

Introduction

A *moment to learn* is a set of teacher and pupil activities to develop understanding of moments and their applications. The activities include:

- **The Italian job** [mental starter]
- **A big moment** [extra activity]
- **Just a moment** [activity]
- **The last moment** [plenary]

This set of activities also includes an answer sheet for *Just a moment* called *Just a moment answers* and a help sheet to show people how to make worksheets with drop-down lists, *Using drop-down lists in MS Word*.

Running the activities

The teacher starts the lesson by using the mental starter *The Italian job*.

- **The Italian Job** - This is a PowerPoint presentation that introduces the concept of the forces needed to balance an object and promotes thinking and discussion in the class. The teacher should not try to force the discussion but use the ideas put forward by the pupils as predictions that they can test during the lesson. The presentation will play by itself but the teacher can stop it when they need to by pressing the escape button.
- **Just a moment** – This is an interactive worksheet in which the pupils choose the answers from drop-down lists in the text and in the tables. There is enough information for pupils to work through autonomously at the computer. Remember that some of the pupils will need Internet access in order to use the simulation at www.explorescience.com to get the answers. Other pupils who already have a good grasp of the work will not need to use the simulation, as they will understand the relationships being studied. The worksheet gets progressively harder and all the pupils will need access to the simulation to answer the last few more open-ended questions in which they grab a screen-shot of one of their results. A completed worksheet with the answers on is available in for teachers.
- **A big moment** – This is a PowerPoint presentation built around solving a single scenario about moments. It could be used as an extra starter or plenary or to test understanding at some other point in the lesson.
- **The last moment** – This is another PowerPoint presentation that can be used as the plenary for the lesson. It reviews the key scientific ideas covered and the original mental starter, *The Italian job*. Review the pupils' original predictions, and discuss how their thinking about this problem has changed.

Pupils may print out their completed worksheets as a record of their work if they cannot keep it stored in their personal file.

Other strategies

The activities outlined above do not need to be used in just one lesson. They can be used in conjunction with other activities. For example, the mental starter[s] would work well if it was the introduction of the balance beam/ moment practical, or the interactive worksheet, *Just a moment*, could be used to review theory work on this topic.

Extension ideas

- Pupils produce their own interactive worksheets and answers to test other members of the class.
- Class discussions on other applications where moments are seen in everyday life.

Learning outcomes

- To learn the principle of moments and its application to situations involving one pivot

Investigative skills:

- Make predictions
- Consider key factors to take into account

Resources

Access to the Internet for the *Just a moment* activity.

Prior learning

None

Where the activity fits in

QCA Unit 9L Pressure and moments

Skills

Investigative, numeracy calculations

Calculation answers

All answers to *Just a moment* pupil activity are found in *Just a moment* answer sheet.

Extra Sheets

Using drop-down lists in MS Word providences guidance on generating similar interactive worksheets yourself.

ICT Skills

Using a simulation to solve problems

Pitfalls

If you want to use the *Just a moment* worksheet you must make sure it is protected. This can be done by clicking on the **Protect forms** option in **Protect document** on the **Tools** toolbar. If you want to change these forms, amend the text, or allow pupils to type in the text boxes, they must be unprotected **BUT** the drop-down lists only work if the document is protected. Pupils should therefore only unprotect documents when they want to type in text answers.

Acknowledgement

Written by Rob Musker.