

Standards in science achieved by secondary school pupils educated in Welsh and in English

This report has been produced in response to an additional request from the Welsh Assembly Government Enterprise and Learning Committee for Estyn evidence about standards in science in Welsh and English-medium schools. The evidence below is derived from an analysis of secondary school inspections held during 2007 – 2010. We also include a brief analysis of GCSE examination data over the same period. Overall, the evidence suggests that standards, teaching and assessment outcomes are better in Welsh-medium schools.

Standards in secondary school science provision

The charts below show the distribution of grades awarded in inspections over the last three years for standards and teaching in science at the secondary sector key stages, in both Welsh- and English-medium schools.

Chart 1 - Standards in Key Stage 3

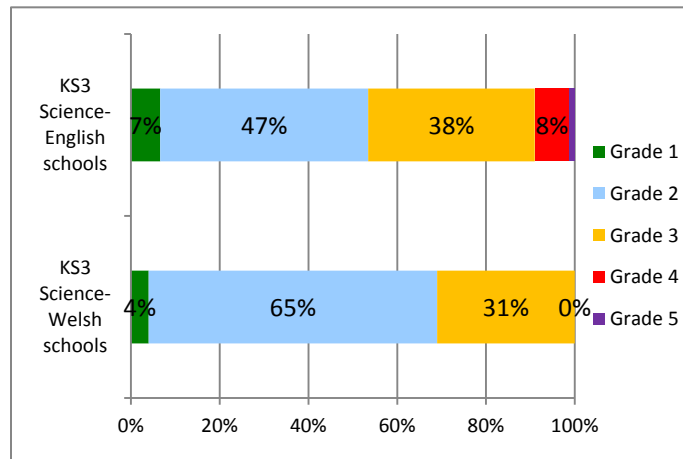


Chart 2 - Standards in Key Stage 4

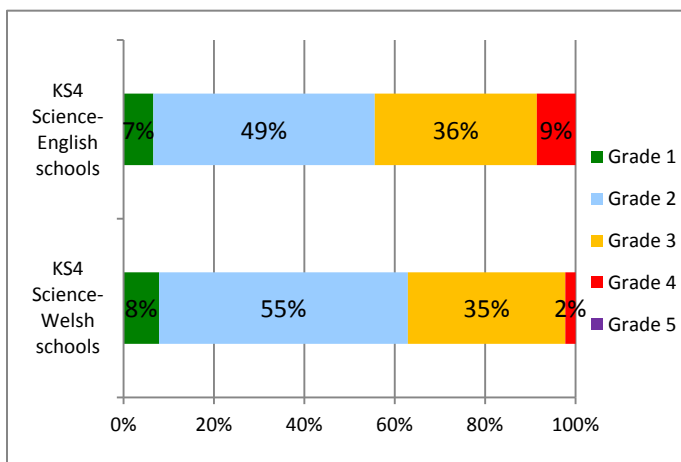
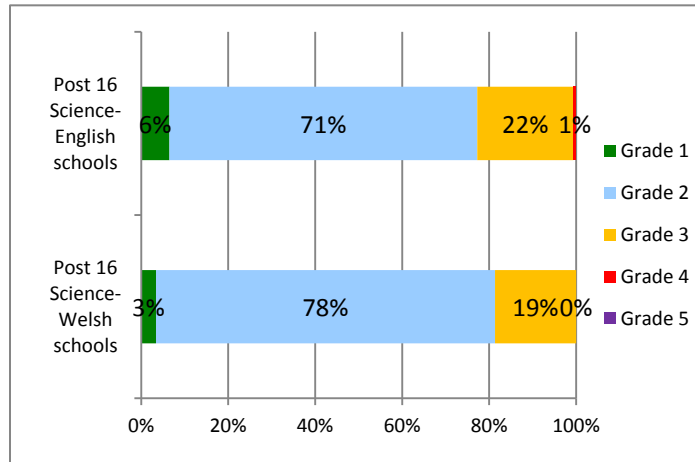


Chart 3 - Standards in post-16 (sixth forms)



Standards of achievement

Pupils achieve good or better standards (grade 1 and 2) more often in Welsh-medium than in English-medium schools across all key stages. Lessons in which there are shortcomings in pupils’ standards (grade 3 or below) occur more frequently in English-medium than in Welsh-medium schools.

In key stages 3 and post-16, a slightly higher proportion of pupils achieve the highest standards (grade 1) in English-medium than in Welsh-medium schools. At key stage 4, a similar proportion of pupils in Welsh-medium and English-medium schools achieve the highest standards.

The quality of science teaching

Chart 4 – Teaching in Key Stage 3

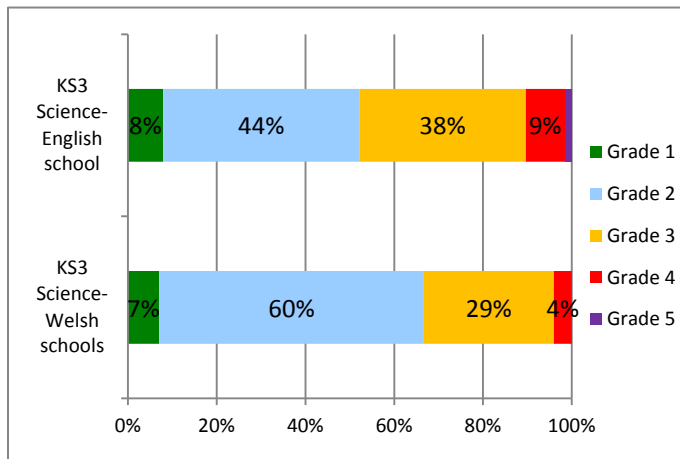


Chart 5 – Teaching in Key Stage 4

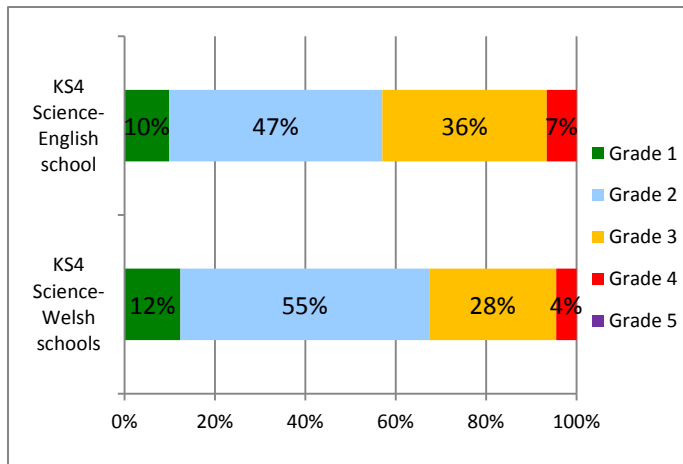
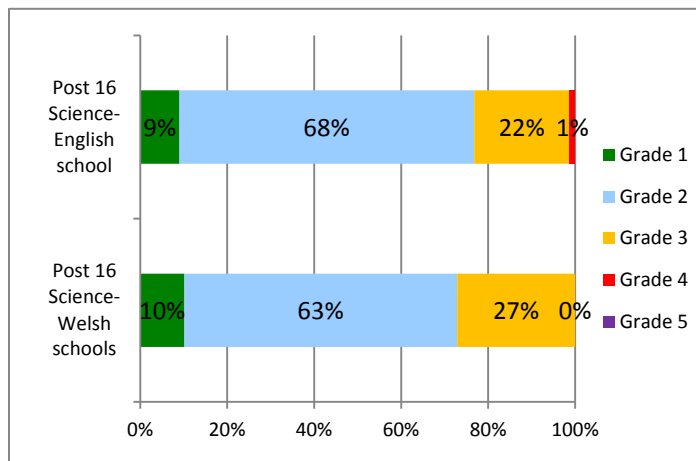


Chart 6 – Teaching in sixth forms



The proportion of lessons in which teaching is good or better (grades 1 and 2) is substantially higher in Welsh-medium schools at key stages 3 and 4. At post 16, the proportion of lessons in which teaching is good or better is higher in English-medium schools. The proportion of lessons with the best teaching (grade1) is similar in Welsh-medium and English-medium schools across all key stages.

At key stages 3 and 4, shortcomings are seen in the quality of teaching more frequently in English-medium schools. However, shortcomings in the quality of teaching are more often seen in Welsh-medium schools at post 16.

A brief analysis of examination results at key stage 4

Chart 7 – The proportion of pupils achieving the core subject indicator¹ at key stage 4 in Welsh-medium and English-medium schools.

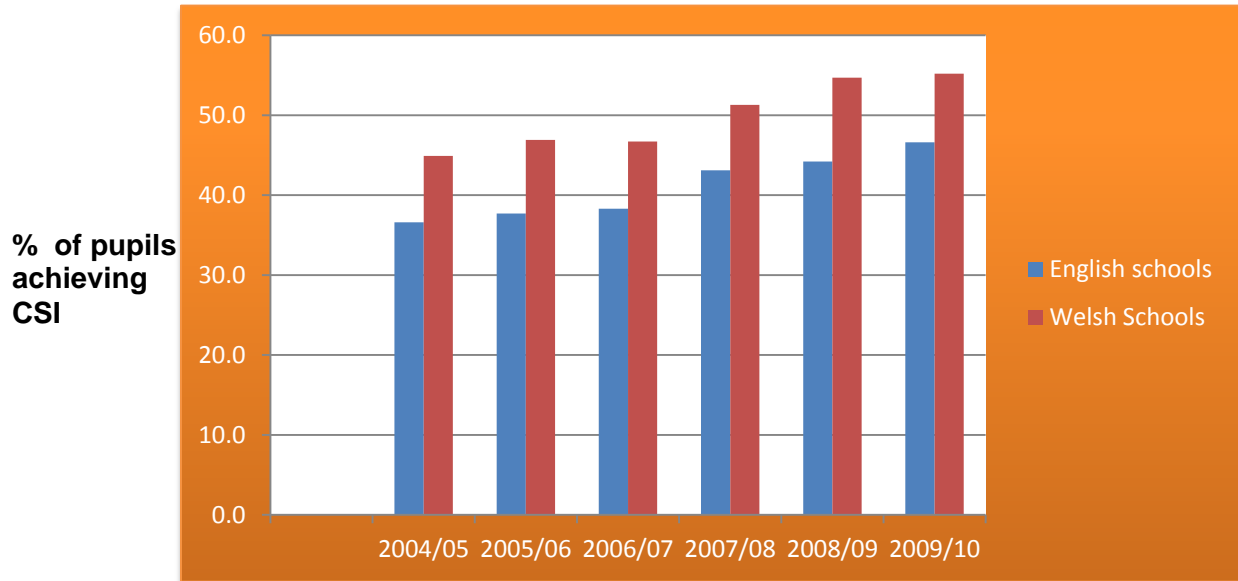
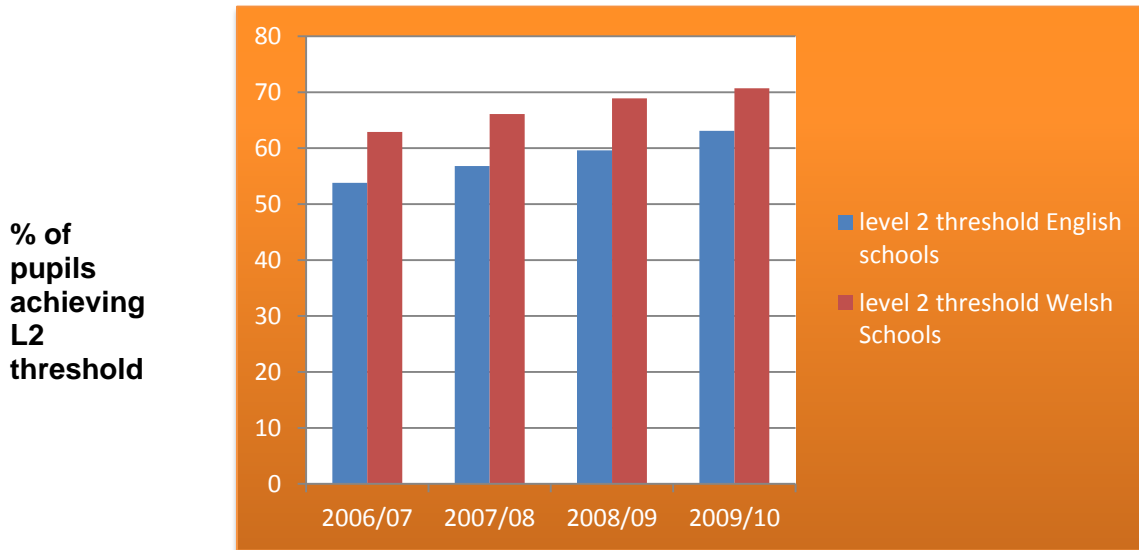


Chart 8 - The proportion of pupils achieving the level 2 threshold in Welsh-medium and English-medium schools



The proportion of pupils achieving the core subject indicator ¹ between 2005 and 2010 is consistently higher in Welsh-medium schools when compared with English-medium schools.

The proportion of pupils attaining the level 2 threshold ² between 2007 and 2010 is also consistently higher in Welsh-medium schools than in English-medium schools.

Limitations of the analysis of examination results

It is not easy to identify separately the GCSE science data for Welsh-medium and English-medium schools. However, results in GCSE science are likely to follow a similar pattern to that of the core subject indicator and level 2 threshold.

The examination data analysis above does not take account of socio economic indicators, such as free school meals.

At key stage 3, most Welsh-medium schools teach science through the medium of Welsh. At key stages 4 and 5 the situation is more complex, though nearly all Welsh-medium schools in south Wales teach science at key stages 4 and 5 in Welsh. However, this is not reflected across the country as a whole, where some schools offer pupils a choice of language or use a bilingual approach.

Appendix

During this cycle of inspections, the following grades were used:

Grade 1 good with outstanding features

Grade 2 good features and no important shortcomings

Grade 3 good features outweigh shortcomings

Grade 4 some good features, but shortcomings in important areas

Grade 5 many important shortcomings

¹The core subject indicator relates to performance in English or Welsh, mathematics and science, the core subjects of the National Curriculum.

²The Level 2 threshold represents a volume of learning equivalent to 5 GCSEs at grade A* to C.