

Educational attainment of young people by age 19, 2012/13

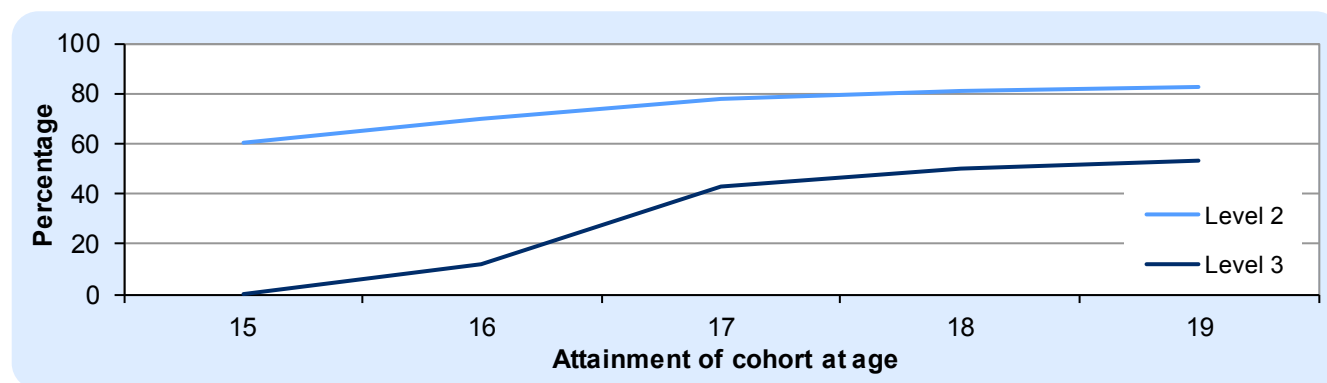
This Statistical Release presents analysis obtained by matching together datasets of school, further education and work-based learning awards to gain a complete picture of attainment. This Release replaces the previous versions, providing two more recent years of data, but also replaces the data for earlier years. It includes information on level 2 attainment in English/Welsh and maths by the age of 19 for the first time. The statistics are still regarded as experimental, and we welcome any feedback on the approach. Further work on the methodology, and this analysis, will take place for a further update of this Release including data up to 2013/14 to be published later this year.

The methodology used to produce these results is based on similar work done in England, but data are not directly comparable for reasons as set out in the Notes, which also provide more information on level thresholds, data sources, definitions and methodology. Note that whilst this includes estimates of attainment at age 15 also the statistical release on examination performance provides **the authoritative and most accurate estimates of secondary school performance.**

Key results for persons aged 19 in 2012/13

- By the age of 19, 82 per cent had attained the level 2 threshold and 53 per cent had level 3.
- Level 2 attainment increased by 22 percentage points between ages 15 and 19. Level 3 attainment increased by 11 percentage points between ages 17 and 19. Over time, level 2 and 3 attainment has been increasing at each age from 15 to 19.
- Level 2 attainment in English/Welsh, and maths, increases between ages 15 and 19, and has increased over time.
- The proportion of females achieving each level was higher than for males at all ages, although the size of this gap decreased as age increased.
- Most of level 2 attainment by age 15 was through academic qualifications, while for post-16 it was vocational. Most of level 3 attainment by age 19 was through level 3 general qualifications.

Chart 1: Attainment by level and age for persons aged 19 in 2012/13



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Attainment tables at levels 2 and 3

Each row reflects achievement of a specific cohort of young people with attainment in subsequent years shown by their increasing academic age.

Table 1: Proportion of young people attaining the level 2 threshold, by age

Young people aged:	15	16	17	18	19
19 in 2006/07	49	56	63	68	71
19 in 2007/08	51	59	66	71	73
19 in 2008/09	52	60	67	71	74
19 in 2009/10	53	61	69	73	76
19 in 2010/11	55	63	71	75	78
19 in 2011/12	58	66	75	79	81
19 in 2012/13	60	70	78	81	82
19 in 2013/14	63	72	78	81	
19 in 2014/15	67	74	80		
19 in 2015/16	72	79			
19 in 2016/17	77				

- For those aged 19 in 2012/13, the proportion achieving level 2 increased by 22 percentage points between the ages of 15 and 19, up to 82 per cent at age 19.
- Over time, level 2 attainment has been increasing at each age from 15 to 19.

See notes regarding comparison of age 15 data compared with published Key Stage 4 estimates.

Table 2: Proportion of young people attaining the level 3 threshold, by age

Young people aged	17	18	19
19 in 2006/07	34	41	45
19 in 2007/08	36	43	47
19 in 2008/09	37	44	48
19 in 2009/10	38	45	49
19 in 2010/11	40	48	52
19 in 2011/12	41	49	53
19 in 2012/13	43	50	53
19 in 2013/14	43	52	
19 in 2014/15	45		

- For those aged 19 in 2012/13, the proportion achieving level 3 increased by 11 percentage points between the ages of 17 and 19, up to 53 per cent at age 19.
- Over time, level 3 attainment has been increasing at each age from 17 to 19.

Attainment of maths and English/Welsh at level 2

For the first time we are able to look at continuing progress of GCSE maths and English/Welsh beyond age 15, as recommended through the Review of Qualifications (see notes for further information.)

Table 3: Proportion of young people attaining level 2 maths (GCSE A*-C), by age and year of attainment

Young people aged	15	16	17	18	19
19 in 2006/07	44	45	45	45	45
19 in 2007/08	46	47	47	47	48
19 in 2008/09	47	49	49	49	49
19 in 2009/10	49	51	51	51	51
19 in 2010/11	50	51	52	52	52
19 in 2011/12	51	53	54	54	54
19 in 2012/13	53	55	56	56	57
19 in 2013/14	55	58	59	59	
19 in 2014/15	56	58	59		
19 in 2015/16	58	60			
19 in 2016/17	60				

- For those aged 19 in 2012/13, 57 per cent had achieved level 2 (GCSE A*-C) maths by age 19, increased from 53 per cent at age 15.
- Achievement has increased from cohort to cohort.

Table 4: Proportion of young people attaining level 2 English/Welsh (GCSE A*-C), by age and year of attainment (a)

Young people aged	15	16	17	18	19
19 in 2006/07	52	54	54	54	54
19 in 2007/08	52	53	54	54	54
19 in 2008/09	52	54	55	55	55
19 in 2009/10	55	56	57	57	57
19 in 2010/11	57	59	59	60	60
19 in 2011/12	62	63	64	64	64
19 in 2012/13	62	63	64	64	64
19 in 2013/14	63	65	65	66	
19 in 2014/15	64	65	65		
19 in 2015/16	63	65			
19 in 2016/17	64				

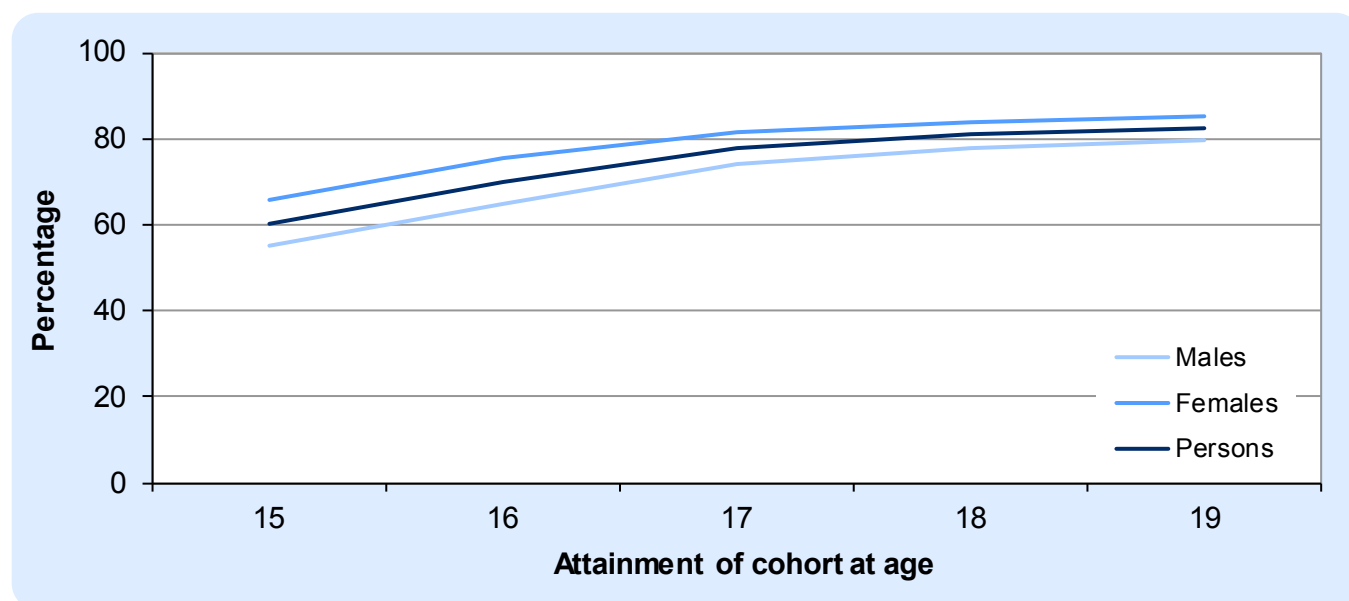
(a) For each pupil the best grade of English language, English literature, Welsh first language and Welsh literature is taken.

- For those aged 19 in 2012/13, 64 per cent had achieved level 2 (GCSE A*-C) English or Welsh by age 19, increased from 62 per cent at age 15.
- Achievement has increased from cohort to cohort.

Further analysis of attainment by gender, age and qualification type

Level 2

Chart 2: Attainment at level 2 by gender and age, persons aged 19 in 2012/13



- 66 per cent of 15 year old females achieved level 2 compared with 55 per cent for males (gap of 11 percentage points).
- By age 19, the gap has decreased to 5.5 percentage points. 85 per cent of females had achieved level 2 compared with 80 per cent of males.

Table 5 shows the type of qualifications achieved to reach level 2, by age 15 and post-16.

Table 5: Attainment at level 2 by qualification type and age, persons aged 19 in 2012/13

	<i>Per cent</i>		
	Achieved level 2 by age 15	Achieved level 2 post-16	Achieved level 2 by age 19
5 GCSEs A-C	56	1	57
Apprenticeship	0	5	5
NVQ Level 2	0	5	5
VRQ Level 2	0	7	7
Level 3 qualifications	0	2	2
Combination of qualifications	4	2	6
Proportion achieving level 2	60	22	82
Number achieving level 2	22,800	8,400	31,200

- 56 per cent of the cohort achieved level 2 solely through GCSEs by age 15 with a further 1 per cent achieved level 2 solely through GCSEs post-16.
- Attainment at level 2 through qualifications other than solely through GCSEs was 4 per cent at age 15, increasing to 21 per cent by age 19.

Table 6 shows the type of qualifications achieved to reach level 2 post-16, by gender.

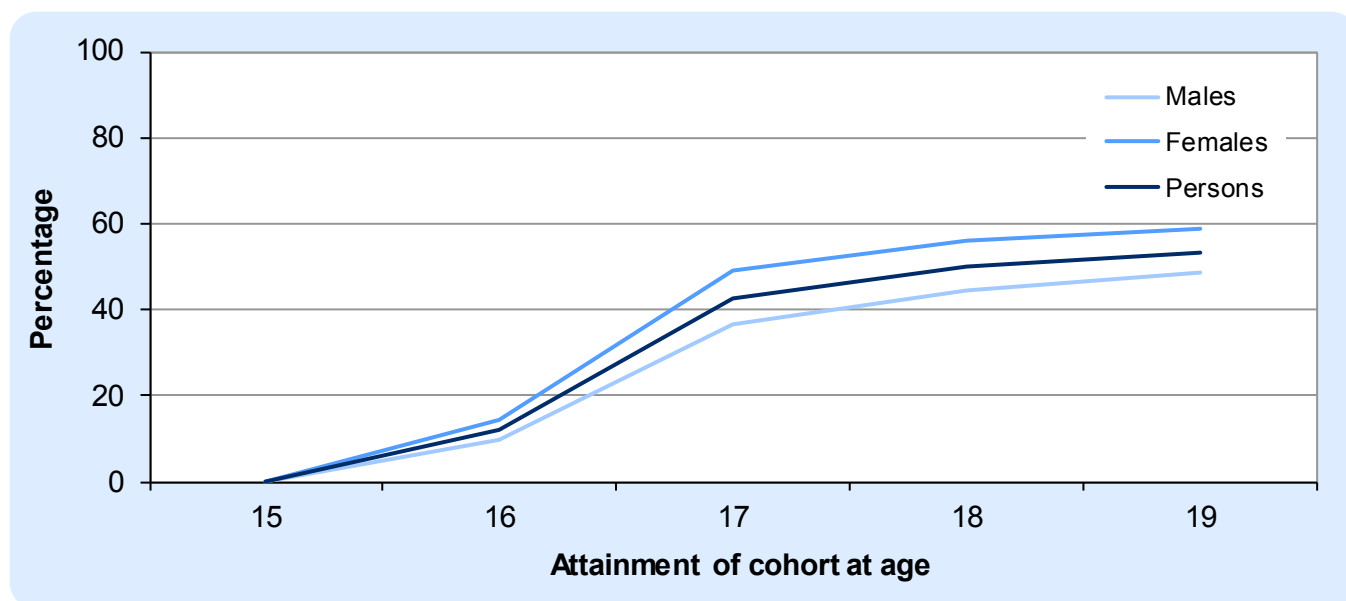
Table 6 Attainment at level 2 by qualification type and gender, persons aged 19 in 2012/13

	<i>Per cent</i>		
	Males	Females	Persons
Achieved level 2 by age 15	55	66	60
Attainment post-16	25	20	22
5 GCSEs A*-C	1	1	1
Apprenticeship	6	4	5
NVQ Level 2	6	4	5
VRQ Level 2	7	6	7
Level 3 qualifications	2	2	2
Combination of qualifications	2	2	2
Achieved level 2 by age 19	80	85	82
Number achieving level 2 by age 19	15,400	15,800	31,200

- 22 per cent of the cohort achieved level 2 post-16, with 16 per cent through vocational qualifications and apprenticeships.
- A higher proportion of males (25 per cent) than females (20 per cent) attained level 2 post-16.

Level 3

Chart 3: Attainment at level 3 by gender and age, persons aged 19 in 2012/13



- 49 per cent of 17 year old females achieved level 3 compared with 37 per cent for males (gap of 12 percentage points) (not shown in tables).
- By age 19, the gap decreased to 10 percentage points. 59 per cent of females had achieved level 3 compared with 48 per cent of males.

Table 7 shows the type of qualifications achieved to reach level 3 by age 19, by gender.

Table 7: Attainment at level 3 by qualification type and gender, persons aged 19 in 2012/13

	<i>Per cent</i>		
	Males	Females	Persons
AS/A-Levels or AVCEs (a)	29	38	34
Apprenticeship	3	1	2
NVQ Level 3	1	1	1
VRQ Level 3	13	14	13
Combination of qualifications	2	4	3
Proportion achieving level 3	48	59	53
Number achieving level 3 by age 19	9,400	10,900	20,200

(a): Advanced Vocational Certificate of Education

- Most of the attainment at level 3 by age 19 was through level 3 general qualifications (34 per cent through AS/ A-Levels or AVCEs) and VRQ Level 3 (13 per cent).
- Attainment at level 3 through level 3 general qualifications was 10 percentage points higher for females than males.
- Attainment at level 3 through Apprenticeships was higher for males than females.

Notes

1. Background

This Release aims to improve estimates of attainment levels by matching together datasets of school, further education and work-based learning awards to gain a complete picture of attainment. The Annual Population Survey (APS) is used to estimate highest qualification measures of the population in Wales, for example in the monitoring of the Programme for Government. However, data for individual years of age and statistics for small age bands such as 19-21 from the APS can be subject to large margins of error due to small survey samples and mis-reporting of qualifications. To overcome these issues with survey data, this approach brings utilises administrative qualifications data, matching individual learner data together across datasets.

Similar measures are also published by the Department for Education for England :-

<https://www.gov.uk/government/statistics/level-2-and-3-attainment-by-young-people-aged-19-in-2014> (please see later in notes regarding need to exercise caution in making direct comparisons with this data).

Uses of these data

Along with highest qualification levels of working age population from the APS, level 2 and 3 attainment at age 19 from this release were included within the Programme for Government indicator suite.

While these data have been obtained through matching together of pupil-level records, it is only appropriate to use aggregates of these data. It is not appropriate to use the matched data for individual pupils, schools or local authorities.

2. Definitions

Academic age: Age as at 31st August prior to the start of the academic year. For example, young people aged 19 on 31st August 2012 have academic age 19 in the academic year 2012/13.

Cohort: Throughout this release, the cohorts of young people are referred to by the academic year in which they are of academic age 19. For example, young people aged 19 in 2012/13 were 19 on 31st August 2012 and were born in the time period 1st September 1992 – 31st August 1993.

Cohort size: This is the size of the cohort at age 14 for schools in Wales, including those living in England and attending a school in Wales. This does not include pupils living in Wales but attending a school in England. For more information on the data source, see section 3 of these notes.

Table 8: Cohort size at age 14

	<u>2002/03</u>	<u>2003/04</u>	<u>2004/05</u>	<u>2005/06</u>	<u>2006/07</u>	<u>2007/08</u>	<u>2008/09</u>	<u>2009/10</u>	<u>2010/11</u>	<u>2011/12</u>	<u>2012/13</u>
Cohort	38,800	39,700	39,000	39,400	39,800	39,300	37,900	37,300	36,200	35,700	36,900

Post-16: This is defined as between the ages of 15 and 19 in this release.

Level thresholds: Thresholds represent a volume, or 'size' of qualifications at a specific level on the National Qualifications Framework (NQF). Three thresholds have been established:

- Level 1 – a volume of qualifications at Level 1 equivalent to the volume of 5 GCSEs at Grade D-G
- Level 2 – a volume of qualifications at Level 2 equivalent to the volume of 5 GCSEs at Grade A*-C
- Level 3 – a volume of qualifications at Level 3 equivalent to the volume of 2 A-Levels

Level 1, 2 and 3 widths apply to all qualifications. Examples of such widths are shown in Table 9 below.

Table 9: Example widths at levels 2 and 3

Qualification	Level 2 width	Level 3 width
GSE A-Level (A-E)	80	50
GSE AS-Level (A-E)	40	25
GCSE (A*-C)	20	0

A total width of 100 or more is required to achieve each level.

The current database of approved qualifications for use in Wales (DAQW) can be found at <http://www.daqw.org.uk/>. However, Qualifications Wales are working on a new database QiW which will replace DAQW shortly, further details are available here:- <http://qualificationswales.org/qualifications/qualifications-in-wales>

Level 3 general qualifications: AS/A-Levels and AVCEs (Advanced Vocational Certificate of Education).

3. Sources of data

Key Stage 4 and post-16 school examination results (KS4/5) – 2002/03 to 2012/13

These data were collected by the Welsh Government from awarding organisations for the school performance exercises from 2003 to 2013 and have been checked by schools. The figures include any exam re-grades, rescinds and missing qualifications where evidence was provided within the allotted time period.

Lifelong Learning Wales Record (LLWR) – 2003/04 to 2012/13

The LLWR was introduced in 2004 as a unified data collection system which would enable further education, work-based learning and community learning to be funded and monitored on a consistent basis. Prior to this, data were collected through separate systems.

Vocational Qualifications – 2003/04 to 2012/13

Information on National Vocational Qualifications (NVQs) and Vocationally Related Qualifications (VRQs) has been taken from the Vocational Qualifications database held by the Department for Education. This database holds candidate level information on awards of all types of accredited vocational qualifications from awarding bodies.

Denominator: Pupil Level Annual School Census (PLASC & STATS1) – 2001/02 to 2011/12

PLASC is an electronic collection of pupil and school level data provided by all maintained sector primary, secondary, nursery and special schools in January each year. PLASC replaced the STATS1 school level data collected from secondary schools in 2003. The denominator is the size of the cohort aged 14, as measured in PLASC or STATS1. See section 4 of these notes for the reasons why this data source was used for denominators used in percentage calculations.

4. Methodology

The awards datasets were matched together using statistical fuzzy matching routines. These routines use identifiers such as names, date of birth, home postcode and unique pupil number. Indicators were produced to calculate attainment from each dataset and combined to give overall levels.

Discounting of academic qualifications

Academic qualifications have been discounted to ensure that they are not counted twice in the levels of attainment. Discounting was applied by qualification level and subject, within and across academic years. For example, a pupil achieves AS-Level English in 2011/12 (level 3 width 25) then A-Level

English in 2012/13 (level 3 width 50). The contribution of these qualifications to level 3 is 25 in 2011/12 and 50 in 2012/13 (not 75).

Academic data from the LLWR

Since the KS4/5 datasets do not contain full coverage of academic attainment at FE colleges, these data were supplemented by academic attainment data from the LLWR. To assign qualification widths to the academic LLWR records some of the grade values needed to be recoded for example from PASS to P, R(B) to B, and * to A*.

Choice of denominator

A review was undertaken in England as to whether the denominator should be the size of the cohort at age 14 in PLASC, or the mid year estimate of population (MYE) at age 14. It was decided that the size of the PLASC cohort at age 14 should be used and the same methodology has been used for Wales in this release. The benefits of this method include that the cohort size is fixed (once known) and is not revised, and these cohort sizes are census counts and not estimates. Further information can be found on p39-43 of National Statistics Quality review report 38 at <http://www.ons.gov.uk/ons/guide-method/method-quality/quality/quality-reviews/theme/children--education-and-skills/nsqr-38/index.html>

English/Welsh and maths GCSE

[*The Review of Qualifications for 14 to 19 year olds in Wales*](#) included a recommendation to report on and encourage attainment of GCSE English Language/Welsh First Language and Numeracy at A* to C by 16 to 19 year olds who have not achieved these by 16.

In line with current reporting of Key Stage 4 examination performance, information in this Release relates to the best grade of English language, English literature, Welsh first language and Welsh literature, and of maths. Changes to reporting at Key Stage 4 are due to take place in 2017 when the first awards of the new Maths – numeracy GCSE are made.

Rounding

Please note that figures are rounded and therefore there may be apparent slight discrepancies in the percentage point changes identified.

5. Plans for further publication

Further work on the methodology, and this analysis, will take place for a further update of this Release including data up to 2013/14 to be published later this year.

This release presents data at an all Wales level. Whilst the data could be analysed at local authority level, we have some concern about the fitness for purpose of these estimates, particularly in relation to migration with England for border authorities, and data have not been matched together with this level of detail in mind.

6. Key Quality Information

Our statistics are produced to high professional standards set out in the Code of Practice for Official Statistics. They undergo regular quality assurance reviews to ensure that they meet customer needs. They are produced free from any political interference.

We welcome comments on this release, please send these to post16ed.stats@wales.gsi.gov.uk or call 029 2082 3357.

Known issues with data quality

Up to and including 2008/09, school performance information has been published using a set of aggregate school level data and not by using the individual matched pupil data as in this release. While producing this release it has become clear that there are quality issues with the pupil level data for 2002/03 which mean that the published national figures cannot be replicated. Data for later years are of better quality due to the ongoing improvements made to our quality assurance procedures.

From 2008/09 onwards, school performance information has been collected at pupil level and the data subjected to the same quality assurance procedures as other pupil level data collections e.g. PLASC, KS1-3 and attendance.

Also for 2002/03, data for further education institutions from the Individualised Student Record (ISR) was not included. This was due to the small number of achievements that would be added to the overall attainment figures at levels 1 and 2. This has led to a small undercount of attainment levels for the cohort of 15 year olds in 2002/03. From 2003/04, this data was obtained from the LLWR.

Data matching

The LLWR and NISVQ records were statistically matched to KS4/5 records. A statistical match is matching at a level of quality suitable for use at aggregate level and statistical purposes but not individual pupil-level. Although the same matching routines would be applied for a full match the extent of manual checking and amendment afterwards is much less. To find the best match between datasets the matching routines work from the strongest through to relatively weaker match levels or combinations. A minimum match criteria is defined to prevent over-matching. Over-matching is the problem where two candidates are matched together when they should not be. Under-matching is the problem where two records belonging to a single candidate are not matched together. Each year we undertake the analysis the data is completely rematched.

This process means that each update of the Release revises the estimates provided for earlier cohorts. Table 10 highlights the difference between the estimates published in this 2012/13 Release of data with those published previously (2010/11) for the cohort aged 19 at that point (as reported in the Programme for Government). This shows a small degree of change, however, as the methodology develops we would hope to see less change from year to year. However it should be stressed that the data included in this release are all produced on the same basis and therefore comparisons can be made between cohorts and levels.

Table 10: Comparison with matched data from 2010/11 for cohort aged 19 in 2010/11

	Level 2		Level 3	
	2012/13	2010/11	2012/13	2010/11
15	55	56		
16	63	61		
17	71	70	40	38
18	75	75	48	49
19	78	78	52	53

The paragraphs below provide examples which may cause over or under estimating of attainment levels :-

Sources for under-estimates of attainment levels

- Mis-matches (records matched when they should not have been)
- Net inward migrants with prior attainment that is not counted
- Death of young people who may have gone on to achieve levels 1-3
- Attainment in England not included for those studying at both Welsh and English institutions.

Sources for over-estimates of attainment levels

- Under-matching (records not matched when they should have been)
- Net outward migration or death of young people who have already achieved levels 1-3

Level 1 attainment

Previous versions of this Release have additionally included Level 1 attainment. However, the methodology has not proved suitable to publish further results in this update. Possible reasons for this are the small margins of those not achieving level 1 (currently around 6 per cent at age 15), alongside the process of matching learners across different datasets and the potential for mis-matches, and the cohort denominator. Whether there are other issues that have contributed to this, will be explored as the 2013/14 update of this Release is prepared later this year.

Quality assurance of the results

Table 11 shows comparisons of matched academic data against pupil exam results (the latest of these releases is at <http://gov.wales/statistics-and-research/examination-results/?lang=en>) at age 15. These provide us with a baseline against which to assess the quality of the matched data and the table shows small percentage difference between the 2 sets of results. These are only slight differences, and reflect that the two are separate exercises with different purposes, and also reflect slight differences in cohort, the matched data uses the cohort at age 14, and the Key Stage 4 data age 15. **The figures published in the statistical release on examination (Key Stage 4) performance are the authoritative and most accurate estimates of secondary school performance.**

Table 11: Comparison of matched academic data against published KS4 results for 15 year olds

Level 2

Academic year	Matched data	Published Key Stage 4 results	Percentage difference
2002/03	49	51	-2
2003/04	51	51	-1
2004/05	52	52	-0
2005/06	53	54	-1
2006/07	55	55	-0
2007/08	58	58	-0
2008/09	60	61	-0
2009/10	63	64	-0
2010/11	67	67	-0
2011/12	72	73	-1
2012/13	77	78	-1

Comparisons with other data sources

The Department for Education in England produce a release based on a similar process of matching data from across the education administrative datasets. However there are differences in the detail of the methodology which mean that direct comparisons are not possible e.g.,

- Differences in how some qualifications are counted as contributing to the level 2/level 3 thresholds.
- Attainment levels for Wales use age at the start of the academic year while levels for England use age at the end of the academic year. For example, attainment at age 19 in Wales is equivalent to attainment at age 20 in England.

Following the Wolf Review of Vocational Education in England, GCSE reform in England and other changes introduced by the Department for Education in England, data on Key Stage 4 attainment in England and Wales are no longer on a comparable basis. In Wales, the review of qualifications will be in effect from the academic year 2015/16. This means that the way we will calculate our performance measures will change. This will also have an impact on comparability over time and will further limit our ability to compare educational attainment in Wales with the rest of the UK.

Table 12 shows comparisons of attainment for 19 year olds in Wales against qualification levels from the Annual Population Survey. A 3 year average is used for the Annual Population Survey data due to small sample sizes when looking at single year of age.

Table 12: Comparison of matched data against the Annual Population Survey for 19 year olds

	Matched data: 19 in 2012/13	19 year olds from the APS (2011-13 average)	Difference
Level 2	82.4	81.8	0.6
Level 3	53.4	59.5	-6.0



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