

# Planning and implementing progression for science in the classroom

## Implications for the science department

Your colleague has attended this Key Stage 3 Strategy science CPD unit, and has selected some follow-up actions to complete in his or her own teaching and to share within the department. A summary of the main points from the course is printed on the reverse of this handout.

If you wish, your colleague will share some of the outcomes of the unit and provide you with photocopies of useful information and handouts. Participants have:

- a mapping of progression of ideas in learning about 'Earth and beyond';
- a sample from a scheme of work showing good progression ('The solar system and beyond');
- information about how to derive appropriate lesson objectives from the yearly teaching objectives;
- a suggested vocabulary list for framing lesson objectives;
- examples of how to differentiate lesson objectives to an appropriate level of demand;
- information about how to find out what pupils understand at the start of a teaching unit;
- examples of starting-point activities at the beginning of a unit and pupils' responses to these;
- an analysis of different ways to organise lessons effectively at the start of a unit;
- some suggested teaching and learning activities intended to promote progress to higher levels;
- examples of activities to use part way through a unit to check pupils are making the expected progress.

## For the department

- Ensure that the key scientific ideas and yearly teaching objectives have been used to review the progression in the departmental scheme of work (following unit 2, *Planning and managing progression in science*).
- Consider building starting-point activities into the start of teaching units.
- Check that the departmental scheme of work builds on the strong foundation brought to Year 7 by pupils.
- Consider building a checking-progress activity into a midway point in each unit.
- Check that the objectives in the departmental scheme of work reflect the suggested demand and vocabulary.
- Consider whether departmental CPD based on this unit would be helpful for more teachers.

### For individual teachers

- Check which parts of the course information and materials you should ask your colleague for.
- Review whether your own teaching develops the progression recommended in this unit.
- Consider whether you would benefit from participating in this CPD unit.

### Main messages from the unit

- We do not just follow the scheme of work. We interpret it and adapt it to the needs of the pupils in our classes.
- Pupils at Key Stage 3 have an increasingly strong foundation upon which our teaching must adapt and build.
- We need to elicit pupils' understanding (and misconceptions) at the start of a unit and match our teaching accordingly.
- Progression in scientific ideas can be mapped (as it has been for the five key ideas) and should be built into our scheme of work.
- The yearly teaching objectives show progression from Year 7 through to Year 9, which reflects national expectations of attainment.
- Levelness provides a helpful way of deciding the next steps in pupils' learning, and in ensuring progression.
- Clarity and precision in lesson objectives and expected pupil outcomes is key to effective teaching.
- Checking understanding and dealing with it at the start of a unit takes relatively little time, reduces unhelpful repetition of earlier work, thereby saves teaching time and helps maintain pupil motivation.
- Starting-point activities can be carried out at the beginning of a unit or at the end of the previous unit. The first few lessons can be organised to deal with the range of understanding elicited.
- In the first lesson focus primarily on dealing with the weaknesses in understanding in order to narrow the attainment gap within the class and make managing subsequent lessons easier.
- Relying solely on an end-of-unit test for assessment information is inefficient. It is too late to deal with weaknesses discovered. A mid-unit checking-progress point allows time to deal with emerging slow progress and thereby helps to ensure better progress.
- Starting-point activities can be repeated as checking-progress activities later in the unit.
- Much lesson planning involves clear thinking rather than long written plans. It is aided by good progression built into the departmental scheme of work.