

## PHYSICS

DVDs in this area are focused on building skills in Physics, which gives many students difficulty because this subject is essentially the combination of math and word problems.

These Physics DVDs focus on building problem solving skills by working many fully narrated example problems in step-by-step detail. In this way the student gains confidence and improves skills immediately.

### PHYSICS HELP: THE ULTIMATE PHYSICS TUTOR - 2 DVD'S

**Running Time: 11 Hours**

**R1 500.00**

**Disk 1:**

Velocity And Acceleration In One Dimension, Equations Of Motion In One Dimension, Scalars And Vectors, Projectile Motion, Newton's Laws Of Motion, Newton's Laws Of Motion With Friction, Work, Kinetic Energy And The Work-Energy Theorem, Potential Energy And Energy Conservation, Power

**Disk 2:**

Momentum And Impulse, Conservation Of Momentum, Inelastic And Elastic Collisions, Angular Speed And Angular Acceleration, Rotational Equations Of Motion, Tangential Speed And Centripetal Force, Gravitation And Kepler's Laws Of Motion, Torque, Rotational Equilibrium, Angular Acceleration & Moment Of Inertia, Angular Momentum, Density And Pressure, Buoyant Force, The Bernoulli Equation

### PHYSICS HELP: THE ULTIMATE PHYSICS 2 TUTOR, (THERMODYNAMICS)

**Running Time: 10 Hours**

**R1500.00**

**This 3 DVD Set covers the Physics of Thermodynamics.**

**Disk 1**

Thermometers and Temperature Scales, Expansion and Contraction of Solids and Liquids, Kinetic Theory of Gases

**Disk 2**

Heat, Latent Heat and Phase Change, Heat Transfer by Convection, Radiation, and Conduction, Work, Heat, and PV Diagrams

**Disk 3**

The First Law of Thermodynamics, Heat Engines and the Second Law of Thermodynamics, Refrigerators, Entropy

**PRICES EXCLUDE VAT**

**AFRICAN EDUCATIONAL DISTRIBUTORS**

**Paula van Rensburg 076 063 4320 / 011 616 8415 (t) / (011) 615 5384 (f)**

**F = ma: Physical Science Concepts # 9133****R2 000.00**

This engaging three-part series defines the elements of Newton's Second Law—force, mass, and acceleration—plus related topics such as velocity and inertia; demonstrates them using basic calculations; and applies them in real-world examples. Video, animation, graphics, and narration combine to make this an excellent introduction to this fundamental law of physics. **Correlates to the National Science Education Standards developed by the National Academies of Science and Project 2061 Benchmarks for Science Literacy from the American Association for the Advancement of Science.** 3-part series, 9-12 minutes each.

**Acceleration****R2 000.00**

This program defines and demonstrates the concepts of speed, velocity, and acceleration, using basic equations to stress their interrelation. There is also a demonstration of how a variation of Newton's second law of motion can be used to determine the weight of an object. In addition, the contributions of Galileo and Newton to the understanding of acceleration, gravity, and motion are discussed. (12 minutes)

**Force****R2 000.00**

Using visual examples and basic calculations, this program defines and illustrates the concept of force, with an emphasis on the relationship between force and motion. Several kinds of forces are examined, including gravity, friction, and centripetal, centrifugal, magnetic, electromagnetic, electrostatic, and nuclear forces. The experiments and findings of Galileo and Newton are introduced as well. (12 minutes)

**Mass****R2000.00**

This program uses original animation and live-action examples to present the concepts of mass, matter, and inertia, clearly distinguishing between mass and weight. Also, Newton's laws of motion are introduced, with an emphasis on mass as a measurement of inertia. (9 minutes)

**FORCES AND MOTION****R2 000.00**

In New York City, there are many ways to travel. Of course, it's a lot easier if you're a bird. Using the Big Apple as a living laboratory, this program addresses speed and distance using a pigeon, a taxi, and a tour boat. Additional situations, such as the deployment of a Mars rover, a zero-G flight in NASA's Weightless Wonder, a walk on a conveyor belt and a cruising aircraft carrier, and juggling on the Earth and around the solar system, provide opportunities to study the mechanics of velocity and acceleration as well as contact forces and forces that act at a distance. Vector algebra is demonstrated throughout. A viewable/printable instructor's guide is available online. A Films for the Humanities & Sciences Production. A part of the series *Physics in Action*. (24 minutes)

**Length:** 25 minutes, **Copyright date:** ©2010

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**ENERGY****R2 000.00**

Talking about energy is tricky because everyday words can also have specialized scientific meanings. Through the process of defining key terms like “power,” “work,” and even “energy” itself, this program uses a roller coaster, a harmless train wreck, ice-skaters, a boulder, a human cannonball, night-vision goggles, and a supernova to introduce students to kinetic and potential energy, electrical energy, chemical energy, nuclear energy, and conduction, convection, and radiation of heat. A viewable/printable instructor’s guide is available online. A Films for the Humanities & Sciences Production. A part of the series *Physics in Action*. (33 minutes)

**Length:** 33 minutes, **Copyright date:** ©2010

**THE NATURE OF MATTER****R2 000.00**

An elephant and a racing car don’t have much in common—except for the remarkable fact that they’re made of similar fundamental building blocks. This program takes a simulated subatomic look at a glass of water to better understand the nature of matter, a minuscule world of molecules, atoms, and elementary particles. The behavior of matter under the effects of gravity, electromagnetism, and the strong and weak nuclear forces; the process of scientific experimentation; specifics of atomic structure; the organization of matter via the periodic table; ionic, covalent, and hydrogen bonding; the process of radioactive decay; and the death of fusion-fueled stars are scrutinized as well. A viewable/printable instructor’s guide is available online. A Films for the Humanities & Sciences Production. A part of the series *Physics in Action*. (32 minutes)

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