A SECOND REPORT ON TEXTBOOKS AT THE 8th TO 10th GRADE LEVEL

Reviews and the second report (preliminary draft) have been placed on the following site: http://www.science-house.org/middleschool/

Barry Feierman is a high school physics teacher and John Hubisz is a university physics teacher. Ever since JH's review of Middle School physical science texts, they have discussed the possibility of a follow-up review looking at what has happened since, with a particular look at texts suitable for Physics First type courses. From the outset we have disagreed about the nature and the level of such an introductory physics course. JH sees such a course beginning in the 6th grade and BF says the 9th grade. We have come round to an understanding that we would look at texts that could be used in some sense as a first course for students in grades 8 through 10.

Noting the problem of recruiting teachers for the expected larger number of students, we decided that we would look at some texts that would be introductory, but aimed at new teachers of, say, 9th grade students – perhaps biology majors who would like to try something different. (Note: JH found out 25 years later that his high school physics teacher was a biologist, who, recognizing that he would have to learn more physics to be a good biologist, went back to college to take more physics courses.) Then there would have to be something available to help "retrain" 12th grade physics teachers to make them aware of the nature of 9th grade students and have them see that such a course would not be an early physics course for college prep or a watered down 12th grade physics course. Any inexperienced teacher taking on such a course should read **Transforming Middle School Science Education** by Paul DeHart Hurd to gain an appreciation of what Middle School students are like. A review appears on the Website.

The ancient Greeks separated "Natural Philosophy" from "Philosophy" and that discipline became our "Physics". Note the capital "P". Physics, the study of material reality or the study of the Universe with our senses and our senses extended, gradually became subdivided into the sciences of biology, chemistry, geology, and physics, where now "physics" is the study of matter and motion and their transformations – the familiar space, time, and matter and the more mathematical course.

Now, physics is the simplest science. It is the science where the nature of science and the "scientific approach" can best be introduced to everyone. Questions of Nature can be subjected to test (the aim of the ancient Greeks). Measurement, data collection, experimental design, reporting of results, and so on, can be learned by Kindergartners. By the 6th and 7th grades the mathematics that has been and is being learned can slowly be introduced to the experimenting that is being done. Graphing of data, interpolation and extrapolation, and some theorizing and predicting can be tried. There is not too much of a distinction among the sciences, but it is evident that physics is much easier to manage.

Suggestions are made for a variety of textbooks suitable for a first course in physics. Physics First is a style of course where physics is taught in 9th-10th grade prior to full year courses in chemistry and biology and then followed by the more traditional physics. The kind of textbook most successful for this younger age group depends on the goals of the course, varying from a mostly conceptual text using only basic algebra to a more analytical style text relying on

traditional mathematical derivations and problem solving. It is very important for students, teachers, college admission personnel, and parents to realize that this course in is no way the traditional 12th grade physics course or a substitute for that course. Its aim is primarily to have students become familiar with the scientific approach. Textbooks to meet this wide range of interests are reviewed.

The report will not so much compare books competitively for a particular course, but how well the book meets its intended audience. For example, some classes may very clearly be ready for integrating simple mathematics into the study of physics, but others may not. Some classes may be "gung ho" for mostly building things, while others may not do as much building, preferring to carry out well-designed experiments.

We have seen four very different approaches to a "physics first" any one of which would be quite suitable for a particular 8th or 9th grade class. Some of our texts are on CDs. Some very good materials (e.g. InterActions in Physical Science) mix the approaches.

The Hewitt course is probably best described as a good transition course from the old mode of presenting physics to a newer form. When physics is wisely presented to adults for the first time the difference in presenting it to Middle Schoolers is not that great. The speed of presentation and the expectation of doing homework is probably the biggest expected difference. Retraining science teachers from disciplines other than physics might find this their best first approach. There are, of course, many resources connected with the text, the Website for one, that can serve as a continuing resource.

The Hsu approach emphasizes experimenting to such an extent that the materials for the course come with a classroom set of the texts. Not only are there many other resources available, but there are also workshops. A teacher, who likes building equipment, even though not formally trained in physics, could do an excellent job working his way into teaching physics on a regular basis. Workshops are available for teachers and prospective teachers.

The Eisenkraft approach appeals to teachers who like students to work on longer range questions that require more than just following a prescription. **Active Physics** takes a whole new approach. It includes thematic science units that the students can relate to: Communication; Home; Medicine; Predictions; Sports; Transportation and Light Up My Life. As with all of these texts, the National Science Education Standards are linked to the topics throughout. The units are worked through at length requiring students to thoroughly understand the way that scientists approach problems. Workshops are available for teachers and prospective teachers.

The Haber-Schaim approach (**Introductory Physical Science/Force, Motion, and Energy**) requires probably the best trained physical science teachers. The publishers will not sell the books to individuals without proof of expertise, usually through taking their required workshops. Home Schoolers find this tough. In many ways it meets the criteria that one would hope for in an excellent course. There is no folderall. Physical science is presented from beginning to end. The books are thin. Pictures and graphics are a necessary component of the textual material. The science is accurate.

Notice that we have assigned a name to each of the texts mentioned. Having a single author or perhaps two, fairly well guarantees a dominant theme in the presentation of the material. That has been the flaw in many of the more popular textbooks of the first report.

Most of the other books we considered suitable in some sense fall into similar categories.

Guidelines:

Accuracy: Regardless of the level of the textbook, accuracy is most important. Even here though, there has to be some latitude. We cannot expect to introduce the most recent, most exact picture of our understanding of the topic at hand. Qualifying answers and suggesting that answers with deeper insights are yet to come is important. In fact, wonder and the notion that we do not have all the answers and that there are still many problems left to be solved should be clearly shown.

Readability: The text must be a joy to read to encourage the students to go out and read more on their own. If graphs and photos are used, make certain that they connected to the text in an integral way. "Busy" texts are more of a distraction to these students, especially if there is no immediate connection to the textual material. Adults may find this "busyness" interesting, but they are already readers who have learned how to sort through the multiple means of communication. Forget readability formulas that are inappropriate for science texts anyway as the vocabulary of science almost always "looks" hard to these formulas.

These new high school students or upper level Middle Schoolers need an understanding of how to read critically and fluently, translating the meaning and purpose of text. When students reach middle and high school, the demands on their reading abilities undergo a significant shift – from primarily narrative texts to complex expository material. So how do we help them crack the nonfiction code? What can we do to stimulate their interest and improve their skills in reading at this crucial period? Compound and compound-complex sentences help stimulate the reader and they are more interesting than simple sentences that get to be boring fast. Our subject is ideal for doing this.

Age and Sex Appropriateness: There is physics all around us and we use physics principles daily. We want to take advantage of those that interest students and those that students are familiar with already to show physics' connection with their everyday lives.

Mathematics Requirements: A primary goal of Physics First is to get as many students as possible familiar with physics and how it is important and useful in their lives. For most students then, mathematics should be kept to a minimum and linked to their previous studies. We do recognize that there are exceptions where there might be different levels of such a course offering. All books then, should be reviewed with a recommendation on the suitability of the mathematics for the various possible curricula.

What we have looked at:

Active Physics: An Inquiry Approach to Physics – CoreSelect by Arthur Eisenkraft and published by It's About Time, Armonk, NY 10504 (2005) pp. xvi+798, hardback.

Active Physics: An Inquiry Approach to Physics – in six volumes: Communication, Home, Medicine, Predictions, Sports, and Transportation by Arthur Eisenkraft and published by It's About Time, Armonk, NY 10504 (1998) all individual paperbacks. **Home** is about 120 pages and the others are about 165-175 pages totaling about 1000 pages.

For these books we had a wide variety of reviewers in addition to the five that took on the **CoreSelect** version. Some taught earlier versions of the texts, some taught courses with a subset of the six paperback volumes, and some reviewed the books as potential adopters.

Accuracy: Highly Recommended. Described as very accurate by most reviewers.

Readability: Very enjoyable. The topics chosen for the units are those that already interest students. They just have not gotten to the critical reading stage that this program encourages. Reviewers uniformly gave high marks to whichever version of Active Physics they looked at.

Age and Sex Appropriateness: The texts and the research that went into them go to great effort to ensure the appropriateness of the material for the intended students.

Mathematics Requirements: Simple Algebra.

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Conceptual Physics: A High School Physics Program by Hewitt and published by Addison-Wesley.

Conceptual Physical Science: Explorations by Hewitt, Suchocki, and Hewitt and published by Pearson Addison-Wesley.

Accuracy: Highly Recommended. Described as very accurate by most reviewers. By far we had many more reviewers for Hewitt texts than any other. All were very positive. While we had only five "official" reviewers, many readers of our requests for reviewers for this project sent in their own reviews after we let them know that we had enough reviewers for the various texts. Some even recommended the college version and the college physical science. New teachers will find either text easy to use and will appreciate the huge amount of auxiliary aids available.

Readability: Many positive comments on the "friendliness" of the writing and presentation.

Age and Sex Appropriateness: The author does his own drawings and selects his own photographs and is sensitive to this issue.

Mathematics Requirements: Simple algebra as needed.

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Physics: A First Course by Hsu and published by CPO Science including Investigations. "Free equipment" comes with a classroom order of the book.

Foundations of Physical Science by Hsu published by CPO Science including Investigations. "Free equipment".

There is a tremendous amount of material for the teacher: videos, teacher guides, higher level course texts, and an investigation manual.

Accuracy: Highly Recommended. Described as accurate by most reviewers, but there are many suggested corrections and changes that have been written into the full review.

Readability: The book is excellent for the intended audience of 9th graders. The chapters are reasonably short, have large enough print, single column with excellent support materials in the form of illustrations and pictures.

Age and Sex Appropriateness: Not an issue.

Mathematics Requirements: Algebra.

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Interactions in Physical Science by Goldberg et. al. and published by It's About Time.

Accuracy: Highly Recommended. The text has been very carefully written and is highly accurate.

Readability: The readability is appropriate for a very young audience. It is in an informal language, using the second person "you" to discuss calculations and concepts. This allows the student to personalize the material as they are reading. The pictures are generally diagrams, graphs, and vector drawings to help the student visualize the problems presented in the reading.

Age and Sex Appropriateness: As most inquiry-based programs, this one also encourages and requires exploration of familiar objects and events (such as pool or skateboards) and encourages discussion and communication. The sample calculations also include references to different sexes doing different things eliminating any stereotypes. This text was designed for middle school students so the reading level is quite appropriate for the 6th through 9th grade. Of all the books under consideration, this one would probably be the best for the really unprepared teacher.

Mathematics Requirements: This program is strictly **conceptual**. There is really no mathematics involved in the program at all. The hardest thing we saw in terms of analysis or calculations was averaging numbers after repeated trials in an experiment.

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Introductory Physical Science + **Force, Motion, and Energy** by Haber-Schaim, et. al. and published by Science Curriculum Inc.

Accuracy: Highly Recommended. Described as very accurate by most reviewers. The Haber-Schaim approach requires probably the best trained physical science teachers. The publishers will not sell the books to individuals without proof of expertise, usually through taking their required workshops. Home Schoolers find this tough. In many ways it meets the criteria that one would hope for in an excellent course. There is no folderall. Physical science is presented from beginning to end. The science is very accurately presented. There are teacher's guides and a newsletter with helpful materials.

Readability: The books are thin. Pictures and graphics are a necessary component of the textual material. Students will improve their reading and writing with these books.

Age and Sex Appropriateness: No problem in this area; the text is almost neutral because the books stick with the subject, have been tested with this age group, and have no need to be politically correct.

Mathematics Requirements: The mathematics utilized is simple, introduced slowly, connected with previous experience, and linked to other representations.

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Powerful Ideas in Physical Science from the AAPT.

There are six volumes: *Light and Color*, *Electricity*, *Heat and Conservation of Energy*, *Nature of Matter*, *Force*, and *Motion* (last two available on CD only). The **Powerful Ideas** course model is intended for faculty who teach college students who are pre-service elementary school science teachers. The course content focuses on those physical science concepts that are initially introduced in elementary science curricula such that the teacher can immediately use his course content in the elementary classroom. A site license is purchased that allows duplication of materials and with the textual material on CDs there is the possibility of modifying content to meet local needs.

There is a listserv for teachers using the books.

Accuracy: Highly Recommended. Described as very accurate by most reviewers. One of us (JLH) has followed the development of this program from inception: talks of 30 and 60 minutes, and workshops of a half-day, full-day, and two-days long. The program went through many phases with input from a wide range of teachers and students, being improved at every step, so that it has to be described as very accurate.

Readability: Very readable, and with the possibility of editing the material for a slower class, this makes the material all the more valuable.

Age and Sex Appropriateness: First-time physics students, whether elementary or college school level, find the same sort of difficulties. Here, the learning comes from doing and so is appropriate at any age level.

Mathematics Requirements: Very little mathematics is required, certainly nothing above the Middle School level.

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Prisms Plus by Roy Unruh, et. al. and published by Centre Pointe Learning. **Prisms *Plus* Testbank 2.5.0.** http://www.cplearning.com/ppevotop.htm. Also see http://www.uni.edu/prisms/PRISMSPLUSfeaturesedited_s02.pdf for a detailed description of the material and the philosophy.

Accuracy: All reviewers agreed that the material was carefully written and very accurate. Language was used carefully and the diagrams and figures correlated well with the text.

Readability: Strongly Recommended. Described as very accurate by most reviewers. Since this is an activity-based course, the bulk of the student editions were lab activity guides. These were clearly written and fairly easy to understand. The Concept Enhancer reading included with each learning cycle, although accurate and not too long, was dense and written at a fairly high level. It assumes certain knowledge (for example, in the first activity of unit 1, it assumes that students know that the slope of a position time graph is speed, and it mentions vector quantities even though vectors are not the topic of a learning cycle till the fourth activity in this unit). In practice, students do very little reading of their physics textbook, but we would not eliminate this series from consideration on this basis.

Age and Sex Appropriateness: This would be a good sex neutral choice for high school freshmen with lots of accessible fun interesting activities.

Mathematics Requirements: This course utilizes algebraic reasoning and representations and often relies on graphical interpretation. It is well within reach of students who are concurrently enrolled in a regular 9th grade Algebra course if the teacher is willing to help them get up to speed with graphical analysis in the beginning of the course. The bulk of the course could be used with students of lower mathematical ability, but the Concept Enhancer readings would probably be of little value to these students, and only some of the Conceptual Practice questions would be of use.

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The Story of Science in three volumes (**Aristotle Leads the Way**, **Newton at the Center**, and **Einstein Adds a New Dimension**) by Joy Hakim and published by Smithsonian Books.

Accuracy: Recommended as supplementary reading for any course. Good to excellent. These books, however, are not textbooks. They are more stimuli to getting students interested in science. The author is an excellent storyteller.

Readability: Middle School students have no trouble with it. We often hear that students will not read, but the success of the Harry Potter books suggest otherwise.

Age and Sex Appropriateness: Middle School students to adults, males and females, find them fascinating.

Mathematics Requirements: None.

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What's the Matter?: Readings in Physics published by the Great Books Foundation.

Accuracy: Recommended as supplementary reading for all courses. Highly accurate; this is a collection of writings by famous physicists. See the review in The Physics Teacher in November 2007 by JLH. This is not a textbook, but will serve well as a supplement to any science course. The essay on "Shared Inquiry" is an additional plus for new or change-over teachers.

Readability: The selections have been hand-picked to be readily available to the non-scientist.

Age and Sex Appropriateness: Not an issue.

Mathematics Requirements: Not crucial to understanding the selections.

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Conceptual Physics, **Principles of Physics**, **Experiment**, & **Virtual Physics Labs** from Kinetic Books. CDs.

Accuracy: Very good. Some of our reviewers had difficulty getting the CD loaded often hanging up at the 99^{+}% mark trying to close browsers. Some gave up so we do not have as many reviews as we would have liked for this new direction for textbooks. Those that found their way through were very positive about the media enhancements. The material was much better than **Physics 1 & 2 Speedstudy** and Physics **Experiments – Kid Science**, which were more like quick review efforts similar to Arco's, Schaum's, Barron's, etc. except on a CD.

Readability: There is an obvious age gap as to how one would like to get one's information. In this case the younger reviewers were much more satisfied with getting information off the screen and that is reflected in their positive response to the "books." Home Schoolers should find this to be excellent for their needs, especially where they do not have a physics teacher available as their children can easily follow this program at their own pace. Even JLH had to admit that the reading level was appropriate.

Age and Sex Appropriateness: Not an issue.

Mathematics Requirements: Simple algebra.

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Constructing Physics Understanding assembled by Jodi McCullough & Roy McCullough and Fred Goldberg, Michael McKean and the CPU Development Staff and published by The Learning Team. http://cpuproject.sdsu.edu/ **Simulation Software for Exploring Physics** CD with **Workbook**.

Accuracy: Recommended as an auxiliary aid to any course. This is not a textbook; it is a supplemental source of material that could be used with any textbook. It was not explicitly reviewed for this project, but those who tried out a few of the simulations found them helpful. The **Prisms Plus** materials mentioned CPU explicitly.

Readability: The **Workbook** calls for some reading, but it is a mixture of preparatory text with step-by-step instructions for carrying out the simulations. Nothing appeared to be at too high a level.

Age and Sex Appropriateness: Not an issue.

Mathematics Requirements: Not an issue.

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Comprehensive Conceptual Curriculum for Physics (C^3P) CD
http://phys.udallas.edu/

Unfortunately, I (JLH) was the only one with the CD and I liked it. It is a high school level program that could be handled by any high school student. Following the URL leads to a blinking screen that is a nuisance to try and get an overview from, but what is underneath is worth pursuing.

We will probably come back to this review at a later date.

Accuracy:

Readability:

Age and Sex Appropriateness:

Mathematics Requirements:

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Physics That Works published by TERC
http://www.kendallhunt.com/index.cfm?PID=219&PGI=224

Accuracy: Strongly recommended with qualifications. Described as very accurate by most reviewers. Too much for a first course at the level that we are looking at, but a strong reliable text for high school. This is a one-year, project-based curriculum that highlights what one might expect in a scientific or technological job. The course encourages students to learn and apply fundamental laws of physics to engineering and technological problems.

Readability: The reading level should not be a problem, but there is a lot of preparatory reading required and writing is called for.

Age and Sex Appropriateness: Not an issue.

Mathematics Requirements: Simple Algebra.

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Minds on Physics: Activities & Reader Interactions by William J. Leonard, Robert J. Dufresne, William J. Gerace, and Jose P. Mestre and published by Kendall/Hunt Publishing Company http://umperg.physics.umass.edu/resources/mop/whatIsMOP/

Accuracy: Strongly recommended with qualifications. Very accurate. A teacher would benefit greatly from the work of this project and find it very helpful in preparing a Physics First course, but it would be too much for a first course in the 9th grade. The URL should be followed to get an idea of the philosophy behind the program.

Readability: Concise and to the point. Lots of questioning to keep the student engaged.

Age and Sex Appropriateness: Not an issue.

Mathematics Requirements: Progressively more involved Algebra, but not excessively so.

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Science Essentials (Elementary Level, Middle School Level, and High School Level) by Mark J. Handwerker and published by Jossey-Bass.

Accuracy: Needs lots of work that might well be worth it because the fundamental idea that these books (and we are looking mainly at the **Middle School Level**) are lessons and activities for the teacher to prepare tests is a good one. A teacher who knows his subject (physical science, chemistry, astronomy, and biology are covered) will get a lot of good ideas, but he will have to be careful with the principles and the interpretations.

Readability: Should not be a problem for a teacher, but he will have to be cautious about copying anything without proofing it.

Age and Sex Appropriateness: Not an issue.

Mathematics Requirements: There are none.

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Science (I, II, III, & IV): Essential Interactions by Ted Gibb, Alan J. Hirsch, Bob Ritter, Deborah White, Steven White, and Jim Wiese and published by Centre Pointe Learning (A series integrating all the sciences in each volume at a progressively higher level. We are only interested in the physical science at the introductory level.)

Accuracy: Recommended. Distinguishing "heat" the noun and the verb is a problem. Overall, this series of texts should be a serious competitor for the texts that we found "wanting" in the first report, if you are looking for such a program. The Skills Handbook from the first volume is an excellent introduction to the scientific approach. Philosophically, we know that scientists do not go into the laboratory and start out on a series of steps to achieve their goal, but they are good ideas to think about for young investigators.

Readability: Very busy text with lots of attractive color diagrams and photographs, most of which are meaningful to the topic. Normally, we would be put off by such a large committee of writers, but given the multiple sciences and grades covered in the series, the physical science sections seem not to suffer. There is lots of encouragement to follow up with out-of-the-box questioning.

Age and Sex Appropriateness: Handled very well.

Mathematics Requirements: Very little required. Progressively more as the texts move to higher grades.

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Spotlight Science 7 published by Nelson Thornes (Framework edition; one of a series of at least four)

Accuracy: Recommended. Oftentimes statements are made without any follow-up, therefore requiring a knowledgeable teacher. This can be a strong plus! Definitely a hands-on text rather than a theoretical book and one that would attract students.

Readability: Most of the text is written in short sentences. There are, however, many different examples of reading that the student has to deal with: instructions for carrying out experiments or demonstrations, questions to be answered in essay format, interpreting pictures, a little history, attempts at clearing up the language used compared to everyday use, good encouragement to get involved in discussions and defend a side of a debate, etc.

Age and Sex Appropriateness: About right on both counts and there are many color pictures depicting activities that students would feel comfortable with.

Mathematics Requirements: Minimal; there are graphs of a variety of types that are clearly presented.

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Select Physical Science by Alan Cromer, Lisa Duvall, Cynthia D. Martinez-Bagwill, and Haydn A. "Chip" Fox and published by RonJon Publishing, Inc. Denton, TX

Accuracy: Recommended. An activity-based book that would be suitable for any introductory course starting in Middle School. Very simple and inexpensive materials used.

Readability: Good. Very little extraneous material as most of the textual material leads directly to what to do next.

Age and Sex Appropriateness: Not an issue.

Mathematics Requirements: Very simple. The use of tables and graphs comes out of the activities.

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Middle School Physics: A Science Teacher's Sourcebook of Hands-on Activities by Gordon R. Gore

Accuracy: Suitable with qualifications. On the whole the sourcebook (not a textbook) avoids most common errors. He, however, uses "voltage in a circuit" rather than "across" an element or part of a circuit. It is a teacher's resource, though.

Readability: Not an issue.

Age and Sex Appropriateness: Not an issue.

Mathematics Requirements: None.

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Understanding Physics by Cassidy, Holton, and Rutherford and published by Springer including the Student Guide (This is a revised **Project Physics**, but now mainly for teachers or a first course in college.)

Accuracy: Highly recommended for teachers. Described as very accurate by most reviewers. It should be noted though that this excellent text's audience has been raised with this revision. It

is still a great text, but more for a college audience, especially useful for pre-service teachers and Middle School and High School teachers as a resource.

Readability: Very good. Students should be strongly encouraged to read this text thoroughly and completely. It contains a goldmine of information and is an excellent introduction to physics.

Age and Sex Appropriateness: Not an issue.

Mathematics Requirements: Simple Algebra.

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Physics Matters by Trefil and Hazen and published by John Wiley (May be a bit much, mainly for teachers at the Physics First level and a first introduction at the college level.)

Accuracy: Recommended for teachers. One reviewer was very disappointed that "so many" errors remain, but most thought that it was still a valuable book for a college pre-service prep course and resource for any teacher.

Readability: Good with lots of interesting material to stimulate the reader.

Age and Sex Appropriateness: Not an issue.

Mathematics Requirements: Simple Algebra.

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PhysicAL: An Inquiry Approach to Physics by Brian Martin and Cornelis Spronk and published by J. M. LeBel.

Accuracy: Highly Recommended. Described as very accurate by most reviewers. Very good. This book was available for the first review, but had too few sales to be included, yet those reviewers liked it. It continues to get high marks.

Readability: Quite readable. Some positive comments even came from home schoolers not used as reviewers.

Age and Sex Appropriateness: Not an issue.

Mathematics Requirements: Algebra I.

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Partial List of Reviewers: Kaitlyn (Katie) Barry, Craig Buszka, Sharyn Chase, Elizabeth B. Chesick, Robert (Bob) Dean, Richard Di Dio, Oliver Dreon, Jr., Maureen Fallon, Barry Feierman, Jeff Goldader, John L. Hubisz, Sandy Knotts, Paul Lulai, Robin McGlohn, Miki

Merritt, Jean Oostens, Willa Ramsay, Stephanie Rico, John Roeder, Colleen Megowan Romanowicz, Rob Schann, Don Scholl, Larry Weathers, J. R. Wilt, Rose Young

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We also include some mathematics supplements for consideration for those who want to add some mathematics to the conceptually-based course.

Introductory Physics: A Problem-Solving Approach by Jesse David Wall and Elender Wall and published by Analog Press.

This book was originally designed as a follow-up course to Paul Hewitt's course at the City College of San Francisco. It is now in its second edition and produced independently as an introductory physics text.
Problem-Solving Exercises in Physics by Jennifer Bond Hickman and published by Addison-Wesley.

This book could be used with any textbook as a supplement to a conceptual physics course where the teacher might like a bit more.

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The Executive Board of the American Association of Physics Teachers (AAPT) recognizes that teaching physics to students early in their high school education is an important and useful way to bring physics to a significantly larger number of students than has been customary. This approach — which we call "Physics First" — has the potential to advance more substantially the AAPT's goal of Physics for All, as well as to lay the foundation for more advanced high school courses in chemistry, biology or physics. The complete policy statement adopted by the AAPT Executive Board can be found at http://www.aapt.org/Policy/physicsfirst.cfm