National Centre for Excellence in the Teaching of Mathematics

Mathematics Departmental Workshops
Topic: Planning for progression

Overview
This workshop is designed to support you in evaluating current policies and procedures for planning for progression. It will provide opportunities to highlight any possible inconsistencies across the team and explore whether the provision is meeting the needs of your students, building on prior learning and is sufficiently challenging.

Where are you now?
Compare and contrast current practice with the excerpt below from **Mathematics: understanding the score Ofsted 2008.**

Good schemes of work were rare in secondary schools. It was not uncommon for teachers to use only examination specifications and textbooks to guide their lesson planning, focusing on content rather than pedagogy. Few schemes included guidance on matters such as the most effective teaching approaches, how to meet the full range of pupils' needs or on what constitutes an appropriate level of challenge. They provided insufficient support for teachers who were at an early stage in their professional development or for staff who were not mathematics specialists.
Mathematics: understanding the score Ofsted 2008 (paragraphs 45 and 46)

Ask each member of your team to complete 'Resource Sheet 1: Curriculum Map'

Activity 1: Curriculum planning
Break into pairs and describe to each other how you plan for the teaching of mathematics on a long, medium and short term basis

Come together as a team and reflect if the processes described differ for different profiles of learners. For example:
- a student entering year 7 with a high level 4(KS2 SAT)
- a student entering year 7 with a level 3 (KS2 SAT)
- a student entering Y10
- a student studying AS Mathematics with a GCSE grade B
- a student studying AS Mathematics with a GCSE grade A*
- a student studying A2 Mathematics with a AS grade D

Key questions to consider:
- How does curriculum planning take into account prior learning?
- How does curriculum planning take assessment information into account?
- Do you plan for progression across
  - i) the secondary phase (11-16 and/or 11-18)
  - ii) a key stage
  - iii) a year group
  - iv) a term ?

Activity 2: Knowing your learners
Discussion Point 1:
Nationally, it is expected that students should make at least 3 levels of progress from year 7 to 11.
- In pairs, complete the statements on 'Resource Sheet 2: Knowing your learners'.
- Are there any groups of students making less progress than expected?

Information needed to complete 'Resource sheet 2: Knowing your learners'
Nationally (based on 2009 mathematics data):
75% of students with KS2 levels 5 made the expected progress
60% of students with KS2 levels 4 made the expected progress
36% of students with KS2 levels 3 made the expected progress
26% of students with KS2 levels 2 made the expected progress
26% of students with KS2 level B or N made the expected progress (GCSE E or better)

Overall 58% of students made expected progress at KS 2-4 in maths

Sources for this data for your school include Raise On Line report, your school's assessment manager and Local Authority Mathematics contact.

Discussion Point 2:
Ask the team to work with a different partner and discuss the following statement:

'Clearly 3 levels of progress for the more able students is not enough. 4 or 5 levels of progress will be needed for these students to achieve A* or A grades at GCSE.'

- Do they agree with the statement?
- Are there any groups of students making less progress than expected?

Activity 3: Exploring progression within a strand of mathematics

- In pairs, cut out the statements on 'Resource Sheet 3: Exploring progression in Functions and graphs' to sequence the objectives.
- Ask pairs to share their results with the whole group, and compare with 'Resource sheet 4: Strand progression' which shows how these objectives are sequenced in the National Strategy Framework for secondary mathematics. Note: Objectives from year 5 and 6 of the primary framework have been added to show progression from key stage 2 to key stage 3

- Identify where these learning objectives appear in your medium term plans. Discuss whether the placement of these objectives will help students to make at least 3 levels of progress from year 7 to 11.

- Team Discussion:
  - Do you agree with the structure of the 'Mathematics overview and lines of progression' (http://nationalstrategies.standards.dcsf.gov.uk/node/110233) of the National Strategy Framework for secondary mathematics?
  - Do they help teachers and students to make connections between different areas of mathematics?

Reflection: Short term, medium term and long term planning

Ask the team how they would respond to the following scenario:

'A new member of staff is joining the team next month. He has e-mailed the Subject Leader to clarify the approaches and resources the department use to plan on a short, medium and long basis.'

Long and medium term planning

Compare and contrast your current long and medium term curriculum plans with models A and B on 'Resource Sheet 5: Long and medium planning'. Make a list of similarities and differences.

Discuss if any of the entries in the 'Different' column would enhance current policies and procedures for long and medium term curriculum planning. You may wish to use the following scenarios to further discussion:

- Consider a group of students who are making insufficient progress. This may be for example students entering key stage 3 at level 4.
- Do medium term plans build on previous knowledge so that new learning takes place?
- Do medium term plans enable students to make progress in a topic year by year?

Short term planning

Compare and contrast your current short term plans with 'Resource Sheet 6: Short term planning'. Make a list of similarities and differences.

Discuss if any of the entries in the 'Different' column would enhance current policies and procedures for short term planning. You may wish to use the following points to further discussions:
- Consider a group of students who are making insufficient progress. This may be for example students entering key stage 3 at level 4.
- Do short term plans build on previous knowledge so that new learning takes place?
- Do short term plans enable students to make progress in a topic year by year?
- How does day to day assessment inform short term planning?

Implementing and continuing to learn
Ask members of your team to consider what they might aim to change:

- Tomorrow
- Next Week
- Next Year

Members of your team can use Resource Sheet 7 to record this if it is helpful to do so

Further reading

- NCETM Excellence in Mathematics Leadership (EiML) (http://www.ncetm.org.uk/resources/21289) - Key Element 'Curriculum and lesson planning' (www.ncetm.org.uk/resources/21321)
- The National Strategies - Mathematics overview and lines of progression http://nationalstrategies.standards.dcsf.gov.uk/node/110233

NCETM Mathemapedia entries:

- www.ncetm.org.uk/mathemapedia/Learning+Trajectory
- www.ncetm.org.uk/mathemapedia/Planning+for+Learning+(at+Key+Stage+4)
- www.ncetm.org.uk/mathemapedia/Planning+at+AS+and+A2