Ten steps to *Better writing in science*

Pupils need to develop the skills of writing in science in order to clearly communicate the full extent of their ideas, knowledge and understanding. This will enable them to achieve highly.

Decide which of these ten steps you need to take to enable your pupils to succeed in producing better writing in science.

1. Purposeful talk between teacher and pupils, and between pupils, is an essential prerequisite for good writing in science. Use the sequence: **think → talk → write**

2. Decide the **purpose** and the **audience** of the writing that pupils do. Ask pupils to write for a variety of audiences, such as younger pupils, adults, a television viewer or teen magazine readers. Emphasise the different kinds of language and form pupils need to use with different audiences.

3. **Copying involves very little thinking and learning.** Don't ask pupils to copy notes or other work. Use the time saved for more productive work.

   Monitor the amount of routine copying or written work done. Review one term of written work in a few pupils' books or folders. Judge the impact on pupils' learning.

4. **Use writing that requires engagement, decision making and thinking** by pupils. Some Directed Activities Related to Text (DARTs) are good for this.

   Ask a sample of pupils what they think of the amount of writing they do in your lessons and what sort of writing helps them learn best.

5. **Systematically introduce and teach scientific vocabulary.** Sound out the words. Use the vocabulary explicitly and often. Rehearse the spelling, pronunciation and meaning. Use word roots to help demonstrate the meaning of scientific terms.

6. **Be rigorous but sensitive in correcting pupils' use of scientific terminology.**

   Allowing inaccurate use of terminology will hinder pupils' progress and so limit their attainment in science.

7. **Use brief, fun writing activities,** such as quizzes, loop card games and dominoes, to improve understanding and spelling of key words.

   See the *Science intervention materials* for more ideas.

8. **Model and explain the writing process,** for example, conclusions, explanations or evaluations. Give pupils examples of others' work to examine, evaluate and improve.

   As the first step, demonstrate the writing. Next, compose together. Then, guide and scaffold their early attempts and wean them towards independence.

9. Teach pupils to **write explanations, linking cause with effect,** using connectives such as 'because' and applying their scientific vocabulary accurately. Help them write comparative statements such as the '...er ...er rule'. Use the sentence building activities in the *Science intervention materials* and the writing frames and mats from the *Getting more pupils to level 5 in science* training.

10. Give pupils opportunities to show their scientific knowledge and understanding through **writing in a variety of styles,** including the personal and imaginative. Let them practise writing answers to test questions.

Useful resources *If these are not already in your department see your Key Stage 3 science consultant*

- *Literacy in science* Session 3: Writing in Science (DfES 0653/2002). Additional handouts available from science consultants
- *Effective teaching and learning in science* Session 3: Developing pupils' writing in science (DfES 0239/2003)
- *Science intervention materials: Teachers' notes* (DfES 0355-2004) and materials (DfES 0078-2004 CD)
- *Strengthening teaching and learning in science through using different pedagogies* Unit 4: Using models and modelling techniques (DfES 0700-2004 G)
- *Literacy and learning: Guidance for senior leaders* (DfES 0652-2004) and *Literacy and learning in science* (DfES 0656-2004 G)
- *Pedagogy and Practice: Teaching and learning in secondary schools Unit 14: Developing writing* (DfES 0437-2004 G)
- *Getting more pupils to Level 5: Participants pack* (DfES 0349-2004 G, DfES 0974-2004 G)