

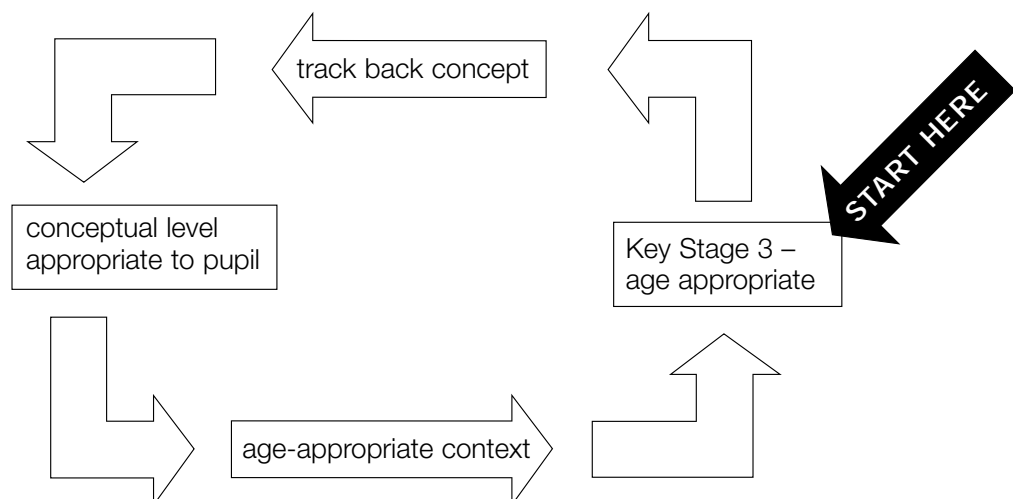
Developing the science curriculum for pupils with special educational needs

This unit focuses on how teachers can develop an age-appropriate Key Stage 3 science curriculum for pupils with special educational needs, taking account of:

- the need to identify relevant science objectives which will challenge pupils, but which are also pitched at a relevant and realistic level;
- the importance of an age-appropriate context in which to set the scientific ideas;
- the different ways that pupils learn science and the use of this information to influence your teaching;
- the importance of knowledge about individual pupils, in order to decide on teaching strategies and questioning styles for teaching science, that will provide individuals the motivation to learn.

Constructing an age-appropriate curriculum

One way of ensuring that the curriculum for pupils with special educational needs is realistic but challenging is to start from the programme of study for the key stage of the pupils' chronological age. Having chosen an area of work the scientific ideas must then be tracked back to a level appropriate to the particular children in question. The final and very important stage is to return to the age-appropriate key stage to select a context in which to set the ideas. This last stage is vital if pupils are to experience the challenge of a broadening curriculum, which is the cornerstone of teaching in Key Stage 3.



Tools available to support teachers in developing an age-appropriate science curriculum are:

- *Framework for teaching science: Years 7, 8 and 9*
- Medium-term planning charts for the key scientific ideas
- P level performance descriptors contained in QCA guidance *Planning, teaching, and assessing the curriculum for pupils with learning difficulties*
- Locally developed schemes for tracking progress, curriculum planning and assessment, e.g. PIVATS, TRREACLE, B squared
- DfES/QCA exemplar schemes of work for Key Stages 1 and 2 and for Key Stage 3
- Exemplar Key Stage 3 science teaching units, *Heating and cooling* and *Resistance to movement*, developed for use in special schools
- Published teaching materials for Key Stage 3 science

The key scientific ideas in Key Stage 3

The development of science in Key Stage 3 involves pupils in a deepening awareness of concepts underpinned by scientific enquiry and one or more of five key scientific ideas:

- Cells
- Interdependence
- Particles
- Forces
- Energy

The place of scientific enquiry in the curriculum

In an effective science curriculum the skills of scientific enquiry are embedded within the teaching of the five key ideas. Progression in the development of these ideas is planned across the key stages. In addition to objectives in terms of content (*what* science will be taught), effective science lessons should have objective(s) in terms of scientific enquiry (*how* the science is taught).

Follow-up work in school

Option 1

Adapt one of the two exemplar units for use in a specific school context. Adjust the objectives, main activities, adding different starters and/or plenaries as appropriate.

Option 2

Start from one of the other examples of units in the QCA guidance on *Planning, teaching and assessing the curriculum for pupils with learning difficulties: Science* and develop this into a series of lessons with objectives appropriate to specific pupils' needs.

Option 3

Identify an area of science from the yearly teaching objectives for Key Stage 3 that is already part of planned teaching over the next half-term and develop this into a series of lessons using the processes outlined in this training.

