



# Am I being Cheated in the Market Place ?



## Assessment

This guide to assessment strategies is put forward from different perspectives. In part A the assessment is based on the skill to be developed in the student. Part B is based on the assessment strategies to use in each lesson, whereas part C illustrates the assessment by the 3 different approaches which a teacher may use for formative assessment – observation, by oral communication, or by marking of written work. Summative assessment strategies are not shown, but these could relate to viva type oral communication and/or to the marking of written tests/examination questions.

### Award of social value grade (objective1)

Teachers listens to the debate

- x Not able to take part meaningfully in the discussion and suggest a decision on whether cheating is a problem in the marketplace.
- √ Takes part in the discussion but is not able to justify any meaningful decision regarding whether cheating is a problem.
- √√ Is able to justify, with sound arguments, whether the accuracy of balances is a problem for society.

### Award scientific method grade (objective 2)

Teacher observes the students and notes the observations recorded

- x Carries out the experiments, but the readings are not sufficiently accurate.
- √ Able to construct a set of weights and able to carry out the experiment, making meaningful and accurate observations.
- √√ Able to construct a set of weights and use them in an experiment. Able to make a suitable 2-pan balance held by hand using a piece of string and can create an appropriate 1 pan balance and be able to use it with acceptable accuracy.

### Award of a personal skill grade (objectives 3 and 4)

Teacher observes the students during groupwork and notes the conclusion written in the notebook

- x Not cooperative with members of the group and not able to discuss meaningfully in the group.  
Any conclusions written are copied



- √ Able to participate as a member of the group, take part in the discussion and write a conclusion in their notebook
- √√ Able to take a leadership role for the group and encourage others to take part in the discussions. The conclusions in the notebook are well written and accurate

## Award a science concept acquisition grade (objectives 5 and 6)

Teacher gives a mark from the written work produced by students for analysing their results and in drawing their conclusion

- x Not able to analyse the experimental results and appreciate the difference between mass and weight.
- √ Able to analyse the results and give a simple conclusion, but shows confusion over the difference between mass and weight.
- √√ Carefully analyses the results and draw a conclusion taking into consideration the limitations of the experiment and the accuracy involved Interpret data collected to derive the principal of moments. Able to explain that mass is measured in grams and weight in Newtons and show an appreciation that weight and mass are two different entities.

## Part B Assessment by Lesson

### Lesson 1

	Dimension	Criteria for evaluation The student:	Mark/grade given (x,√,√√)
1	Questions to individuals in a Whole Class setting	Answers questions at an appropriate cognitive level	
		Shows interest and a willingness to answer	
		Willing and able to challenge/support answers by others, as appropriate.	
2	Performing the experiment	Makes a suitable 2-pan balance held by hand using a piece of string	
		Performs experiments using the balance	
		Undertakes measurement in a safe and appropriate manner.	
		Cooperates with group colleagues	

## Lesson 2

	Dimension	Criteria for evaluation The student:	Mark/grade given (x,√,√√)
1	Create instruments	Creates an appropriate 1 pan balance and determines how it is to be used.	
		Develops an appropriate procedure to use the 1 pan balance to determine readings in various situations	
2	Record experimental data collected	Record weights of various substances and compare with values obtained by others	
3	Interpret the theoretical idea behind the 1 pan balance.	Interpret data collected to derive the principal of moments.	

## Lesson 3

	Dimension	Criteria for evaluation The student:	Mark/grade given (x,√,√√)
1	Questions to individuals in a Whole Class setting.	Able to show an appreciation that weight and mass are two different entities.	
		Shows interest and a willingness to answer.	
		Willing and able to challenge/support answers by others, as appropriate.	
2	Questions to the group.	Able to recognise that the principle of moments is based on massing.	
		Explain why a spring balance determines weight.	
		Willing to support other members in the group in giving answers when required.	
3	Compare readings from a 1 pan balance and a spring balance.	Able to compare readings in a group between a 1 pan balance and a spring balance.	
		Able to explain why the readings on the 1 pan balance and the spring balance are the same if the units of the spring balance are in grams.wt, but differ if in Newtons.	

## Lesson 4

	Dimension	Criteria for evaluation The student:	Mark/grade given (x,√,√√)
1	Answers questions	Able to explain that mass is measured in grams	
		Able to explain that weight is measured in Newtons (or grams.wt)	
2	Scientific or socio-scientific reasoning	Illustrates creative thinking/procedures in solving problems	
		Gives a justified socio-scientific decision as to whether the accuracy of balances is a problem for society.	

## Part C Assessment based on Teacher Strategy

### Assessment Tool based on the Teacher's Marking of Written Material

	Dimension	Criteria for evaluation The student:	Mark/grade given (x,√,√√)
1	Record experimental data collected	Record weights of various substances and compare with values obtained by others	
2	Interpret or calculate from data collected and making conclusions	Interpret data collected to derive the principal of moments.	
		Draws appropriate conclusions.	
3	Scientific or socio-scientific reasoning	Illustrates creative thinking/procedures in solving problems	
		Gives a justified socio-scientific decision as to whether the accuracy of balances is a problem for society.	

## Assessment Tool based on the Teacher's Oral Questioning

	Dimension	Criteria for evaluation The student:	Mark/grade given (x,√,√√)
1	Questions to individuals in a Whole Class setting	Able to explain that mass is measured in grams	
		Able to explain that weight is measured in Newtons (or grams.wt)	
		Able to show an appreciation that weight and mass are two different entities.	
		Willing and able to challenge/support answers by others, as appropriate	
2	Questions to the group	Able to recognise that the principle of moments is based on massing.	
		Explain why a spring balance determines weight.	
		Willing to support other members in the group in giving answers when required.	
3	Compare readings from a 1 pan balance and a spring balance.	Able to compare readings in a group between a 1 pan balance and a spring balance.	
		Able to explain why the readings on the 1 pan balance and the spring balance are the same if the units of the spring balance are in grams.wt, but differ if in Newtons.	

## Assessment Tool based on the Teacher's Observations

	Dimension	Criteria for evaluation The student:	Mark/grade given (x,√,√√)
1	Functioning in the group during experimentation or discussion	Contributes to the group discussion during the inquiry phases (raising questions, planning investigation/experiment, putting forward hypotheses/predictions, analyzing data, drawing conclusions, making justified decisions).	

		Cooperates with others in a group and fully participates in the work of the group.	
		Illustrates leadership skills – guiding the group by thinking creatively and helping those needing assistance (cognitive or psychomotor); summarising outcomes.	
		Shows tolerance with, and gives encouragement to, the group members.	
2	Create instruments	Creates an appropriate 1 pan balance and determines how it is to be used.	
		Develops an appropriate procedure to use the 1 pan balance to determine readings in various situations	
		Uses lab tools and the measurement equipment in a safe and appropriate manner.	
		Behaves in a safe manner with respect to him/herself and to others.	
		Maintains an orderly and clean work table.	
3	Performs an experiment	Makes a suitable 2-pan balance held by hand using a piece of string	
		Performs experiments using the balance	
		Undertakes measurement in a safe and appropriate manner.	
		Cooperates with group colleagues	