



Teaching –learning module compiled by the PARSEL consortium
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 Popularity and Relevance of Science Education for scientific Literacy



Am I being Cheated in the Market Place ?

A grade 7-9 science (physics) module on
 the Principle of Moments.



Abstract:

Balances are commonplace in markets. They are used to weigh fruit and vegetables from as little as 100 g to more than 5 kilos. Many types exist, some using weights and others where there is a pointer moving across a scale. Sometimes the balance is the extension of a spring. Is their accuracy acceptable? Are they being used accurately by the sellers?

Sections included		
1.	Student activities (for students)	Describes the scenario in more detail and the tasks the students should perform
2.	Teaching guide	Suggests a teaching approach
3.	Assessment	Gives suggested formative assessment strategies
4.	Teacher notes	Gives student handouts on making a balance and determining the principle of moments

Developer: Kamal Mahendroo Edited by: Jack Holbrook, Amitabha Mukherjee and Vijaya S. Varma
 Institution: International Council of Associations for Science Education (ICASE)
 Country: India



Overall Objectives/Competencies: The students are expected to:

- Reach a decision, based on sound arguments, whether the accuracy of balances is a problem for society.
- Construct a 2 pan balance with a set of weights and a 1 pan balance, using locally available materials and tools.
- Use a 2 pan, 1 pan and spring balance to determine the accuracy by which materials can be measured using a balance.
- Co-operate as a member of a group in carry out the experiments and in making a decision during the discussion session.
- Communicate orally and in writing in developing a report related of the experiments and the accuracy of the balances.
- Understand the working of the commonly used balance or scales.
- Understand the difference between mass and weight; and which balances can be used for their measurement
- Derive empirically the principle of moments.

Curriculum content: Derivation of, and calculations using, the Principle of moments

Kind of activity: Devise experimental procedures, using a balance to derive the principle of moments, discussion to make a justified decision on whether people are being cheated in the marketplace

Anticipated time: 4 lessons

This unique teaching-learning material is intended to guide the teacher towards promoting students' scientific literacy by recognising learning in 4 domains – intellectual development, the process and nature of science, personal development and social development.

Its uniqueness extends to an approach to science lessons which is designed to be popular and relevant. For this the approach is intentionally from society to science and attempts to specifically meet student learning needs.

This uniqueness is specifically exhibited by:

1. a society related and issue-based title (supported in the student guide by a scenario);
2. student-centred emphasis on scientific problem solving, encompassing the learning of a range of educational and scientific goals;
3. including socio-scientific decision making to relate the science acquired to societal needs for responsible citizenship.

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