

Effective lessons in science

Main messages from the unit

- Pupils need structure to their lessons in order to understand the direction in which their learning is going.
- This structure can change depending on the type of scientific activity that is planned.
- Ofsted reported in *Progress in Key Stage 3 science* that effective lessons are those in which:
 - teaching has clear subject-specific strengths;
 - teaching has a clear sense of purpose;
 - teachers have high expectations for pupils' achievement;
 - planning is thorough;
 - classroom management is effective;
 - time is used effectively.
- Starter activities are valuable in engaging pupil interest straight away in a lesson.
- Starter activities can be used for different purposes.
- The main activity in any lesson benefits from a short introduction by the teacher.
- Overlong and drawn-out introductions reduce the learning time available to pupils.
- Plenaries were found by Ofsted to be the weakest part of the lessons observed.
- Effective plenaries occur at strategic points within a lesson; they do not have to come at the end.
- Effective plenaries highlight not only **what** the pupils have learned but **how** they learned it.
- Plenaries, like starters, can be used for different purposes – for example, taking learning further or stimulating interest in the next stage of learning.

Implications for the science department

The department should discuss the learning and teaching styles currently in use and, where there is a restricted range, aim to introduce more variety. This may well have been highlighted as a development need during the audit, and subsequently become a departmental action point.

For the department

Use a departmental meeting to share the main messages from the unit.

Use the models of effective lesson structures contained on the CD-ROM provided in the participant's pack to stimulate departmental discussion.

Give out copies of handout 1.13 'Recording sheet for lesson models', and ask members of the department to reflect on the lessons they have taught recently.

Work in pairs and pick a model to exemplify, providing details on the recording sheet.

Discuss the results as a department. If there is evidence that one type of lesson is being taught predominantly, consider introducing more variety.

Share starter and plenary activities with colleagues. Emphasise that they must relate to the lesson being taught.

Plan to add more starter and plenary activities to the scheme of work.

For individual teachers

Use the information provided about effective lessons in science to reflect on the way you currently teach. The following questions can be helpful prompts for this activity.

Do I provide lessons which:

- have high, realistic expectations and explicit instructions?
- make it clear to pupils what has to be learned?
- include activities and tasks that actively involve pupils and offer challenge?
- include whole-class teaching to maximise learning time for pupils?
- encourage interactive questioning and discussion, with opportunities and encouragement for pupils to respond and use hunches?
- provide immediate feedback and support for pupils at points of difficulty?
- contain prompts and strategies to support independence?