

‘Dr. Kiyonobu ITAKURA has inspired researchers and teachers around the world to reconceptualize the use of experimentation in classrooms and instruction. Observing what is known as the Itakura method in action in a Japanese classroom, I saw how it places students at the forefront of the lesson, empowering them to explain their ideas to each other, argue—sometimes vehemently—and reach new insights. May we all honor Dr. Itakura by continuing to refine and extend this method.’

— *Marcia C. Linn, PhD, Professor, Graduate School of Education,  
University of California at Berkeley*

‘The book would be a useful addition to the science teacher’s bookshelf. It provides suggestions for a series of well-researched ‘hands on, minds on’ practical activities. The Hypothesis–Experiment Class described is similar in some aspects to the ‘predict-observe-explain’ approach (White & Gunstone, 1992). There is also a useful description of the research carried out in the development of the activities, together with detailed suggestions of how teachers might carry out the activities.’

— *Mary Whitehouse, Chair, The Association for Science Education*

‘Kiyonobu Itakura’s first scientific paper, written in 1953 as a graduate student, was exciting to read. He emphasized that geocentric theory persisted for centuries not just because of social reasons but because it was supported by most astronomers. He taught me the vital importance of learning that “truth is not determined by the majority”. This lesson is still pertinent for scientists today as dogmatism continues to play a role in confounding scientific judgement. I hope that HEC will also inspire students to think for themselves.’

— *Toshimitsu Yamazaki, Dr. of Science, Professor Emeritus,  
University of Tokyo, Member of the Japan Academy*

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# HYPOTHESIS- EXPERIMENT CLASS (*Kasetsu*)

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NOW

With Practical Materials  
for Fun and Innovative Science Classes



**Kiyonobu ITAKURA**

Edited by

**Haruhiko FUNAHASHI**

and

*The Science and Method*

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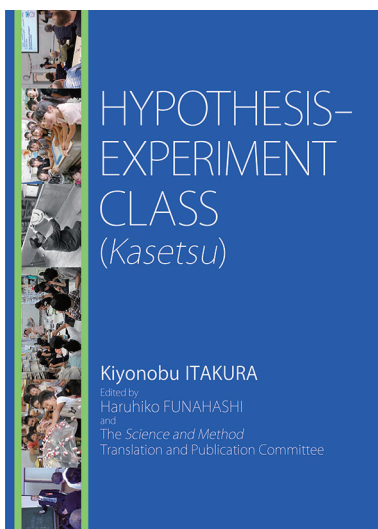


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Hypothesis-Experiment Class (HEC) or "Kasetsu", enables pupils to engage with science concepts using unique teaching materials called "Jugyosho", the HEC Classbook. HEC and its Classbook were proposed by Dr. Itakura in 1963 based on his theory that recognition of *physical phenomena or scientific truth is established only through experiment*.

Attractive Classbooks in various fields have been developed and utilized at all levels from primary education to university liberal arts courses. Almost all pupils and students exposed to HEC find the classes fun, regardless of when, where, and by whom it is carried out.

"HYPOTHESIS-EXPERIMENT CLASS (*Kasetsu*)"  
 ISBN 978-4-8140-0210-8 (Japan)  
 ISBN 978-1-925608-87-8 (International)  
 size 151x218 mm | hardcover | 278pages



### Sample page

*Objects and their Weight (17)* 115

**Part Two: An object's change and weight**

**Problem 1**

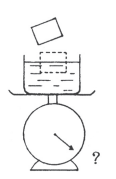
Here we have a scrap piece of wood. When the piece of wood was placed on a scale, it weighed \_\_\_ g.

Next, when a bowl of water was placed on a platform scale, the scale's needle indicated \_\_\_ g.

If we leave the bowl of water on the scale and then float the piece of wood in the water, how will the indicated weight change?

**Expectation**

- It will increase by the same amount as the piece of wood's weight.
- It will remain unchanged.
- It will increase by half of the piece of wood's weight.
- It will weigh less than before.
- Other ideas.



**Discussion**

Why do you think this will happen? Discuss your ideas.

**Results**

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