Mathematics Departmental Workshops
Topic: Developing Functionality in Mathematics

Overview
The purpose of this workshop is to introduce you and your team to both the standalone functional skills tests in mathematics and the functional elements in the new GCSE mathematics specifications for 2010. The aim is to provoke discussion about how you might embed opportunities for students to improve their functional skills into your schemes of work and day-to-day teaching.

Where are you now?
This activity is designed to familiarise your team with the structure and assessment of the functional skills tests in mathematics.

Issue Resource Sheet 1 to your team. Categorise each of the twelve statements about functional skills in mathematics as true or false. The answers are provided on Resource Sheet 2.

Activity 1: Thinking functionally
Activity 1 is intended to encourage your team to be vigilant about seeking opportunities to provide students with the chance to practise their functional skills.

Issue copies of the following to your team as prompt sheets:
- Resource Sheet 3: A visual prompt
- How tall will you be? from www.censusatschool.ie
- Admission prices to Blackpool Zoo

Use these to answer the following questions:
- What mathematical questions could be asked about this prompt material?
- What mathematics subject knowledge would be helpful to answer these questions?
- How might you adapt this material for students of different abilities?
- Which of the functional mathematics Process Skills could be addressed with this material?
- How would you assess individual/group student responses to your questions?
- How might you make your students more confident about answering questions of this type?
- How are these tasks relevant to students’ familiarity and experience?
- How might these tasks be used to develop students’ literacy and ICT skills?
- What cross curricular opportunities exist for this prompt material?

Activity 2: Developing functional questions
Activity 2 allows your team to work together to explore a context in order to produce an imaginative and relevant set of questions that will provide an engaging challenge for students with a wide range of abilities.

Use information from www.humberbridge.co.uk here:
- http://www.humberbridge.co.uk/toll.php
- http://www.humberbridge.co.uk/tollhistory.php
- http://www.humberbridge.co.uk/trafficstatistics.php
Working initially in pairs and then as a whole team, use this information to develop a set of questions for:

(a) Lower attaining students
(b) Middle attaining students
(c) Higher attaining students

• What additional information might be useful to develop/extend your questions?
• Where might you find this information?
• What problems might you encounter when you come to assess students’ responses to your questions?

Reflection
As a team, consider the following questions:

• What are the implications of functional mathematics for the classroom?
• What are the implications of functional mathematics for the curriculum?

How might your practice change in the light of this workshop?

Implementing and continuing to learn
Ask members of your team to consider what they might aim to do to further develop functionality in mathematics:

• Tomorrow
• Next Week
• Next Year

You can use Resource Sheet 4 to record this if it is helpful to do so.

Further reading

• [http://nationalstrategies.standards.dcsf.gov.uk/node/16057](http://nationalstrategies.standards.dcsf.gov.uk/node/16057) offers mathematics subject support for functional mathematics from the National Strategies website.
• [http://www.teachers.tv/series/a-world-of-maths](http://www.teachers.tv/series/a-world-of-maths) is a series of videos on Teachers TV showing the application of mathematics in real life.
• [https://www.ncetm.org.uk/resources/11329](https://www.ncetm.org.uk/resources/11329) is the ‘Maths in Work’ microsite from NCETM featuring video clips of mathematics in real life.