

# Ideas for Science and Technology K-6

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## BOOK REVIEW – Primary Physics

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*Publisher:* Sunshine Educational  
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*Primary Physics* is a series of 4 books developed from the concept that Physics can be taught to children from a young age and indeed should be taught to enable them to have a greater understanding of their world. Physics is part of our every day life and this series, through experimentation and discussion relevant to students at their appropriate developmental stage, provides teacher guidance in helping students interpret phenomena of the world in which they live.

**Book 1** uses simple experiments to explore **energy, mass and forces** in the order that a child first begins to experience the world. The hands-on activities are appropriate for Early Stage 1 and Stage 1 students involving the observation and exploration of energy, mass, space, volume, density and the forces of friction and gravity.

Teacher's notes on how to use the book along with the simple physics definitions and explanations support teachers in guiding young students to grasp the laws of physics. Extremely useful are the syllabus references to Science and Technology and Mathematics as well as an Outcomes section giving a brief idea of the theory behind the experiments and the results aimed for. A puzzle page and physics quiz, which can be used for assessment purposes, are also included.

**Book 2** addresses the topic of **simple machines** and is suitable for Stage 1 and Stage 2 students. This second book in the series builds upon student understandings of the effects of energy, mass and forces developed in Book 1. Experiments with simple machines demonstrate different ways of doing work and topics include wheels, pulleys, screws, ramps, wedges and levers.

As in Book 1, the Teacher's notes, the simple definitions and explanations and the Hints and Outcomes section assist teachers in clarifying their own understanding of physics to be better equipped in guiding their students. A project section at the end of the book gives students opportunity to apply the knowledge and understandings they have acquired about simple machines by undertaking an open-ended design and make task.

**Book 3** explores **more forces** and **more energy** and is appropriate for stage 2 and stage 3 students. The book is divided into 2 parts based on the questions 'How do forces affect what you do?' and 'How can you capture energy?' The topics of gravity, friction, energy forms (solar, water, wind, potential and kinetic) and energy conversion are

experienced through demonstration and experimentation. Each topic concludes with a relevant design and make task.

Background information (referred to as 'Outcomes' in the previous books) is provided in the Teachers' notes at the end of Book 3 as well as a handy list of required equipment.

**Book 4** is inspired by Sir Isaac Newton's work on the theory of gravitation. Stage 2 and Stage 3 students can undertake activities involving the study of **motion** based on Newton's Laws and develop their skills of scientific investigation through experimenting, following procedures, taking measurements, and analysing and drawing conclusions.

Book 4 is divided into 2 sections. Section 1 explores gravity and orbit, gravity and tides, and Newton's 1st, 2nd and 3rd laws of motion. Each topic concludes with a design and make task that requires the application of newly acquired concept knowledge and understandings. Section 2 covers the topic of amusement park physics. A review page provides a simple summary of the concepts and understandings of mass, energy, forces, simple machines and motion that have been addressed in the 4 book series. The final task, which involves amusement park physics, is a fun and practical way of having students demonstrate their understanding of the laws of physics.

An equipment list and simple explanation of Newton's laws of motion conclude Book 4.

### Commentary

The *Primary Physics* series is an excellent resource to support teachers guide the development of students in their understanding of physics. The study of physics is presented in a sequential and systematic way, engaging students in enjoyable hands-on activities that expand and build on what students already know about physics in their daily lives.

The worksheet pages are well set out with clear and attractive presentation and include information on Things you need, Words to use, and Extension ideas. The Teachers' notes, Hints and Outcomes pages, and the equipment lists are invaluable in providing background information to teachers and guaranteed to boost teacher confidence and competence in the teaching of physics.

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*If you would like to purchase these books or have any questions, please contact the author via [primaryphysics@gmail.com](mailto:primaryphysics@gmail.com) or [www.primaryphysics.com.au](http://www.primaryphysics.com.au)*