

Teacher workforce planning 2016

The teacher workforce planning model estimates future student intake numbers by rolling forward recent patterns in census and other data and is based on a set of assumptions. Other assumptions would result in different estimates.

1. Model Inputs

1.1. Pupil projections

Pupil Projections, 2017-2020 (2015-based)



The primary school roll has been rising over the last five years but is set to stabilise from 2017 onwards. At secondary, however, the pupil roll is set to increase for the first time in 15 years in 2018. This will be largely due to the increased primary roll graduating onto secondary school and increases in staying on rates (both S4-S5 and S5-S6) in recent years.

Staying-on rates of secondary pupils, 2008 – 2016

	All pupils	
	S3-S5	S3-S6
2008	76.6%	44.6%
2009	79.7%	49.2%
2010	81.8%	53.3%
2011	83.4%	55.6%
2012	84.9%	58.4%
2013	86.1%	60.4%
2014	87.2%	61.7%
2015	87.7%	62.7%
2016	87.3%	62.6%

1.2. Pupil Census

The 2016 Pupil Census showed an increase of around 5,500 primary pupils and a decrease of around 1,000 secondary pupils, compared to 2015. As described above, these trends are expected to change from 2018.

1.3. Teacher Census

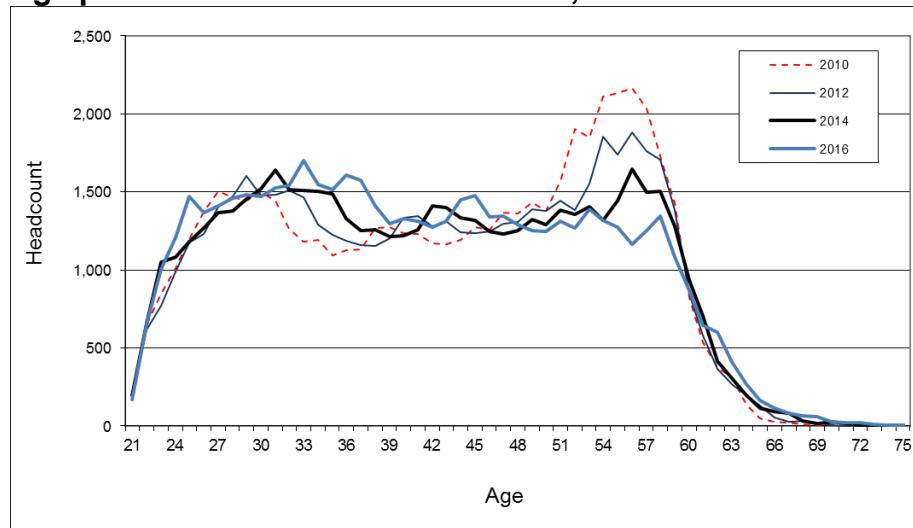
The 2016 Teacher Census reported an increase in primary teachers of 495 FTE and a decrease in secondary teachers of 102 FTE. There was also small decreases in the number of special school teachers (-42), centrally employed (-44) and early learning and childcare teachers (-53).

Teacher Census figures include 160 Scottish Attainment Challenge funded posts. This demand for teachers in the sector is accounted for in this year's workforce planning process, as vacant posts due to SAC demands will have appeared in the vacancy figures which have been accounted for in the statistical model.

1.4. Age profiles of teachers

The 2016 Teacher Census data shows that the age profile of teachers has changed much over recent years. The prominent peak in the fifties, as seen in 2010, no longer exists and there is now a peak in the mid-thirties.

Age profile of school based teachers, 2010 to 2016



1.5. Working patterns

The percentage of teachers working part-time has been fluctuating slightly over the last nine years and increased by 1.2 percentage points from 21.2% in 2015 to 22.4% in 2016, the highest rate over this period.

Number of teachers (headcount) by mode of working, all sectors, 2010-2016

	Full-time	Part-time	Total headcount ⁽¹⁾	Part-time (%)
2010 ⁽¹⁾	43,660	10,767	54,427	19.8
2011 ⁽¹⁾	42,572	10,701	53,273	20.1
2012 ⁽¹⁾	42,497	10,568	53,065	19.9
2013	42,472	10,427	52,899	19.7
2014 ⁽³⁾	41,934	10,866	52,800	20.6
2015	41,884	11,256	53,140	21.2
2016				
Primary	19,770	7,263	27,033	26.9
Secondary	20,345	4,299	24,644	17.4
Special	1,575	528	2,103	25.1
Total	41,701	12,003	53,704	22.4

(1) Teachers are counted as full-time if their total FTE across all schools where they teach is greater or equal to one.

(2) Data on early learning and childcare, primary and total teachers along with associated pupil teacher ratios for 2010, 2011, 2012 were revised in 2013 to remove teachers who were double counted as a result of working in both sectors.

(3) 2014 Teacher figures were amended in February and December 2015. See background notes.

Excludes centrally employed and early learning and childcare teachers.

1.6. Vacancy data

The local authority vacancy collection in September showed that there were 274 pre-school/primary and 411 secondary full-time and part-time permanent vacancies as at 21st September 2016 (excluding head teachers and deputy head teachers).

The target student intake figures have been increased in line with these figures (accounting for drop out etc) on a one year basis for primary and a phased, more manageable, three year basis for secondary.

Increasing target student intakes is not a guarantee that vacancies will be filled.

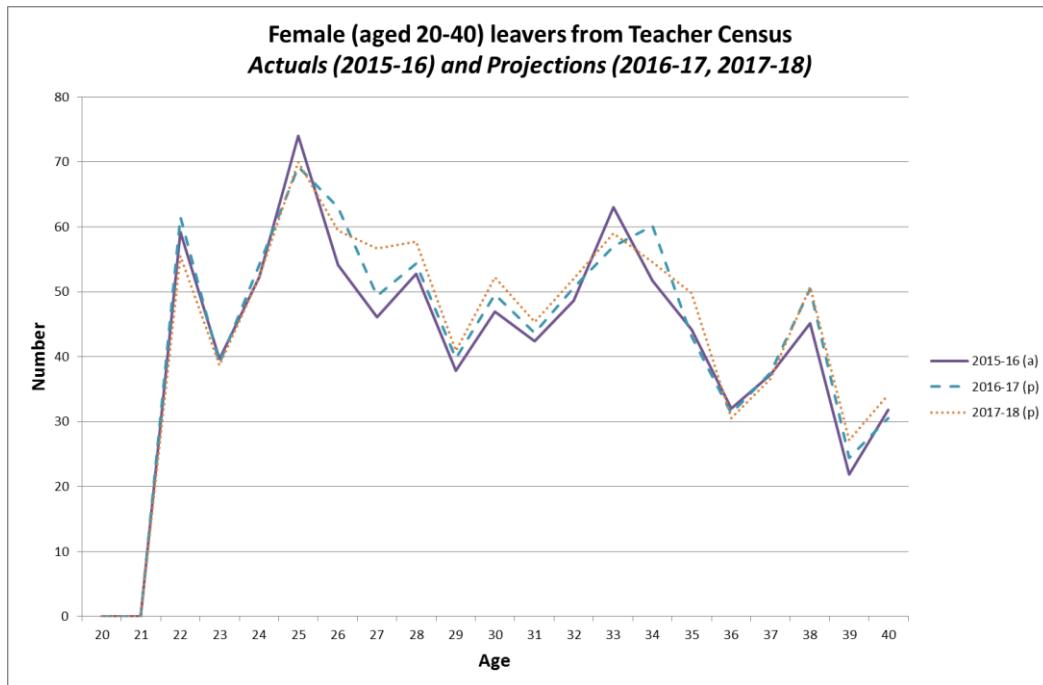
2. Assumptions

2.1. Leaver rates

Leaver rates are based on teachers in permanent employment only, as these are more stable and a more reliable measure of churn. Leavers include career breaks, retirements, teachers on maternity leave and any other long term or permanent move away from teaching. The percentage of permanent teachers "leaving" decreased from 7.4% in 2015 to 6.4% in 2016. Leaver rates for female teachers between the ages of 30-40 are broadly similar to 2015.

2.1.1. Maternity leave

The chart below shows the actual number of female leavers (aged 20-40) between 2015 and 2016, and the estimated future number of female leavers, on the basis that recent trends are forecast to continue.



2.2. Returner rates

Returner rates are also based on teachers in permanent employment. The average of the last three years figures in primary appeared to be skewed due to a higher than normal number between 2014 and 2015. Rather than assume that this high rate of returners would continue in future years, the previous approach of using 500 has been used. This approach errs on the side of caution rather than roll-forward possibly high returner rates and subsequently underestimate need.

The average of the last three years figures has been used for the Secondary sector (504).

2.3. Supply pool

The model accounts for the need of a pool of supply teachers and increases the student intake figure by 8% for this purpose.

Student intake figures have also been estimated based on a rate of 10% and 12%:

- Increasing supply pool from 8% to 10% would require an additional 30 primary and 35 secondary PGDE students
- Increasing supply pool from 8% to 12% would require an additional 60 primary and 70 secondary PGDE students

2.4. PTRs

The model is based on the assumption of maintaining pupil teacher ratios, therefore it projects future teacher requirements in line with pupil projections on the basis of current PTRs.

The 2016 pupil and teacher census results show that the primary sector PTR has improved slightly from 16.7 in 2015 to 16.6 in 2016, and the secondary PTR remained the same as 2015 at 12.2.

2.5 Retention rates

Retention rates (ITE students who go on to the Teacher Induction Scheme) vary between routes. Retention rates for Primary BEd and PGDE courses are around 75% and 85% respectively. Rates for Secondary courses are around 80% (BEd) and 90% (PGDE).

2.6 Post-probationer employment rates

The 2016 Teacher Census indicates that there has been an increase in the proportion of post-probationers in employment (permanent or temporary, full time or part-time). The figure has risen from 66% in 2011 to 87% in 2016, with the largest increase in the proportion of post-probationers with full-time permanent contracts (up from 13% in 2010 to 55% in 2016).

3. Model Results

The combination of the primary school pupil roll stabilising and the recent increase in primary teachers means that the model projects a lower requirement for new student teachers. However, accounting for the pre-school and primary vacancies, the model projects that 2017 intakes should be kept at a similar level to 2016.

At secondary, the peak in school aged children over the past five years can be seen to be shifting from primary to secondary school. This combined with a decreases in the number of secondary school teachers has led to estimated projected need for an increase in secondary PDGE intake figures. There is therefore less scope build in all of the secondary vacancies in one year: these have been phased in over a three year period.

Primary and Secondary Student Intake Projections, 2017-2021

PRI vacancies accounted for in 2017 intake only
 SEC vacancies accounted for across 2017-2019 intake

Entry Year	Primary		Secondary		
	BEd	PGDE	BEd	PGDE	Combined
2016 target intake	710	1,235	187	1,355	210
2016 actual intake	804	1,248	154	1,198	187
2017	700	1,000	185	1,750	195
2018	700	450	185	1,800	195
2019	700	450	185	1,600	195
2020	700	500	185	1,350	195
2021	700	400	185	1,450	195

Note: Primary estimates do not include any additional requirement for ELC sector.

The model outputs have been rounded to the nearest fifty.

Primary and Secondary Teacher Projections, 2016-2022

Primary	Projected pupils (pre-school, primary and half of special)	Demand for teachers at start of academic year	Change in demand from previous year	Leavers during previous year	Vacancies arising during previous year	Teachers returning to profession in previous year	Projected Deficit at start of year
2016	490,958	26,330					
2017	491,238	26,469	139	1,694	1,756	500	1,256
2018	491,712	26,530	62	1,635	1,576	500	1,350*
2019	489,883	26,472	-59	1,600	1,439	500	939
2020	486,219	26,311	-161	1,566	1,441	500	941
2021	483,791	26,186	-125	1,543	1,383	500	883
2022	480,945	26,026	-159	1,523	1,308	500	808
2023	476,935	25,811	-215	1,499	1,506	500	1,006

*includes 274 vacancies

Secondary	Projected pupils (secondary and half of special)	Demand for teachers at start of academic year	Change in demand from previous year	Leavers during previous year	Vacancies arising during previous year	Teachers returning to profession in previous year	Projected Deficit at start of year
2016	284,331	24,685					
2017	285,641	24,783	98	1,510	1,749	504	1,245
2018	289,106	25,022	239	1,482	1,912	504	1,545**
2019	295,399	25,453	431	1,457	1,961	504	1,593**
2020	302,828	25,956	503	1,452	1,797	504	1,430**
2021	307,925	26,301	345	1,439	1,758	504	1,254
2022	312,655	26,620	319	1,424	1,803	504	1,298
2023	318,290	26,999	379	1,411	1,413	504	908

** includes 137 (411/3) vacancies

Teacher workforce planning timeline

Year 1				Year 2								Year 3															
S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Census Day				Census publication.					PGDE apps			PGDE intake							Graduate			Start teaching					

Teacher workforce planning model

