The Physics of Superheroes

By James Kakalios

Reviewed by David Featonby, UK

great impact on adolescents who still have to decide where to go. Teachers will profit directly from the chapters on communication skills, time management and mental strength, and they should pass on the information to their students. In addition, girls who are interested in studying science should be encouraged to read the biographical sections so that if they are ever subtly informed of their worker-bee status in the laboratory hierarchy, they become neither angry nor discouraged.

Details

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Superman, Batman, Lightning Lad, Spiderman – they all apply the principles of physics to perform their extraordinary feats... or do they? Which laws are suspended, and which are extended? Which are indeed forgotten completely? James Kakalios's view is that many fundamental principles of physics can be better understood by examining the activities of superheroes in comic strips, some famous and some not so well-known. As the foreword comments, "Comic book heroes are fun, inclined planes aren't". Thus for teachers, this book is a fantastic resource of examples which, at all levels, can enliven some of the more mundane areas of the physics syllabus.

With sections on mechanics, energy (heat and light) and modern physics, students can be challenged to question the activities of superheroes, touching on many aspects of physics. All the heroes I have heard of, and a few more besides, are mentioned, and a good index allows the reader to consult entries on different heroes as well as widely separate topics such as gravity and gamma rays, temperatures and tension. Kakalios does not limit himself to the fantasy world however, but attempts to relate each topic to the everyday real world of motor cars, microwaves and molecules, enhancing the reader's understanding.

As this is an American book, I found the use of pounds and feet, rather than consistent SI units, somewhat frustrating, but the need for us European teachers to "do the sums ourselves" may not be a bad thing. The book is illustrated with many examples from the comic strips themselves, though these would have been more helpful in colour. Maybe at some point in the future, the publishers would consider producing a series of colour slides for use in the classroom.

So if you have not yet read *The Physics of Superheroes*, I urge you to buy a copy and enjoy the debate on why Superman was the "man of steel" and became the most unrealistic superhero of all, how Spiderman's strands have their limitations, and whether he understood electromagnetism.

This is a book that every science teacher should read. It is the kind of book that can be taken on holiday, read over a long period or in short digestible chunks. Either way, I am sure that once read, some of its contents will be used over and over again.

Details

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