Bibliographic Data

Title: 101 Things Everyone Should Know About Math

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Copyright Year: 2010

Grade Levels: 5-9

Format Type: Book;

Descriptors: Topic Area: Mathematical Structures;

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ISBN: 9780967802039

Price per copy: $9.95

Review

101 Things Everyone Should Know About Math

Reviewed By: Henry Neale

Reviewed Date: 7/30/2010

I. Description of Materials
The 208-page book makes connections to popular culture, sports, travel, food, hobbies, and other real-life areas in order to provide authentic and interesting applications for mathematics students. The question-and-answer format provides explanations in simple and understandable language. This material would be a valuable resource for teachers, parents, and students.

II. Purpose and Audience
To help students become better problem solvers, this book is designed to be a fun, light read that provides an understanding of how people use mathematics. Algebra and geometry concepts are presented in real-world contexts. The format will assist students in recognizing the math concepts and their common patterns, to provide them with a basis to solve problems they encounter. The questions presented can be solved in a short period of time, making the applications ideal for short class activities.

III. Content and Quality
The material supports number sense, geometry, and algebra concepts in upper elementary and middle school settings. The illustrations are simple but effective in supporting the situations presented in the problems. The topics are developed in individual sections include Facts, Just Math Facts; Health, Food, and Nutrition; Travel; Recreation and Sports; Economics; Nature, Music, and Art; Miscellaneous; and Bonus Questions. The book also includes a listing of mathematics resources, references, a glossary, and an index.

The authors include an engineer, a mathematician, and an educator. The companion book 101 Things Everyone Should Know about Science has received many endorsements including NSTA Recommends, Science Magazine, the Carnegie Academy for Science Education, and WonderQuest. Although the authors do not present evidence of the effectiveness of these materials, the problems and descriptions of their solutions provide solid connections between mathematics and the real world.

IV. Reviewers' Ideas for Using this Material
This book is not designed as professional development material. Yet, the material could be used effectively in professional development where problem solving and connections to the real world are the focus. The problems could also be used to supplement mathematics curricula, providing interesting and short questions to engage students. The book might also be of interest to parents who want to extend their child’s understanding of mathematics as well as students who enjoy exploring mathematics.

V. Comments and Cautions
The book contains problems that support problem solving. Although the descriptions of the answers provide necessary background, the book does not contain the support materials to make it an effective and complete professional development resource. For that purpose, a leader would have to supplement the content. Yet, this material contains interesting and engaging problems that could be used in various settings with in-service and pre-service mathematics teachers as a supplement.
Everyone needs to know that mathematics is not what you think mathematics is. When you learn mathematics in middle school and high school, you are just learning some concepts that mathematicians have come up with, and may be useful in real life with practical applications. You are not learning math - you are learning how to take a real life problem and use theorems and topics in math to come up with an answer to your real life problem. This is how math is tested in middle and high school - by recalling memorized material. That is giving people the wrong idea about math. So, what is real math? Real math is being able to think about problems in different ways. It is about creativity and analytical thought, not just the latter. Let's come back to our example.