1 Some principles for assessing Key Processes

Make the process objectives explicit

Share the process objectives with pupils and from time to time ask pupils to produce evidence that they can achieve these objectives. This is sometimes difficult as pupils find processes less understandable than content. This doesn't mean writing them on the board at the beginning of the lesson, but rather referring to their use consistently and explicitly while attempting to solve unstructured, non-routine problems. In plenary sessions, ask pupils to share and compare approaches, rather than answers. When pupils get stuck, offer strategic advice on what they need to do next.

Assess groups as well as individual learners

Group activities such as poster making allow many opportunities to observe, listen, and question learners. They make thinking visible and allow the teacher to see quickly where difficulties have arisen.

Watch and listen before intervening

Before intervening in a group discussion, wait and listen. Try to follow the line of reasoning that learners are taking. When you do intervene, begin by asking them to explain something. If they are unsuccessful then ask another learner to help.

Use divergent assessment methods ("Show me what you know about ...").

Convergent assessment strategies are characterised by tick lists and can-do statements. The teacher asks closed questions in order to ascertain whether or not the learner knows, understands or can do a predetermined thing. This is the type of assessment most used in written tests.

Divergent assessment, in contrast, involves asking open questions that allow learners opportunities to describe and explain their thinking and reasoning. These questions allow learners to surprise us - the outcome is not predetermined.

Give constructive, useful feedback

Research shows that responding to pupils' work with marks or levels is ineffective and may even obstruct learning. Quantitative feedback of this type results in pupils comparing marks or levels and detracts from the mathematics itself.

Instead, use qualitative oral and written comments that help learners recognise what they can do, what they need to be able to do and how they might narrow the gap.

Change teaching to take account of assessment

As well as providing feedback to learners, good assessment feeds forward into teaching. Be flexible and prepared to change your teaching plans in mid-course as a result of what you discover.

The above principles reflect the characteristics of *formative assessment,* which may be defined as:

"… all those activities undertaken by teachers, and by their students in assessing themselves, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged. Such assessment becomes 'formative assessment' when the evidence is actually used to adapt the teaching work to meet the needs."

(Black & Wiliam, 1998 para, 91)

Adapted from: Improving Learning in Mathematics, Department for Education and Skills, 2005.