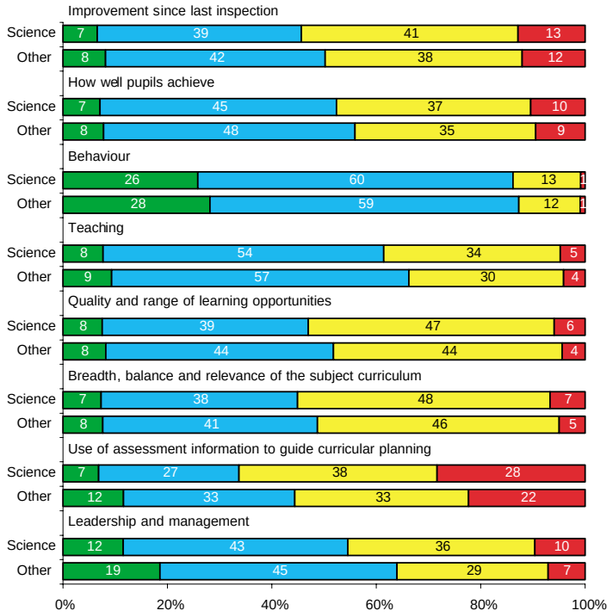
Office for Standards in Education

Science at a glance 2002/03

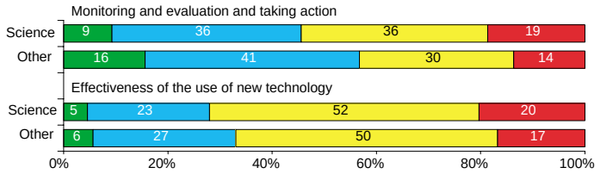
July 2004
Maintained primary and secondary schools in England

Overview of science (percentage of primary schools)

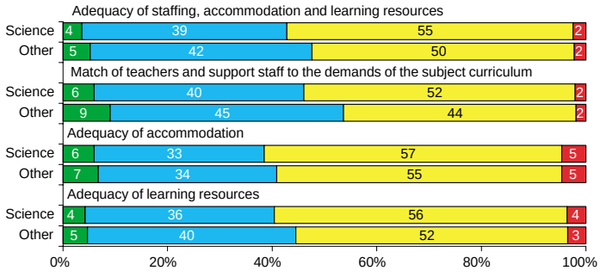
Other = English, mathematics and science



Aspects of leadership and management (percentage of primary schools)

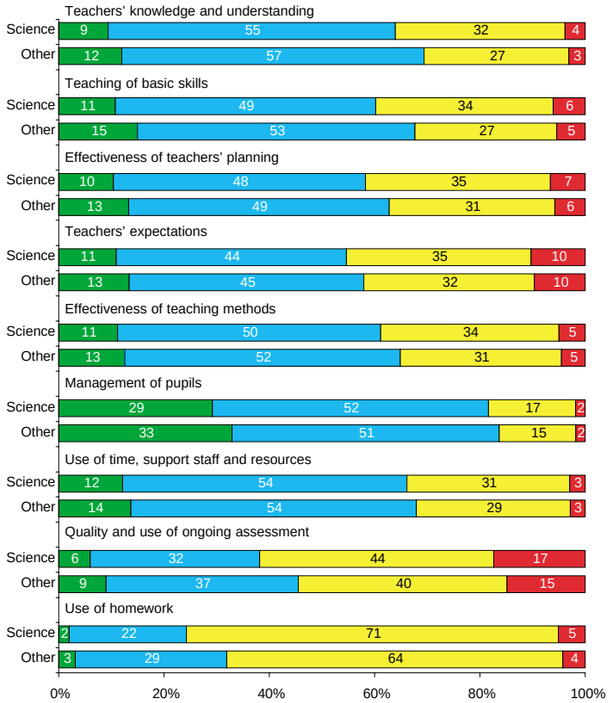


Staffing, accommodation and resources (percentage of primary schools)

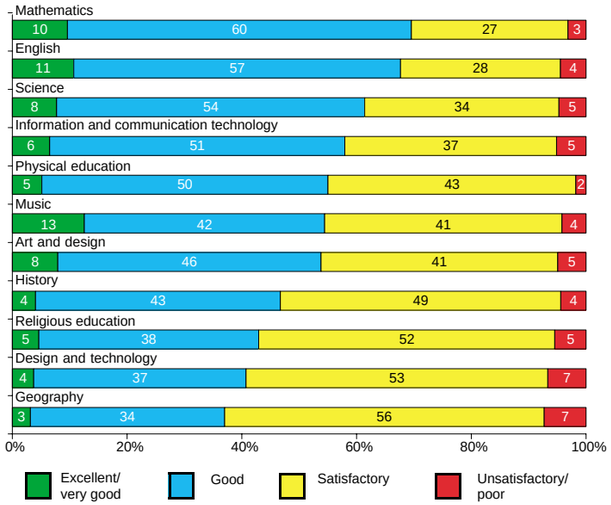


2002/03 inspection data based on full inspections only: not nationally representative
These figures have been rounded and may not add up to 100%

Quality of aspects of teaching (percentage of primary schools)



Quality of teaching by subject (percentage of primary schools)

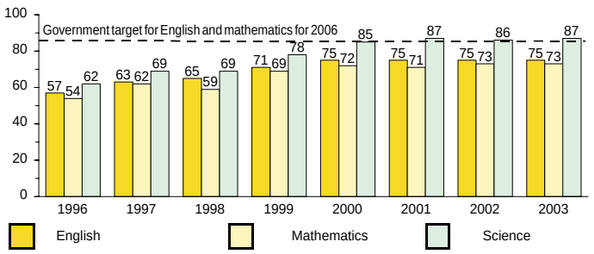


Main findings for primary schools – 2002/03

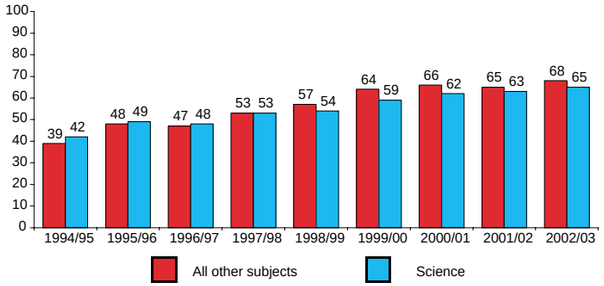
- Science improved in some respects in more than half of schools since their last inspection. Improvements included whole-school planning, better use of day-to-day assessment and more explicit links with literacy.
- Pupils' overall achievement in science has not changed significantly at either Key Stage 1 or 2.
- The overall quality of teaching has not changed. Teaching remains most effective where pupils are actively involved in thinking through and carrying out scientific enquiry.
- More schools than previously now have science as a stated priority in their development plans. Areas selected for attention often include investigative practical work, the use of local resources and the strengthening of links between science and other subjects, particularly at Key Stage 1.
- Although most science still takes place in afternoon sessions, increasingly this is supplemented by using short morning 'catch up' time and days or weeks when the normal timetable is suspended. This allows occasional periods of extended activity and improves continuity.
- Most schools rely heavily on the Department for Education and Skills (DfES)/Qualifications and Curriculum Authority (QCA) schemes of work for planning, but an increasing minority are substantially modifying this to reflect local circumstances and needs.
- There have been significant improvements in the use of ongoing assessment but this remains an area for development. In particular, teachers need to acquire the techniques of questioning necessary to establish pupils' learning in science and to use pupils' talk to inform their teaching.
- Some of the highest achievement and keenest motivation are linked to the good use of scientific enquiry. However, provision is very varied and professional development is needed if enquiry is to improve.
- Science co-ordinators played a crucial part in those schools where science has improved. Government, school managers and local education authorities (LEAs) all have a part to play in ensuring that co-ordinators have the training and support they need to assist and monitor colleagues.

A full version of the 2002/03 report can be found on the Ofsted website.

Percentage of 11 year old pupils achieving level 4 and above in English, mathematics and science

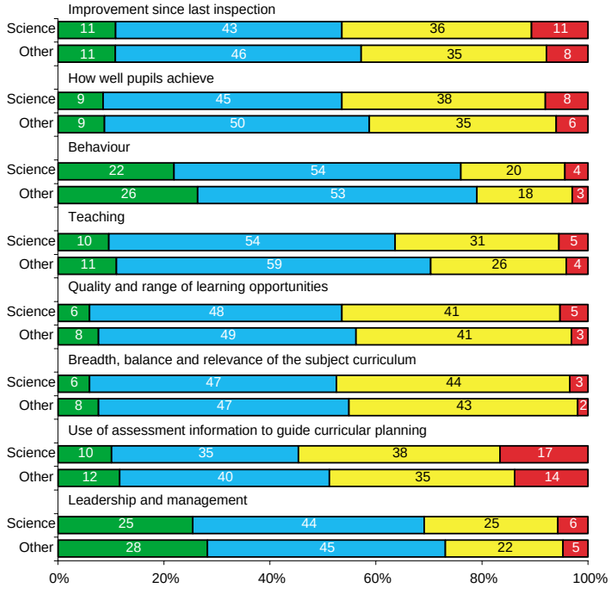


Percentage of good or better teaching in science over time (percentage of lessons in primary schools)

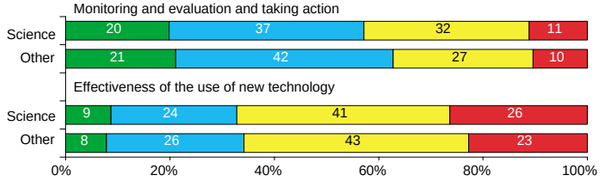


Overview of science (percentage of secondary schools)

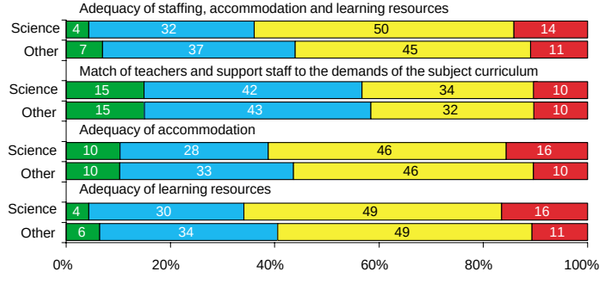
Other = English, mathematics and science



Aspects of leadership and management (percentage of secondary schools)



Staffing, accommodation and resources (percentage of secondary schools)



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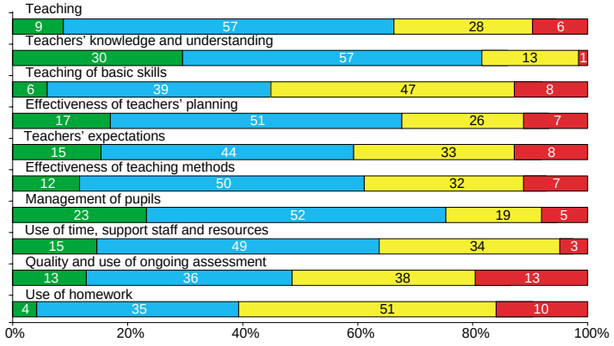
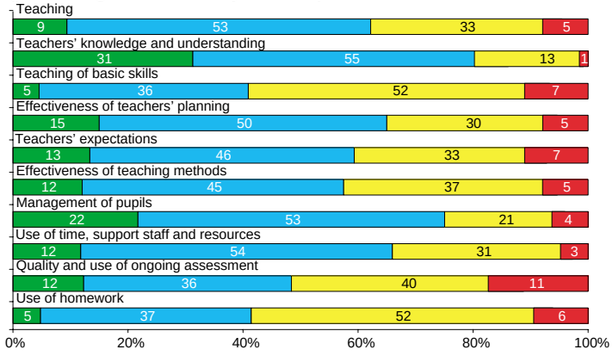
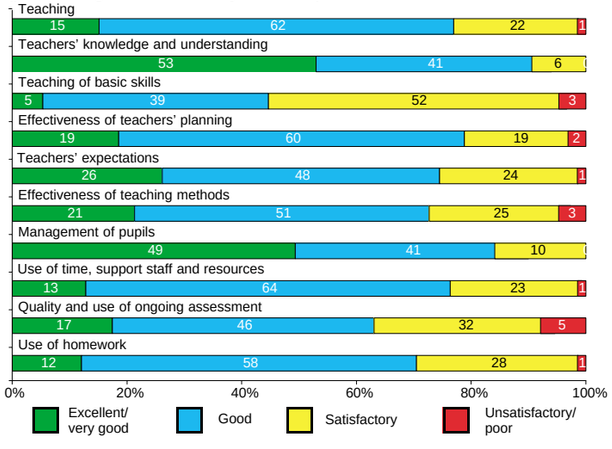
Quality of teaching at Key Stage 3 in science (percentage of secondary schools)



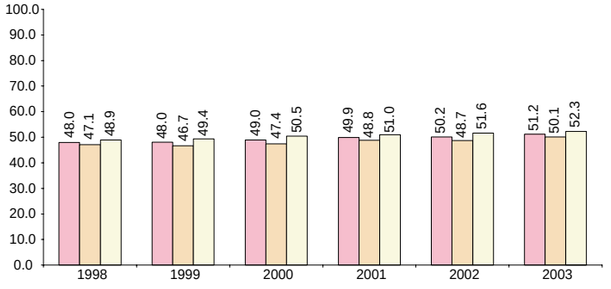
Quality of teaching at Key Stage 4 in science (percentage of secondary schools)



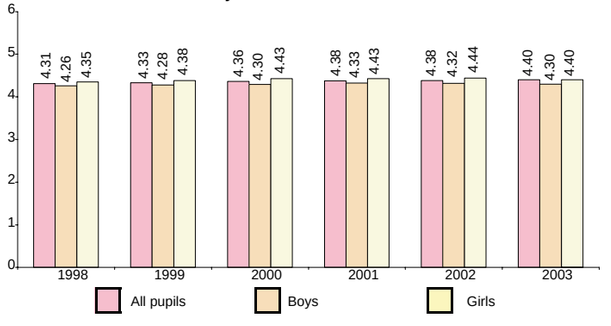
Quality of teaching at post-16 in science (percentage of secondary schools)



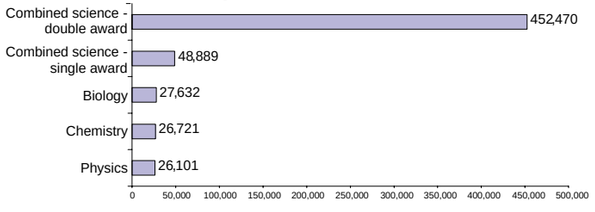
Percentage of pupils obtaining A*–C GCSE grades in combined science double award: all maintained secondary schools



GCSE average points score in combined science double award: all maintained secondary schools



Number of 15 year old pupils entered for GCSE science: all maintained secondary schools – 2003



GCSE results for science: all maintained secondary schools – 2003

	A*	A	B	C	D	E	F	G	U
Combined science-double award	3.3	7.6	12.3	27.9	20.2	14.0	8.6	3.7	2.2
Combined science-single award	0.1	0.6	1.9	11.8	17.8	21.7	22.7	14.0	8.7
Biology	11.3	24.6	28.4	22.3	8.6	2.6	1.2	0.5	0.5
Chemistry	12.3	22.5	26.1	25.2	9.8	2.4	0.8	0.3	0.3
Physics	13.3	24.3	25.3	23.7	9.8	2.3	0.6	0.2	0.4

GCSE results for all subjects: all maintained secondary schools – 2003

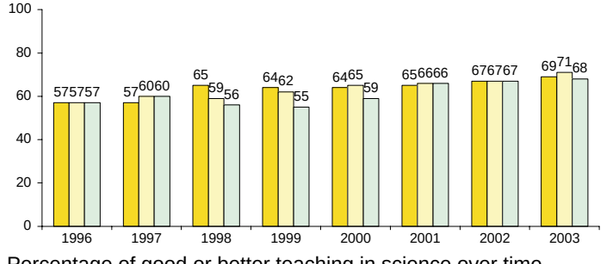
	A*	A	B	C	D	E	F	G	U
All subjects	3.7	10.4	17.2	23.8	18.3	12.5	7.4	3.7	2.4

Main findings for secondary schools – 2002/03

- There have been significant improvements in science in more than half of schools since the last inspection. There has been less improvement post-16, with only four schools in ten making good progress.
- In Key Stage 3, pupils' achievement has risen and is now good or better in six out of ten schools compared with half of schools at Key Stage 4.
- Results in national tests have improved slightly, with 68% of pupils at Key Stage 3 reaching the expected level 5 and an increase of seven percentage points in the proportion of pupils gaining level 6 or above. This year's tests gave greater emphasis than previously to scientific enquiry.
- General Certificate of Secondary Education (GCSE) results have also improved slightly with 51.2% of pupils who took combined science double award gaining a grade C or above. There has been a small drop in the proportion of single-award candidates gaining grade C or above and little change in performance in separate biology, chemistry and physics. Nine out of ten pupils took double science.
- A Level results show a slight improvement in physics, chemistry and biology. Across all three subjects girls' attainment is higher than that of boys, particularly at the higher grades, and with an average point score around six percentage points higher.
- The Advanced Subsidiary (AS) level results show a slight decline from last year. The average point score is around 1% lower for physics and chemistry with biology declining by 1.8%. Again, the performance of girls is higher than boys, but by a smaller margin.
- The quality of teaching has changed very little at Key Stage 4. However, at Key Stage 3 there have been improvements in teachers' knowledge and understanding, planning, expectations and teaching methods.
- There has been a corresponding improvement in pupils' pace of learning, interest and independence at Key Stage 3.
- There is greater monitoring of pupils' performance in science than previously, leading to effective action to bring about improvement, particularly at Key Stage 3.
- Assessment is beginning to broaden and have a greater influence on curriculum planning. At Key Stage 3 the use of ongoing assessment to provide immediate feedback to teachers and pupils is becoming established. This is less common at Key Stage 4.
- The use of scientific enquiry has strengthened at Key Stage 3 but remains narrow at Key Stage 4 where it is less well integrated into the curriculum.

A full version of the 2002/03 report can be found on the Ofsted website (www.ofsted.gov.uk).

Percentage of pupils attaining level 5 or above in Key Stage 3 English, mathematics and science tests



Percentage of good or better teaching in science over time (percentage of lessons in secondary schools)