Physics: CINEMA CLASSICS

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PHYSICSviews™

In 2002 the American Association of Physics Teachers (AAPT) and Ztek Co. decided to produce a set of DVD-videos using the compilation of over 245 "classic" physics experiments from over one hundred sources that was originally on three double-sided CAV videodiscs published in 1992. These videos provide convenient access to material from Physical Science Study Committee 16mm films, Project Physics 8mm film loops, Ealing 8mm film loops, and many others. The videodiscs were part of a National Interactive Media Project for Secondary Physical Science Courses, a project funded by the United States Department of Education (award number R168D90059).

The video and still images on the DVDS are accompanied by instructor's hints and two separate audio channels: an inquiry track and an explanation track. Experiments can be accessed using the DVD player remote control, a bar code reader and the bar code directory included on the accompanying CD-ROM. Each DVD is accompanied by a CD-ROM of Ancillary Materials that includes a comprehensive Teacher's Guide along with other useful teaching references. (see below for CD-ROM contents). The appropriate grade level is 7+.

The Teacher's Guide accompanying the Physics: CINEMA CLASSICS (P:CC) was developed over three years (1993-'95) with funding from the National Science Foundation (NSF) Instructional Materials Development Program (award number ESI-925253). The development of other ancillary materials on the CD-ROM was funded in part by grants from the NSF Small Business Innovation Research Program and the Kentucky Cabinet for Economic Development. The Teacher's Guide was prepared by a writing team of over 25 experienced high school physics teachers and editors. The writing team was led by Professor David M. Winch of the Kalamazoo College Science Department.

Physics: CINEMA CLASSICS DVD-Videos Content

DVD 1: Mechanics(I)
Time and Place
Uniform Motion
Accelerated Motion
Free Fall
Vectors
Forces
Newton's Laws

DVD 2: Mechanics (II) and Heat
Projectile Motion
Circular Motion
Periodic Motion
Planetary Motion
Heat and Temperature
Gas Laws

DVD 3: Waves (I)
Wave Propagation
Periodic Waves
Superposition
Standing Waves
Reflection
Refraction
Dispersion

DVD 4: Waves (II) & Electricity and Magnetism
Interference
Diffraction
Color, Scattering, and Polarization
Electrostatics
Electric Currents
Magnetism and Magnetic Fields
Electromagnetism

DVD 5: Conservation Laws
Work and Energy
Energy Conservation
Linear Momentum
Elastic Collisions
Inelastic Collisions
Collisions

DVD 6: Angular Momentum and Modern Physics
Angular Momentum
Atoms, Molecules and Models
Photons and X-rays
Electrons
Particles and Waves
Nuclear Physics
Condensed Matter

ISBN:	Order No.	DVD Title
1-56934-021-8	D00921	PCC 1- Mechanics (I)
1-56934-022-6	D00922	PCC 2 - Mechanics (II) and Heat
1-56934-023-4	D00923	PCC 3 - Waves (I)
1-56934-024-2	D00924	PCC 4 - Waves (II) & Electricity and Magnetism
1-56934-025-0	D00925	PCC 5 - Conservation Laws
1-56934-026-9	D00926	PCC 6 - Angular Momentum and Modern Physics
	D00920	PCC - Set-of-Six

The list price is $299 each.
The educational price is $199 each.
The educational price for purchasing all six is $999.
Ground shipping in United States is $10 for each DVD in order.
International and air shipping is determined for each order.

Physics: CINEMA CLASSICS CD-ROM

Narrative and Answers to Questions - *complete audio script along with answers to questions.*

Comprehensive Teacher's Guide - *with over 2,000 pages of lessons that include concepts, descriptions, teacher information, classroom activities, and answer sheets.*

National Standards - *cross-referenced P:CC physics lessons to the applicable Content Standard for Physical Science in the National Science Education Standards.*

Reference Materials - *Unit Conversions, Fundamental Constants, SI Units, etc.*

Physics Textbooks Cross–reference- *popular high school physics textbooks cross-referenced to lessons.*

Physical Science Textbooks Cross–reference & Guide - *popular physical science textbooks cross-referenced to lessons along with a Guide for using P:CC in Physical Science courses.*

CD-ROM Requirements *All documents on the CD-ROM are in a Portable Document Format (PDF) and will work with Macintosh or Windows platforms. Macintosh requires System 7.0 and 4MB RAM. Windows requires 3.0 (compatible with Windows 95) and 4MB of RAM. Both also require a CD-ROM drive and printer.*

The purchase of Physics: CINEMA CLASSICS™ videodiscs and ancillary materials is for a **SINGLE-LOCUS** licensing agreement. A **MULTIPLE-LOCUS** agreement is available that allows the digitizing of images from the discs along with using P:CC over a computer network or a school video system. The price is based on the number of students using P:CC. Neither license agreement allows the use of images on the INTERNET, WORLD WIDE WEB, COMMERCIAL NETWORKS or for commercial applications. The license agreement is available from www.ztek.com. Sample lessons are also available at www.ztek.com. Grade Level: 7+ Media: DVD-video (videos & still images), CD-ROM (teacher's guide)

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The Story of Physics: CINEMA CLASSICS

In the late 1980s, members of the American Association of Physics Teachers (AAPT) conceived the idea of collecting the classic physics films which had been used successfully by thousands of teachers for decades. Physical science 8mm film loops and 16mm films were no longer being produced and those still in schools were becoming difficult to use because of film and viewing equipment deterioration. These classic films contained a wealth of physics demonstrations and lab experiments. The AAPT members saw the need to preserve the best of a valuable national educational resource by retrieving the most relevant excerpts from these films and transferring them to a videodisc collection.

A grant request was approved by the U.S. Department of Education for funding a National Interactive Media Project for Secondary Physical Science Courses (award number R168D90059). The objectives of the project included identifying the physical science film sources, most developed in the 1960s and 1970s, and obtaining the rights to edit the films to produce a comprehensive collection of physical science demonstrations and lab experiments on laser videodisc. Professor Robert Fuller of the University of Nebraska at Lincoln was the project leader. Software and ancillary print material would supplement the videodiscs. The videodiscs could be used in secondary education, introductory college courses, and advanced middle school courses. Instead of the frequently used linear presentation, the videodiscs were designed to include many succinct vignettes and slides showing demonstrations and lab experiments which otherwise would not be economical for many schools. And most importantly, the videodiscs were designed to support the teacher who wished to have a highly interactive physics classroom to help motivate today's visual learners.

The Physics: CINEMA CLASSICS (P:CC) project was begun in September 1989 and directed from the AAPT's Instructional Materials Center at the University of Nebraska-Lincoln. Kalamazoo College also played a major role in the P:CC project.
Project oversight was provided by the AAPT's Committee on Physics in High Schools. In addition, numerous prominent secondary school physical science educators consulted on P:CC. During 1990, film was reviewed and selected. Seven contributors made films available for P:CC: Encyclopaedia Britannica Educational Corporation, Educational Development Corporation, McGraw-Hill, Inc., Newton's Apple, North American Philips Corporation, Phoenix Films and Video Inc., and Visual Almanac from Apple Computer, Inc. The collective investment in the development of these source films was many millions of dollars and spanned several decades.

Hundreds of high school teachers from around the nation participated in evaluating P:CC throughout its development. Extensive teacher evaluations and revisions were conducted during 1991. The most common format was teacher workshops coordinated through Kalamazoo College. In the spring of 1992 a pre-commercial release of P:CC was made available for purchase by AAPT members. Additional evaluations of the P:CC pre-release version were obtained over the summer and fall of 1992. Enhancements were finalized in early 1993 and the commercial version was approved for release in the spring of 1993.

P:CC includes three double-sided videodiscs providing immediate access to almost 2,000 still images and video segments comprising a compilation of over 245 "classic" physics experiments from over one hundred sources The video and still images are accompanied by instructor's hints and two separate audio channels: an inquiry track and an explanation track. Experiments can be accessed using the videodisc player remote control, a bar code reader and the bar code directory (included on the accompanying CD-ROM), or computer software (either Macintosh or IBM/compatible) that is sold separately. The videodisc is accompanied by a CD-ROM of Ancillary Materials that includes a comprehensive Teacher's Guide along with other useful teaching references such as: Bar Code Directory – with bar codes to each of the 245 experiments; Narrative and Answers to Questions – complete audio script along with answers to questions; Comprehensive Teacher's Guide – with over 2,000 pages of lessons that include concepts, descriptions, teacher information, classroom activities and answer sheets; National Standards – cross-reference the lessons on the CD-ROM to the National Science Education Standards applicable standards; Reference Materials – Unit Conversions, Fundamental Constants, SI Units, etc.; Physics Textbooks Cross-reference – popular high school physics textbooks cross- referenced to lessons. Physical Science Textbooks Cross-reference & Guide – popular physical science textbooks cross-referenced to lessons along with a Guide for using P:CC in Physical Science courses.

The Teacher's Guide that accompanies Physics: CINEMA CLASSICS was developed over three years (1993-'95) with funding from the National Science Foundation (NSF) Instructional Materials Development Program (award number ESI-925253). The development of other ancillary materials on the CD-ROM was funded in part by grants from the NSF Small Business Innovation Research Program and the Kentucky Cabinet for Economic Development. The Teacher's Guide was prepared by a writing team of over 25 experienced high school physics teachers and editors. The writing team was led by Professor David M. Winch of the Kalamazoo College Science Department.

With the introduction of DVD technology and the phasing out of laser videodiscs (after over 15 years of successful use in thousands of education institutions), in 2002 the AAPT and Ztek Co. decided to convert the videodiscs to the DVD format. Each side of the three videodiscs is being produced, with as few modifications as possible, on a DVD-video that maintains the interactivity that was in the videodiscs. The Teacher's Guide, including the activities and lessons, will continue to be included on a CD-ROM. The DVD version is scheduled for release in September 2003, thus preserving these valuable materials for continued use with another evolution of technology in the classroom.

P:CC and all ancillary materials are published by Ztek Co., P.O. Box 967, Lexington, KY 40588-0967.