

# Key messages

- Science departments should be clear about the links between the level descriptions and *How science works (HSW)*.
- Science departments need to explore the coherence between the level descriptions, yearly learning objectives (YLOs) and Assessing Pupils' Progress (APP) in science materials.
- The broad descriptions of levelness still apply, although the general characteristics need to reflect the wider picture of *HSW*.
- There are a number of resources available from the science Framework, located in the National Strategies area of the Standards site ([www.standards.dcsf.gov.uk/nationalstrategies](http://www.standards.dcsf.gov.uk/nationalstrategies)) to support planning and assessment at Key Stages 3 and 4.

These include:

- **YLOs** – the main steps in progression from Year 7 to Year 11 (extension).
  - **Amplification** – gives more detail about YLOs and is helpful when writing objectives and outcomes.
  - **Strategies for progression** – teaching strategies where *HSW* is used to deliver the Range and Content (R&C). The two are seen as complementary to each other rather than 'competing' with each other. This makes a difference to the way in which the R&C is delivered, so that pupils have the opportunity to think about and explore their understanding (or misunderstanding) of the concept. *HSW* is not an 'add-on', but a way of teaching and learning. These strategies are aimed at moving pupils to the next step – they are not intended to deliver the YLOs for that year.
  - **Rich questions** – open-ended, higher order questions which require learners to either link or apply ideas, give reasons, summarise or evaluate. Sometimes the questions encourage learners to ask further questions in order to identify what the question is actually asking them to explain. These questions generally require extended answers. Sometimes they are 'big' questions that can't be answered immediately. They may prompt a range of possible answers from a number of learners, which in turn raise a list of smaller questions that need to be answered before the answer to the 'big' question can be formulated.
  - **Barriers** – areas that pupils find difficult, or the common misconceptions they might hold. These can prevent pupils making progress and need to be identified in the scheme of learning and addressed through teaching.
- Consistent and developed *HSW* practice will support science departments in moving forward with APP.
  - Schools need to ensure that their action plan for the implementation of the AfL strategy, including APP, is regularly reviewed, monitored and evaluated.
  - LA science consultants will support this process in a variety of ways, including subject leader development (SLD) meetings, but possibly also network meetings and tailored school support.