-mail; sending and receiving email; viruses, spam and internet hoaxes; and web conferencing.

Includes: Computer with DVD Player/Burner, 17 in. LCD Monitor, Internet Keyboard, Printer, Cables, Speakers, Web Camera, Instruction Manual, Related Books, and a Workstation Sign.

841682 Internet Lab **\$2,750**

Desktop Publish School Newsletters



Introduction to Desktop Publishing Lab

Lab includes: Computer with DVD-RW Drive and a 17 in. Computer Monitor (Not an LCD), Instruction Book, Keyboard and Mouse, Digital Camera, Tabletop Scanner, Printer and Cables, Print Shop Software, Clip Art Software and Workstation Sign.

841066 Intro DTP Lab – Gr. 5 & up **\$2,495**

Desktop Publishing Lab

Create school newsletters, student I.D. badges, brochures, greeting cards. Grades 7 and up.

841015 DTP Lab – Gr. 7 & up **\$2,995**

841023 DTP Lab plus Quark Xpress **\$3,995**

DTP Lab Includes:

Computer Setup: with a 19 in. LCD Display, Keyboard & Mouse, Printer and Cables, Tabletop Scanner

Equipment: Digital Camera (Better), Tripod, Card Laminator with Laminating Pouches

Software: *Microsoft Publisher, Calendar Creator, Greeting Card Magic, Photo Suite*

Plus: Workstation Sign

Create 3D Animations



Animation Labs

Lab I includes:

Computer with DVD-RW Drive, 19 in. LCD Display, Keyboard and Mouse, Better Digital Camera, Tabletop Scanner, Drawing Tablet, Sound Companion Software and Bryce Software.

841065 Animation Lab I – Gr. 7 & up **\$2,495**

Lab II includes:

Computer with DVD-RW Drive, 19 in. LCD Display, Keyboard and Mouse, Printer and Cable, Advanced Digital Camera, Flatbed Tabletop Scanner, Poser and Painter Software, Kai's Photo Soap Software, and a Computer Drawing (Digitizer) Tablet.

841032 Animation Lab II – Gr. 8 & up **\$2,995**

Intro to Animation Lab

Explore 3D animation and manipulating images. Grades 5 and up.

Lab Includes: Basic Digital Camera, Bryce Software, KidPix Studio Software, & Sound Companion Software.

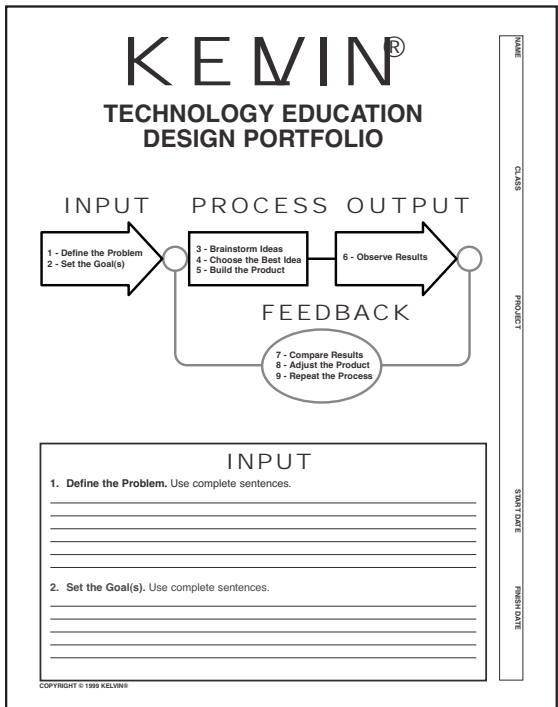
841064, **\$995**



KELVIN® Technology Competition Medallions
 Each set includes three 2 in. diameter medallions: one each of gold, silver and brass colors. Includes three decorative ribbons.
 840706 **\$19.95**



KELVIN® Competition Certificates
 High quality, cardstock awards are generic; teachers can customize name, competition and placement.
 840704 30/pkg. **\$4.95**



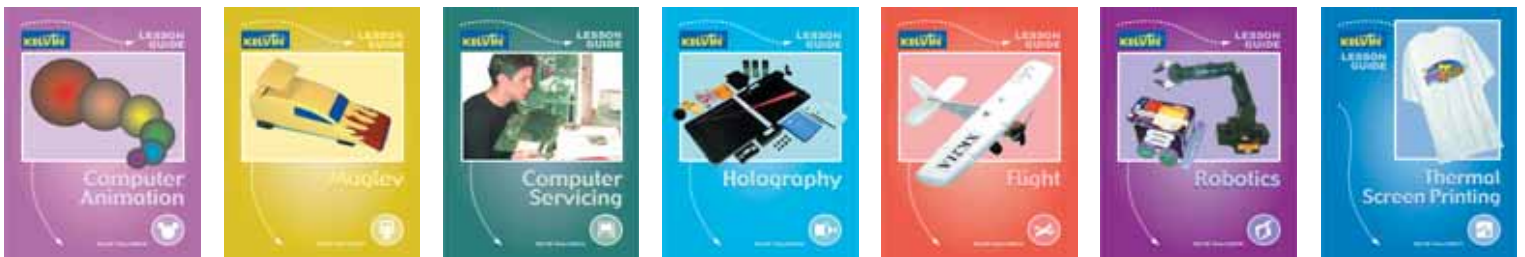
KELVIN® Design Portfolios
 Encourage students to use the problem-solving method of **INPUT—PROCESS—OUTPUT—FEEDBACK** when planning and designing.
 651030 Design Portfolios, 4 pages, 100/pkg. **\$25**

KELVIN® "How To" Videos

These economical videos feature an overview of a KELVIN® product. Includes problem-solving techniques, equipment demos and kit assembly. Ideal for teachers or students.



- 120921 Beams & Triangles™ .. **\$29.95**
- 120932 Boat Hull **\$29.95**
- 120935 Electric Bell **\$29.95**
- 120922 Design A Game™ **\$29.95**
- 120936 Electric Motor **\$29.95**
- 120973 Hovercraft **\$29.95**
- 120937 KelAir™ No CO2 **\$29.95**
- 120928 KelBotics™ **\$29.95**
- 120956 Car/PowerPole™ **\$29.95**
- 120930 Maglev Vehicle **\$29.95**
- 120938 Paper Rocket™ **\$29.95**
- 120929 Solar Car **\$29.95**
- 120934 SUMO Car Wrestler™ .. **\$29.95**
- 120933 Wright Bros. Design **\$29.95**



KELVIN® Instructional Lesson Guides

Support material for your technology units. Hands-on activities provide students with the opportunities to apply Science, Math and problem-solving concepts. Additional materials may be required.

- 280049 Computer Animation..... **\$39.95**
- 280333 Computer Servicing..... **\$39.95**
- 280207 Construction **\$39.95**
- 840799 Desktop Publishing..... **\$39.95**
- 840800 Drafting **\$39.95**
- 840801 Electronics Intro **\$39.95**
- 280205 Engineering..... **\$39.95**
- 840802 Ergonomics **\$39.95**
- 650943 E.Q.™ Earthquake **\$39.95**
- 840803 Fiber Optics & Lasers..... **\$39.95**
- 280054 Flight **\$39.95**
- 280055 Future of Technology **\$39.95**
- 840804 Holography & Lasers **\$39.95**
- 280057 Hydraulics..... **\$39.95**
- 840805 Hydrodynamics **\$39.95**
- 840806 Hydroponics **\$39.95**
- 280061 Magnetic Levitation **\$39.95**
- 840807 Manufacturing..... **\$39.95**
- 280204 News Production **\$39.95**
- 840808 PC Board Fabrication..... **\$39.95**
- 840809 Plastics..... **\$39.95**
- 280064 Radio Broadcasting..... **\$39.95**
- 840810 Recycling **\$39.95**
- 280065 Research & Design **\$39.95**
- 280066 Robotics **\$39.95**
- 280068 Small Gas Engines **\$39.95**
- 840811 Solar Energy **\$39.95**
- 280069 Space..... **\$39.95**
- 280075 Screen Printing **\$39.95**
- 650649 Vehicle Crash Testing..... **\$39.95**
- 280071 Videography **\$39.95**
- 840812 Weather **\$39.95**



KELVIN® Audio and Radio Production Lab

Students will create a script and use audio equipment, as well as produce radio broadcasts or act as a DJ to create a music mix. Gr. 7-12.

This Lab Includes:

- Dual High Speed Tape Deck
- Amplifier/Receiver for AM/FM
- Dual CD Player (DJ Style)
- CD-RW Recorder (Stand Alone, No Computer Needed)
- Stereo Mixing Console
- [2] Headphone Sets

- [2] Bi-directional Microphones
- [2] Tabletop Mic Stands
- [2] Speakers
- RCA Plug "Y in. Adapter
- Speaker Wire
- [10] Blank Audio Tapes
- Lesson Guide
- [3] Tech Excellence Medallions
- [30] Tech Excellence Certificates
- Workstation Sign

841080\$2,995

Radio Labs



Radio Broadcasting for Schools, Radio Clubs, Summer Camps or any local radio broadcaster. No license required.

Broadcast AM Radio Station

For schools or camps! All the professional equipment needed to "DJ in. a show or produce a complete radio program and broadcast it on the air. Complete cabling is included to "plug-and-play in. the studio in minutes. Complete package includes: AM Radio Transmitter, Indoor AM Antenna, Transmitter Power Supply, Radio Mixer, Mic and Stand, Powered Stereo Speakers, and all connecting cables.

842136\$995

Satellite Lab

Set up the Satellite Receiver, Aim It and Receive Satellite Images and Programs WITHOUT MONTHLY SUBSCRIPTION CHARGES!

KELVIN® Satellite Communications Lab

Learn about satellite communication with this system. Set up a satellite dish receiver, aim it and receive satellite images and programs.

Great hands-on learning about satellite communication. This satellite receiving dish (3 ft. dia.) allows students to set up the antenna outside the classroom and aiming it at a satellite using the compass.

This small satellite dish will receive microwave frequencies from 11.7 to 12.2 GHz KU band. The two-way walkie-talkie set can be used to communicate with students in the classroom or outdoors (within 1/2 mile). Transmits in auto or manual modes.

Students can also record raw satellite broadcasts from the field and edit them for a classroom news presentation. The editing process can be combined with the audio/video workstations. Suitable for students in Grades 6 and up.

This lab includes:

- Real Satellite Dish: Parabolic, Portable (36 in. diameter)
- Satellite Receiver
- Fixed KU Band Feed
- Patio Mount
- 2-Way Walkie/Talkie Set
- 13 in. Color TV/VCR
- 60-ft. Coax Cable
- Additional VCR for Rough Editing of Raw Footage
- Compass
- Weatherproof LNB Cover
- Instructional Manual
- Workstation Sign

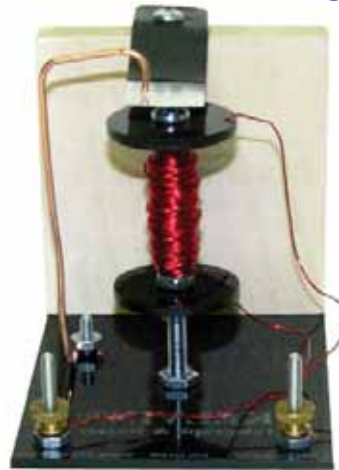
280347\$995



Communications With an Actual Satellite Receiver!

Telegraph Lab

KELVIN® Build Your Own® Telegraph



KELVIN® Telegraph and Buzzer Kit

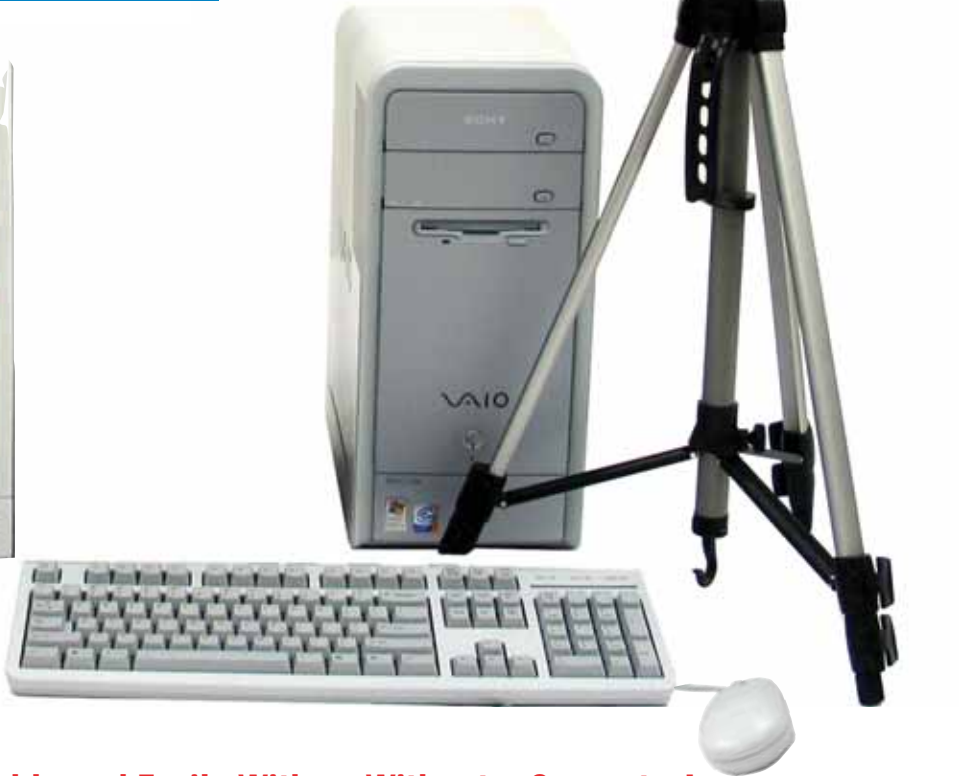
Wind coil, connect wires and learn to operate and communicate with this system. Have your students take an interdisciplinary journey into the world of telecommunications. Your students will also discover the history of the telegraph, the science of magnetism and electrical circuits and the technology of sending data over wires. The activities culminate with the construction of a real, working telegraph sender and receiver.

Included in the kit are materials and instructions for experiments: magnetize a nail using a rare earth magnet, build an electromagnet, levitate ceramic magnets, and investigate circuits. Batteries are included.

841978 Individual Kit\$39.95 or **\$36.95** ea./6+
283119 Bulk Pack for 10 Students\$350



Everything Students
Need to Record,
Edit and Output
High Quality Video
Projects to DVD,
DV or VHS



Create Videos Quickly and Easily With or Without a Computer!

KELVIN® Computerized Video Production Labs

Today, with super fast computers, available memory and ample hard drives, videographers are switching to computers to edit, cut, paste and organize video footage. Plug in your video monitor, camera and deck and you're ready to make great movies! This lab gives you what you need to learn about videography.

All Labs include:

- Computer with a 19-inch LCD Monitor
- Camcorder
- DVD/VCR Deck
- Color TV Monitor
- Pre-Installed Editing Software
- Camera Storage Case
- Light Tripod, Light & Umbrella
- Blank VHS tapes
- Blank DVDs
- Related Books
- Workstation Sign

Labs with 1 Camcorder:

- 842000 w/ [1] SD Camcorder.....**\$1,795**
- 841400 w/ [1] Dv Camcorder.....**\$1,995**
- 841909 w/ [1] Hard Drive Camcorder....**\$2,495**
- 842002 w/ [1] HD Camcorder**\$2,995**

Labs with 2 Camcorders:

- 842001 w/ [2] SD Camcorders**\$1,995**
- 841686 w/ [2] DV Camcorders**\$2,495**
- 841910 w/ [2] Hard Drive Camcorders...**\$2,995**
- 842003 w/ [2] HD Camcorders**\$3,995**



PROJECT COMTECH

FROM SMOKE SIGNALS TO FIBER OPTICS,
COMMUNICATING WITH LIGHT



Students use troubleshooting techniques in all Project ComTech™ projects—they are not given the standard foolproof, step-by-step instructions.

KELVIN® Project ComTech™ Lab

In this pilot module, **Communicating with Light: From Smoke Signals to Fiber Optics**, students become familiar with the elements of communications systems as well as with basic electronics, coding schemes, and the properties of light. Students master a limited number of powerful technology and science concepts, sense the excitement and challenge of technology, and develop critical thinking and reasoning skills that can be transferred to all disciplines. This instructive modular lab, supplemented with electronic, electro-optical, electrical and mechanical components, is recommended for use in grades 6-10 science and technology classes.

The **key components** are five electronic circuit boards (or modules) which accompany the written material. Modules 1 and 2 are very simple; Modules 3 and 4 are more advanced. The **five Assembled Modules** include: Light Sensor Module, Light-Emitting Diode (LED) Module, Voltage to Frequency Converter Module, Audio Modulator Module and Amplifier Module.

The **written material**, approximately 178 pages in length, describes a number of activities addressing light communication technology. Starting with simple low-technology flashing light communication systems and codes, students progress through voice-modulated signals employing optical fiber.

Technical topics covered include: signal codes, properties of light, transducers and simple circuitry. Sensory feedback is provided throughout the experiments with flashing lights, attractive colors, vibrating transducers, and interesting sounds.

Unit 1

- How People Communicate (talking, drawing, Braille, camera, drums, telephone, etc.)
- Experiment with Batteries / Bulbs (light emitting diode, building and testing the flashing light communicator)
- Coding and Sending Messages (morse code, flashing light, binary code, encoding transmitting, receiving and decoding messages)

Unit 2

- Improving Communication with Electronic Circuitry (light sensor, voltage to frequency converter, loud speaker, power supplies, input /output and how they are connected, electronic measurements, range and speed).

Unit 3

- Communicating with Optical Fiber
- Understanding the Properties of Light Which Makes Optical Fiber Communications Possible (reflection, deflection, total internal reflection, light following in curved path, light traveling through fiber, light splitting into two fibers, sending your voice over a beam of light, making an optical fiber coupler)

This **modular lab** includes: [5] Assembled Modules, Lab Manual, Batteries, Fiber Cable, Light Bulbs, Speakers, Hookup Wire, Alligator Clips, and Plastic Parts for Light Devices. Other material will need to be supplied by the teacher in order to conduct activities (such as a c-clamp, milk, water, ruler, etc.). Grades 6-10 science and technology classes.

841284	Project ComTech™ Modular Lab	\$195
841306	Project ComTech™ Class Pack of 4 Sets.....	\$775
651567	Project ComTech™ Lab Manual	\$29.95



Project ComTech™ was created by the Science Education Department of the Harvard-Smithsonian Center for Astrophysics, with support from the National Science Foundation.

Explore Fiber Optics & Laser Beam Communication!



VOICE OVER™ FIBER OPTICS

VOICE OVER™ LASER BEAM

KELVIN® Voice Over™ Fiber Optics Trainer

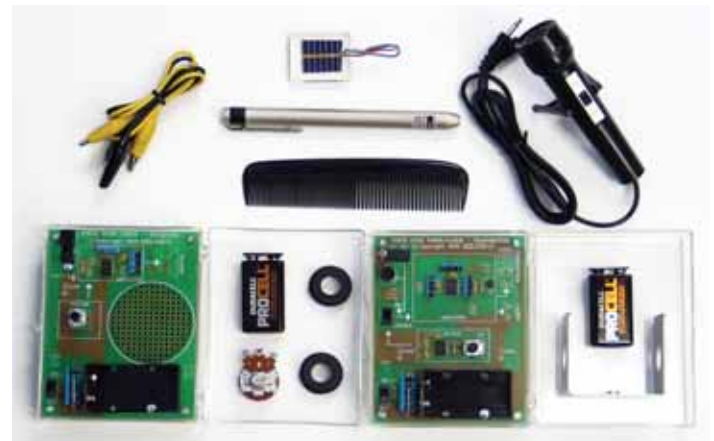
KELVIN's® Voice-Over Fiber Optics™ Trainer helps students explore basic fiber optics communications with simple, hands-on activities. In addition, this trainer features a voice transmitter and receiver—making it ideal as a demonstrator. An input jack allows students to access laser disc players or tape recorders for additional activities in communications.

KELVIN's® Voice-Over Fiber Optics™ Trainer Features:

- Transmitter
- Signal Generation
- Microphone
- Receiver
- Volume Adjustment
- Input Jack

The completely assembled trainer includes: transmitter, receiver, microphone, input jack, fiber optics cables and lab manual. Requires one 9V battery. Great for grades 5 and up.

840641 Voice-Over™ Fiber Optics Trainer **\$79.95**



KELVIN® Voice Over™ Trainer with Laser Beam

The best of the Voice-Over™ Trainers—it's an economical way to study laser beam communication!

Use the trainer to demonstrate voice modulation or transmit voices or music over a laser beam. An input jack allows students to access CD players or tape recorders for additional activities in communications.

The Voice Over™ Trainer with Laser Beam covers:

- Light Communication
- Fiber Optics
- Beam Divergence and Graph
- Beam Intensity
- Using the Voice-Over™ Laser
- Parts and Operation
- The Laser Diode
- The Transmitter
- The Receiver

The Voice-Over™ Laser Trainer also includes: Assembled Voice-Over™ Fiber Optics Trainer, transmitter/receiver, microphone, input jack, laser pointer and manual. Recommended for grades 8 and up.

840874 Voice-Over™ Laser Beam Trainer **\$145**

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Section 1:

Getting Started

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Section 3:

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- 3.3... Disadvantages
- 3.4... Laser Communication

Section 4: Fiber Optics

- 4.1... Optical Fibers
- 4.2... How Fiber Optics Work
- 4.3... Advantages

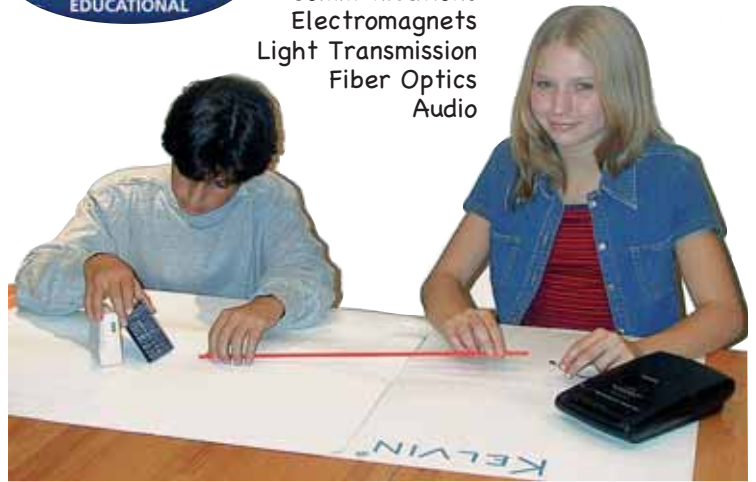
Section 5: Elements

- 5.1... Introduction
- 5.2... Transmitter
- 5.3... Receiver

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- 6.1... Using The Lab
- 6.2... A Simple Experiment

Communications
Electromagnets
Light Transmission
Fiber Optics
Audio



Introduction to Fiber Optics Lab

Fiber optics is a hybrid of 3 technologies: optics, lasers and electronics. This module gives a comprehensive understanding of fiber optics. Begin with the history of fiber optics, discuss several applications, get into a little physics when we talk about light in the fiber cable and list the different types of transmitters and receivers and how they work.

Hands-on activities include: Duplex data transmission, transmission of radio signals, remote passive optical detection sensor, attenuation, bending losses, fiber termination, electronic repeater and much more.

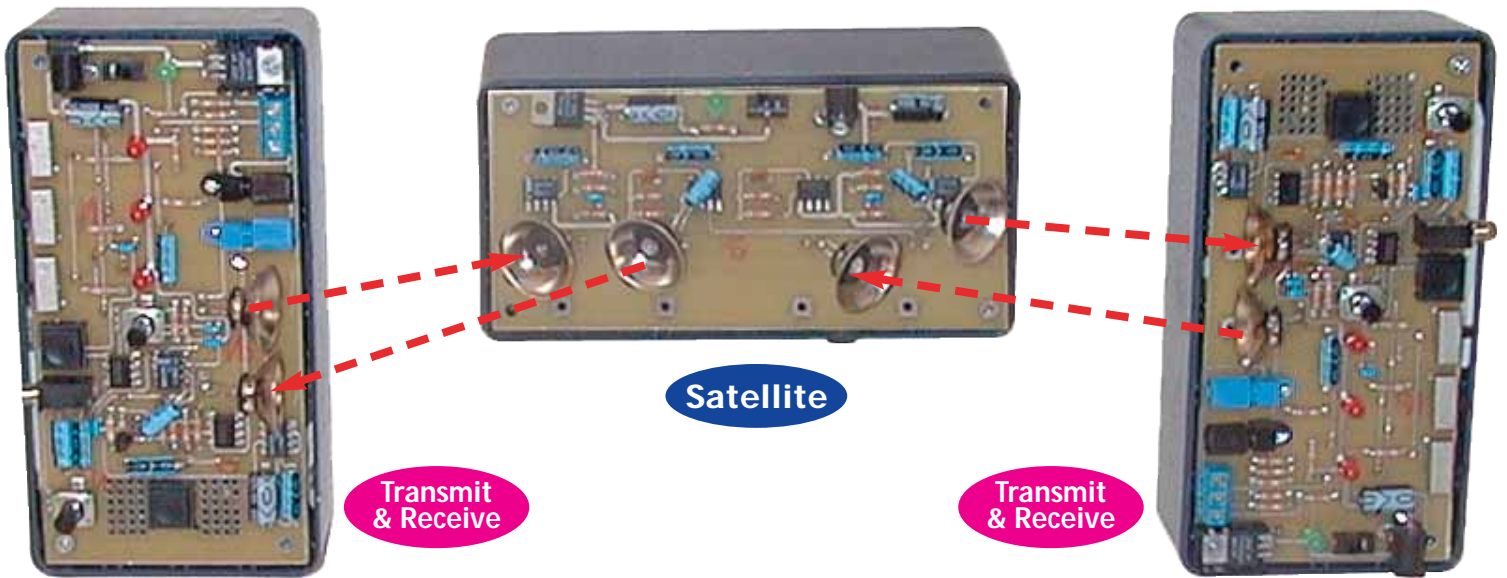
282118 Introduction to Fiber Optics Lab **\$1,250**

KELVIN® Electronic Communications & Technology (EC&T™)

For many students, the introduction of communication concepts can be confusing. Providing them with hands-on activities in communications can improve their comprehension level.

The Student Supply Kit includes: tape recorder, bulb sockets, bulbs, battery holders, batteries, solar cell, infrared pair, LEDs, resistors, lenses, mirrors, screwdriver, pliers, soldering iron, solder, speaker, speaker with amp, digital VOM meter, switches, phone plugs, alligator clips, washers, lucite rod, screws, wire, crazy glue, tuning fork, and a flashlight. Also included is a student manual and teacher's guide.

840737 EC&T™ Lab with Student Supply Kit **\$245**
650580 Additional EC&T™ Manuals **\$14.95**



KELVIN® Multiple Ways to Communicate Lab

Futuristic laser and fiber optics communication isn't just part of sci-fi television shows anymore; they are the state of the art in communications today. Students learn about fiber optics, lasers, wire, and infrared communications. Hands-on activities include simulating a satellite station and exploring laser voice modulation with this lab.

This start-up package features the KELVIN® Communication System™ with hands-on activities that include simulating satellite data relay stations. The Voice-Over Laser Beam™ (transmitter and receiver) can be used to explore laser voice modulation. Grades 6-9.

841006 Simplex (1-Way) Communication System Only **\$195**
841106 Duplex (2-Way) Communication System Only - Shown **\$395**
840744 Multiple Ways To Communicate Lab..... **\$699**

Lab includes:

- Duplex Communication System™ with Satellite Simulator
- Voice Over Laser Beam™ Trainer
- Double Hand Holder
- Laser Diffraction Tool
- Convex/Concave Mirrors
- Jump Lead Set
- *Fundamentals of Laser Technology* Video
- *Getting The Message* Book
- *Light Wave Communication* Book
- Activity Resources
- Lesson Guide
- Workstation Sign

Fiber Optic Mini-Course

A short course covering the basic concepts of fiber optic communications and industrial applications, intended as a supplement to other more general electronics classes. Course comes complete with a classroom manual and kit containing all required electronic components, including printed wiring boards, fiber optic LED, photodetector and cable. No prior fiber optics experience or special tools are needed for assembly and demonstration.

281675\$49.95



Intermediate Fiber Optic Lab Course

Part One places fiber optics into perspective as a transmission medium. Part Two examines fiber sources, detectors, and connectors. Part Three covers link system design, installation, special hardware, applications and equipment.

Includes an optical light pipe, fiber optic cable, splices, connectors and polishing film, with LEDs, photodetectors, transmitter and receiver electronics as well as a 68-page experiment guide with nine fascinating fiber optics experiments. No special tools or training required.

281678\$145

Intermediate Fiber Optic Lab Course Instructor's Edition

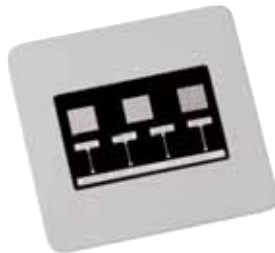
Instructor's Edition contains the items above, plus an answer guide, different types of optical cable, image guides, LEDs and detectors.

651461\$195

Diffraction Mosaic

Diffraction Mosaic contains 7 different slots and grids using precisely generated transparent slots on an opaque film. With these apertures you can observe and measure characteristics of light. The mosaic simplifies demonstrating the wave properties of light, and reduces errors in experimental setup.

281676\$11.95



Fiber Optic Test Set

This is a versatile and rugged fiber optic test instrument specifically designed for use with plastic optical fiber. It features capabilities for: performing fiber continuity checks, measuring fiber output power, calibrating and screening detectors, measuring LED power and measuring the fiber attenuation. The Test Set includes two 9V batteries, a sturdy storage container, a test cable and an easy-to-read instruction manual.

281680 Fiber Optic Test Set\$325

283018 Laser Test Set\$295



Fiber Optic Demo System

This tried and proven academic module comes complete and ready to use. The curriculum manual is precisely formatted into 10 independent activities in 144 pages with more than 60 real-world illustrations and industry photos. An extensive list of references and a working glossary of fiber optic terms is included.

Hands-on activities include: Voice transmission over fiber, Analog and digital data transmission, Morse code over fiber optics, Optical fiber characterization, Fiber sensors and applications, Bending losses in optical fibers, Optical fiber termination and polishing, and Attenuation in optical fiber.

The Demonstration System includes the following items: two fiber optic analog/digital transceivers, eight fiber lengths 1 to 10 meters, 40 µm and 3 µm polishing film, 110 VAC-to-12 VDC power adapters, color-coded electrical interconnecting leads, AM/FM radio, sensor reflection and indicator cards, two permanently bound student manuals, instructor's manual in a sturdy 3-ring binder with answer sheets.

281677\$995



WBS Laser Communication Package

The most versatile laser on the market because of its dual analog and digital input design and its very wide electrical modulation bandwidth. The analog input accommodates signals as low as 100 Hz for laser audio communications experiments to as high as 70 megahertz for simultaneous transmission of color video picture and sound. The digital input accepts all standard +5 volt logic levels for digital communications experiments. This package includes the WBS Laser, as well as a microphone, AM/FM radio, patch cords and an audio receiver.

281679\$795



Fiber Optic Tool Kit

This kit contains fiber optic stripper, hot knife, professional fiber cutter, water dispenser, rubber pad, 2000 grit and 3 µm polishing film, replacement blades, ST fiber polishing puck, rugged storage container and booklet.

281673\$165

Professional Fiber Cutter

This cutting device will easily produce precise cuts and fiber ends. Includes with fiber cutter body, five "Extra KEEN in. razor blades and instruction guide.

281674 Professional Fiber Cutter\$34.95

470034 Razor Blades, 100/pkg.\$9.95



60W Heavy Duty Hot Knife

470093 w/Brass Cutting Edge\$89.95

Fiber Optic LEDs and Photodetectors

Phototransistor Simplest to use!

630410\$3.95 or \$3.75 ea./10+

Photologic Detectors w/ Totem Pole Output

630411 150 kbps\$6.95 or \$6.45 ea./10+

630412 50 Mbps\$21.95 or \$19.95 ea./10+

Infrared LED Short distance applications

260151 950 nm\$12.95 or \$11.95 ea./10+

Visible Red LED

260152\$5.95 or \$5.45 ea./10+

50 Mbps Red LED

High power for fast electrical switching times.

260153\$14.95

Fiber Optics Cable

1mm Core, Jacketed, Simplex.

85061055¢ per ft.

1.5mm Core, Unjacketed.

33039755¢ per ft.

Fiber Optics Rod

330398\$7.95



Adventures in Fiber Optics Kit

With this product you can follow the exploits of famous experimenters such as Galileo, Franklin, and Gould and begin to explore fiber optics and learn more about this fascinating world of fiber optical technology.

Five projects and 20 experiments include:

- Bending a Light Guide
- Fluorescence
- Tyndall's Prestigious Experiment
- Special Fiber Optic Lighting
- Art of Polishing Glass
- Making Your Own Image Conduit

Kit items include penlight, rubber light hood, 6 different optical fiber types, Ulexite fiber optic rock, 3 coherent fiber optic components, color filters, lens, star/constellation map, polishing film and miscellaneous components. Grades 5 & up.

281669 Kit\$79.95



Optical Voice Link

The ideal introduction for students first learning about the marvels, mysteries and science of light transmission through optical fiber.

Kit includes: printed wiring boards, switches, electronics, microphone, 8-ohm speaker, three meters of plastic optical fiber, 32-page instruction booklet, and step-by-step assembly instructions.

No prior fiber optics experience, special tools or training are needed to build, use and enjoy the multiple applications of this kit. Some soldering experience is recommended for completion of the unassembled version.

281670 Kit\$59.95

281671 Assembled\$115



Educational Communication Kit

The Communication Kit is an easy-to-assemble, digital link for experimenting and beginner science projects. The digital link also can be used to construct high-voltage isolation for telephones, modems and computers. Kit contains a red LED and photodetector, a meter of optical fiber, printed wiring boards, polishing film, an oscillator chip, electronic components and instruction booklet. Suitable for students in grades 9 and above (we recommend some soldering experience for assembly).

840397 Kit\$21.95



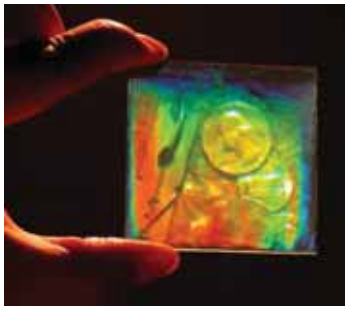
Science Project Kit

Students learn about fiber optics the easy way by experimenting and building fascinating, functional projects. No prior experience is needed. The practical, 224-page text begins with easily grasped discussions about fiber optics fundamentals.

Next are eight lab experiments and a final section with five intriguing projects, including Getting Acquainted with a Light Pipe, an AM Fiber Optic Receiver, and Fiber Optic Light-Pen Cable. Finished products such as an analog voice link and a light pen have many daily uses and applications.

Kit includes all necessary fiber optic parts, connectors and cable. Ideal for science projects in both advanced junior high and high school classrooms.

281672 Kit\$59.95



Holography Starter Kit

Used by thousands of teachers, students, and hobbyists from over 50 countries each year, this hologram kit provide the essentials for you to make many kinds of holograms in your classroom or home.

EASY! There's no need for you to work with beam splitters, front surface mirrors, or vibration isolation tables. So students can easily make holograms in the classroom.



Includes the following booklets:

- Holography (20 pages): This booklet provides detailed explanations on how many kinds holograms work, including holographic movies. Uses high school levels physics without the math. Recommended for instructors and students.
- Laser Holography: Experiments You Can Do (32 pages). This booklet provides instructions at the most elementary level on how to make seven different kinds of holograms. Suitable for beginners and teachers.

Each hologram kit includes a Laser, Glass Plates (12 each of 2.5 x 2.5 in. size), Extra Fast Chemical Developer, Instruction Booklets, and more.

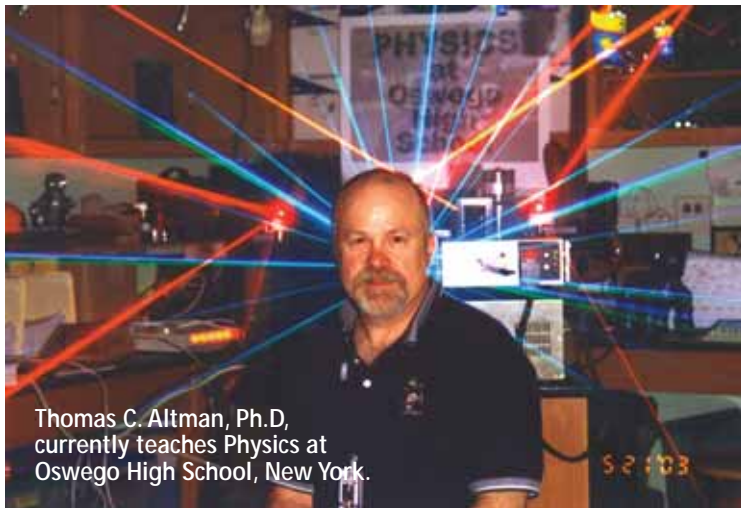
283583 Holography Starter Kit	\$195
283584 Additional Developer Processing Kit	\$34.95
283585 Additional Plate Glass, 2.5 x 2.5 in., 6/pkg.	\$39.95
283586 Additional Plate Glass, 2.5 x 2.5 in., 30/pkg.	\$159.95

Thomas Altman's Laser Optics Kit

This versatile and economical optics kit, designed by Thomas Altman, can screw fit any laser. Use these optics with holography and lasers units for hands-on experiments.

Kit includes: Mounting Adapter, Broad Beam Slicer, Narrow beam slicer, Arc Beam Steer, Star Diffraction Pattern, Fresnel Lens, Random Detraction Pattern, Diverging Device, Polarizer, Spider Web Optic, and Fiber Optic Cable.

280396 Kit	\$149.95
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Thomas C. Altman, Ph.D, currently teaches Physics at Oswego High School, New York.



KELVIN's Kel-Laser Pointer also works with the **KEL-ACCEL™**, **KEL-TIMER™** and **KEL-TIMER™ JR.** in the **DATA ACQUISITION** chapter on pgs. **DA2-3**

KELVIN® Kel-Laser™ Pointer with Stand

Use KELVIN® Laser Pointer with stand and power adapter to shine at the receiving infrared diode and extend the distance of the beam. Great for an egg drop competition (with the egg falling on concrete, not plywood) or push cart. Also works with Kel-Timer™, Kel-Timer™ Jr. and KelAccel™. Includes a built-in, adjustable stand and a wall adapter to eliminate the need for battery consumption.

841148	\$125
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Laser Pointers

Use to align structures or car chassis, for non-destructive model bridge testing, alarm applications, etc. The **Economical pointer** (shown above) requires coin batteries. The **Quality Laser Pointer** (shown right) requires 2 'AAA' batteries and has a 1 yr. limited warranty.



280595 Economical Laser Pointer (shown above)	\$4.95
280431 Good Laser Pointer.....	\$39.95
840588 Top Quality Laser Pointer (shown in box at right)	\$59.95



Laser Pointer Activities

By Thomas Altman. Consists of nine laser pointer activities: earthquake detector, music controlled laser patterns, crystal ball laser projector, diffraction and moving diffraction grating, representing a black hole, laser Lissajous patterns and twisting beams. Also explores the issues of safety and use in the classroom.

652291 Guide, 27 pages.....	\$9.95 or \$8.95 ea./20+
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Laser F/X

Learn how to build your own laser show with this video. This video is designed to teach you everything you need to know to build and control your own laser show. Includes basic laser theory and construction, different laser colors and a brief discussion of optical safety.

120854 Video, 35 min.	\$69.95
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Build Your Own® Digital Photography Studio



**Top of the Line Studio
Includes a 19 in. LCD Monitor!**



Digital Photography Modular Labs

Students can take professional pictures and instantly see results! Learn how to set-up shots, work with lighting and work with

Digital Photo Lab 1

Basic Digital Photo Lab (see specs in right column). Grades: EL, MS, HS.

841705\$1,995

Digital Photo Lab 2

Basic Digital Photo Lab, #841705 (see specs in right column), plus better camera upgrade and Adobe Photoshop software. Grades: MS, HS.

841077\$2,995

Digital Photo Lab 3

Basic Digital Photo Lab, #841705 (see specs in right column), plus Digital SLR camera upgrade, Adobe Photoshop software, Light Package, and Nikon Flash. Grades: HS.

841706\$3,495



All labs include:

- Computer with DVD/RW Drive
- 17 in. LCD Monitor
- Digital Camera
- Tripod
- Photo Printer and Cables
- Inkjet Paper Assortment
- Multimedia Software
- Beginning Photo Editing Software
- Workstation Sign

Learn About the Photographic Process

KELVIN® Pinhole Camera Kit

Let your students learn how a camera works and about the chemistry based photographic process with this hands on kit from KELVIN®. Everything you need is included: pinhole camera, photographic paper, trays, tongs and chemicals.

841901 Kit (shown at right)\$95

HOLE-ON EX: Make and Shoot Pinhole Camera Kit

This well-designed kit includes all of the camera parts needed, printed on heavy durable cardstock, die-cut and scored for easy assembly. A metal pinhole aperture is included. The assembly requires only glue, a ruler and a pencil. Step-by-step instructions mean the camera can be ready for shooting in less than two hours using standard 35mm film (not included). When assembled, the camera is about the size of a disposable camera.



283505 Kit.....\$19.95 or \$18.95 ea./3+ or \$17.95 ea./6+

