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L. Viennot

**Thinking in Physics**

The pleasure of reasoning and understanding

- ▶ Offers practical examples of appropriate teaching practices
- ▶ Emphasizes the value of the process of reasoning
- ▶ Exposes many of the distorted or false interpretations common in much current physics teaching
- ▶ Includes a Foreword by Guy Aubert, former CNRS Director General
- ▶ Enriched with illustrations, a comprehensive bibliography and online supplementary materials

Read this book if you want to know how to give students the intellectual pleasure of understanding physics. Read it even if you fear that this goal is out of reach – you may be surprised! Laurence Viennot shows ways to deal with the awkward fact that common sense thinking is often not the same as scientific thinking. She exposes frequent and widespread errors and misunderstandings, which provide a real eye-opener for the teacher. More than that, she shows ways to avoid and overcome them. The book argues against over-emphasis on “fun” applications, demonstrating that students also enjoy and value clear thinking.

The book has three parts:

- Making sense of special scientific ways of reasoning (words, images, functions)
- Making connections between very different topics, each illuminating the other
- Simplifying, looking for consistency, and avoiding incoherent over-simplification

It offers a magnificent supply of insight and ideas, all of which can be put to use no matter what physics programme you teach. The examples provided in this book shed light on the processes of teaching and popularization of physics, from the high school to the early undergraduate level.

"I recommend this book to all my colleagues engaged in teaching physics and other scientific disciplines, but also to students, future teachers and all those who take pleasure in understanding"

Guy Aubert

Emeritus Professor, Université Joseph Fourier, grenoble, France



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