

A-level subject take-up

Numbers and proportions of girls and boys studying A-level subjects in England

In November 2013, in the report 'Maintaining curiosity', Ofsted recommended that:

'Secondary schools monitor and evaluate the progression of different groups of pupils and their continuation to science-related pathways in education... against the national proportions for those groups.'

Until now there has been no single source of data for schools or inspectors to consult that sets out the numbers and proportions of girls and boys that progress from Year 11 to AS levels and then from AS to A level. This report provides that data, so that schools can compare their own performance against the national picture. Several subjects have significantly unequal numbers of girls and boys, for example physics.

Age group: Post-16

Published: March 2015

Reference no: 150048



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No. 150048

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Introduction

Ofsted's report on science in schools 'Maintaining curiosity'¹ noted that most secondary schools do not routinely track the progress of their Year 11 students into post-16 courses for any subject. As a result, many schools do not know what subjects their Year 11 students go on to study and in what proportions by gender. Concurrent research by the Institute of Physics (IoP) highlighted disappointingly large variations in the proportions of girls studying physics between schools² and then showed that schools with a gender imbalance in the subject also have gender imbalances across other subjects.³ The following data will allow schools to compare their own students' progress to Advanced Level (A-level) subjects with the national figures.

Take-up of AS level subjects by gender

Table 1 gives details of subject take-up by gender based on AS examination entry data in 2013/14. These data reflect the choices made by Year 11 students as they move to post-16 study. It is based on the cohort of students who were in Year 11 in 2012/13, then completed AS subjects in 2013/14. The 'percentage of girls' column shows the percentage of girls taking the subject compared with the total number of Year 11 girls in 2012/13, and similarly for boys. So, for example, 26,277 girls went on to study chemistry, from a cohort of 280,326, representing 9.4% of all girls. The girl:boy ratio depicts the relative proportion of girls taking that subject for every boy that does so. For example in physics, the ratio is 0.3 to 1, which means that for every three girls there are 10 boys taking AS physics.

These data refer to those who complete their studies. They do not take account of the numbers of students who start courses in Year 12 then withdraw.

¹ *Maintaining curiosity* (130135), Ofsted, November 2103; www.gov.uk/government/publications/maintaining-curiosity-a-survey-into-science-education-in-schools.

² *It's different for girls*, Institute of Physics, 2012; www.iop.org/publications/iop/2012/page_58292.html.

³ *Closing doors*, Institute of Physics, 2014; www.iop.org/education/teacher/support/girls_physics/closing-doors/page_62076.html.

Table 1: Percentage of girls and boys from KS4 2012/13 going on to study different AS level subjects in 2013/14

Subject group	Number of all students	Number of girls	Percentage of girls	Number of boys	Percentage of boys	Girl:boy ratio
Total KS4*	571,334	280,326	49.1%	291,008	50.9%	0.96
Taking AS in 2013/14	258,528	141,893	50.6%	116,635	40.1%	1.22
Vocational level 3**	61,748	29,186	10.4%	32,562	11.2%	0.90
Biological sciences	64,247	38,707	13.8%	25,540	8.8%	1.52
Chemistry	53,444	26,277	9.4%	27,167	9.3%	0.97
Physics	39,307	8,951	3.2%	30,356	10.4%	0.29
Other science	4,772	1,547	0.6%	3,225	1.1%	0.48
Mathematics	84,335	34,029	12.1%	50,306	17.3%	0.68
Further mathematics	9,173	2,491	0.9%	6,682	2.3%	0.37
Design and technology	14,508	5,823	2.1%	8,685	3.0%	0.67
Computing	8,196	707	0.3%	7,489	2.6%	0.09
ICT	9,428	2,969	1.1%	6,459	2.2%	0.46
Accounting and finance	3,993	1,311	0.5%	2,682	0.9%	0.49
Business studies	29,708	12,544	4.5%	17,164	5.9%	0.73
Economics	23,049	7,123	2.5%	15,926	5.5%	0.45
Geography	36,653	18,429	6.6%	18,224	6.3%	1.01
Government and politics	12,967	5,990	2.1%	6,977	2.4%	0.86
History	54,687	30,290	10.8%	24,397	8.4%	1.24
Law	14,982	9,250	3.3%	5,732	2.0%	1.61
Psychology	73,390	52,701	18.8%	20,689	7.1%	2.55
Sociology	39,107	29,494	10.5%	9,613	3.3%	3.07
Other social studies	5,326	3,124	1.1%	2,202	0.8%	1.42
Art and design	38,553	28,715	10.2%	9,838	3.4%	2.92
Drama	12,752	8,715	3.1%	4,037	1.4%	2.16
English	86,705	62,332	22.2%	24,373	8.4%	2.56
Media/film/TV studies	23,628	13,635	4.9%	9,993	3.4%	1.36
Other communication studies	9,637	5,574	2.0%	4,063	1.4%	1.37

French	9,563	6,948	2.5%	2,615	0.9%	2.66
German	4,189	2,622	0.9%	1,567	0.5%	1.67
Spanish	7,446	5,228	1.9%	2,218	0.8%	2.36
Other modern languages	2,433	1,515	0.5%	918	0.3%	1.65
Classical studies	4,521	2,751	1.0%	1,770	0.6%	1.55
Religious studies	22,698	15,972	5.7%	6,726	2.3%	2.37
Music	6,985	2,830	1.0%	4,155	1.4%	0.68
Physical education	16,669	6,997	2.5%	9,672	3.3%	0.72

Source: Statistical first release, National tables, 2014, Department for Education.

*All Year 11 students in state funded schools in 2012 to 2013. State-funded schools include academies, free schools, city technology colleges and state-funded special schools but exclude independent schools, independent special schools, non-maintained special schools, hospital schools and alternative provision including academy and free school alternative provision and pupil referral units.

** Level 3 vocational courses taken in 2013/14 by this cohort will be one-year courses.

AS to A2 progression by subject

The table below shows the percentage of girls and boys who continued from AS to A2 for all major GCE subjects by entry number. These students completed their Key Stage 5 studies in 2013/14.

Table 2: Percentage of girls and boys who continued for AS to A2 for all major GCE subjects by entry number

Subject	Proportion of students who continue from AS to A level	
	Girls	Boys
Biological sciences	73%	71%
Chemistry	70%	72%
Physics	57%	71%
Other science	59%	71%
Mathematics	70%	79%
Further mathematics	61%	71%
Design and technology	77%	78%
Computing	55%	62%
ICT	72%	72%
Accounting and finance	59%	65%

Business studies	73%	80%
Economics	69%	74%
Geography	75%	76%
Government and politics	73%	76%
History	77%	82%
Law	74%	70%
Psychology	74%	63%
Sociology	78%	72%
Other social studies	43%	50%
Art and design	80%	78%
Drama	83%	82%
English	82%	79%
Media/film/TV studies	81%	82%
Other communication studies	76%	78%
French	63%	67%
German	62%	64%
Spanish	64%	70%
Other modern languages	90%	91%
Classical studies	74%	73%
Religious studies	76%	76%
Music	71%	76%
Physical education	77%	74%
General studies	44%	44%

Source: Department for Education

Typically, students in the 16-19 sector study four AS levels in Year 12, expecting to reduce this to three subjects at A2 level in Year 13. The national average progression proportion for all AS to A2 subjects is 72.7%. Note the continuing gender inequity in these choices, for example from AS to A-level physics for girls (at 57%) compared with boys (at 71%).