Teacher workforce planning 2017
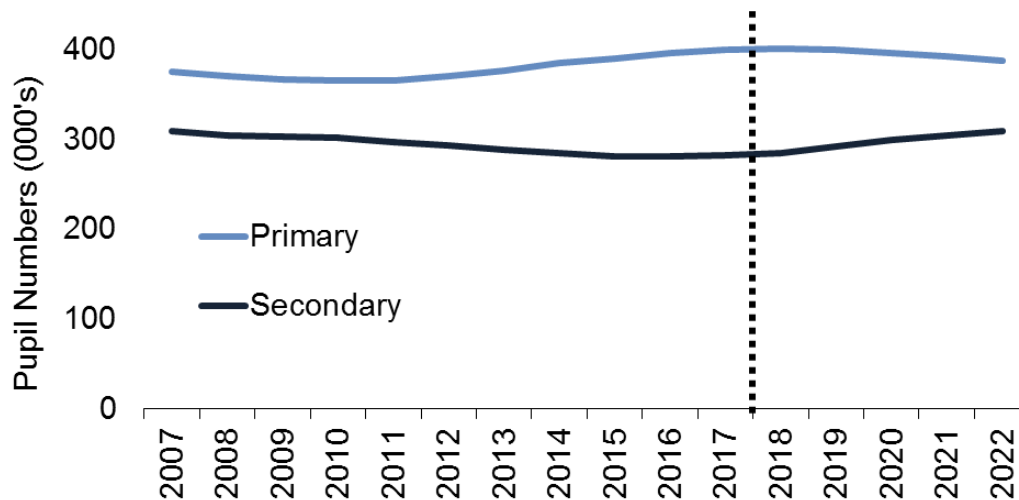
The teacher workforce planning model estimates future student intake numbers by rolling forward recent patterns in census and other data and is based on a set of assumptions. Other assumptions would result in different estimates.

1. Model Inputs

1.1. Pupil projections

Pupil Projections, 2017-2022

The primary school roll has been rising over the last five years but is set to stabilise from 2018 onwards. At secondary, however, the pupil roll increased in 2017 for the first time in 14 years. This was 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, 2009 – 2017

	All pupils	
	S3-S5	S3-S6
2009	79.7%	49.2%
2010	82.9%	53.3%
2011	83.4%	55.6%
2012	84.9%	58.3%
2013	86.1%	60.3%
2014	87.2%	61.7%
2015	87.7%	62.7%
2016	87.3%	62.6%
2017	87.4%	62.2%

1.2.   Pupil Census

The 2017 Pupil Census showed an increase of around 3,600 primary pupils and an increase of around 1,000 secondary pupils, compared to 2016.

1.3.   Teacher Census

The 2017 Teacher Census reported an increase in primary teachers of 556 FTE and an increase in secondary teachers of 193 FTE. There was also small decreases in the number of special school teachers (-33), centrally employed (-110) and early learning and childcare teachers (-64).

Teacher Census figures include 666 Attainment Scotland Fund (ASF) funded posts. This demand for teachers in the sector is accounted for in this year's workforce planning process, as vacant posts due to ASF demands will have appeared in the vacancy figures which have been accounted for in the statistical model.

1.4.   Age profiles of teachers

The 2017 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 2008, no longer exists and there is now a peak in the mid-thirties.

Age profile of school based teachers, 2010 to 2017
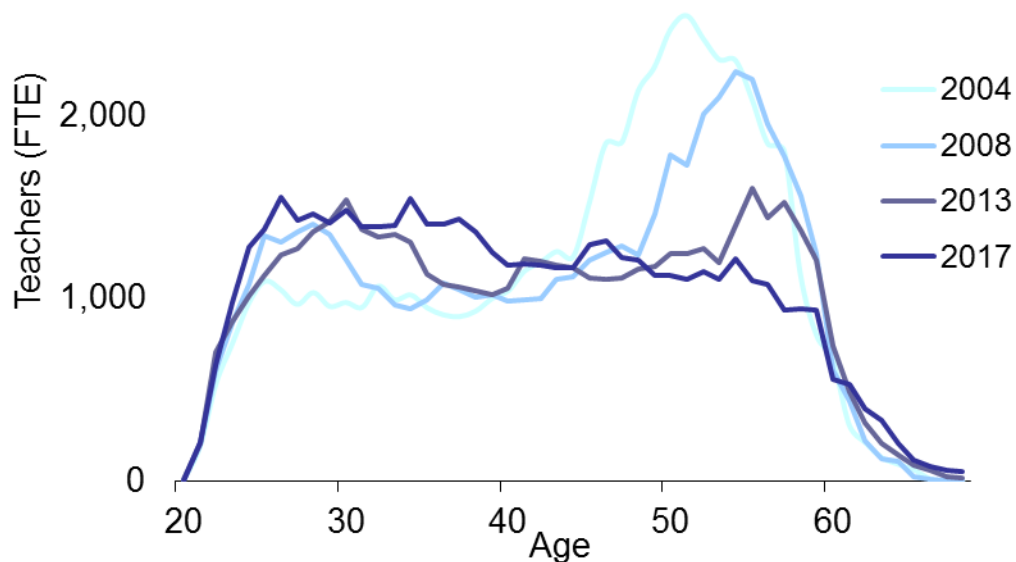
1.5.   Working patterns

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. (Data on working patterns is not yet available for 2017)

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 309 pre-school/primary and 507 secondary full-time and part-time permanent vacancies as at 20th September 2017 (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 6.4% in 2016 to 5.5% in 2017. Leaver rates for female teachers between the ages of 30-40 are broadly similar to 2016.

2.1.1. Maternity leave

The chart below shows the actual number of female leavers (aged 20-40) between 2016 and 2017, and the estimated future number of female leavers, on the basis that recent trends are forecast to continue.
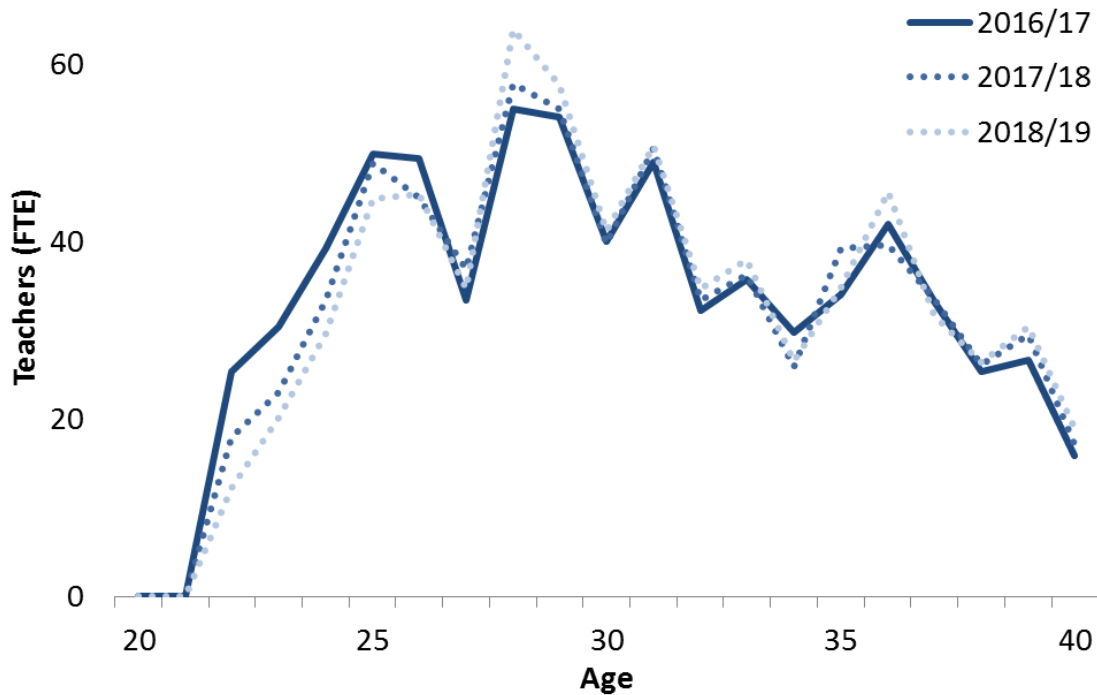
2.2. Returner rates

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 2015 and 2016. 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 Secondary (452).

2.3. Supply pool

The model accounts for the need of a pool of supply teachers and increases the student intake figure by 12% for this purpose. This is in line with the figure used last year.

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 2017 pupil and teacher census results show that the primary sector PTR has improved from 16.6 in 2016 to 16.4 in 2017, 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 2017 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 88% in 2017, with the largest increase in the proportion of post-probationers with full-time permanent contracts (up from 13% in 2010 to 57% in 2017).

3. Model Results

The combination of the primary school pupil roll falling and the recent increase in primary teachers means that the model projects a lower requirement for new student teachers. Accounting for the pre-school and primary vacancies, the model projects that the 2018 intake target should be cut.

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 is countered by a recent increase in the number of secondary school teachers. Hence the model suggests the intake target remains the same.

Vacancies for secondary have been smoothed across 2018, 2019 and 2020.

Primary and Secondary Student Intake Projections, 2018-2022

PRI vacancies accounted for in 2018 intake only
SEC vacancies accounted for across 2018-2020 intake

Entry Year	Primary		Secondary		
	BEd	**PGDE**	**BEd**	**PGDE**	**Combined**
2017 target intake	710	1,186	187	1,750	225
2017 actual intake	774	1,259	170	1,226	228
2018	700	700	185	1,700	195
2019	700	300	185	1,650	195
2020	700	250	185	1,450	195
2021	700	250	185	900	195
2022	700	500	185	700	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, 2017-2023

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
2017	493,430	26,443					
2018	491,651	26,528	86	1,435	1,368	500	868
2019	489,113	26,461	-67	1,404	1,232	500	1,042*
2020	484,474	26,289	-172	1,407	1,284	500	784
2021	481,038	26,167	-122	1,382	1,225	500	725
2022	476,928	26,010	-157	1,365	1,145	500	645
2023	473,749	25,790	-220	1,340	1,343	500	843

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	24,783					
2017	285,329	25,022	239	1,320	1,751	452	1,298
2018	288,882	25,453	431	1,298	1,802	452	1,518**
2019	295,569	25,956	503	1,292	1,635	452	1,352**
2020	302,978	26,300	343	1,264	1,582	452	1,299**
2021	307,813	26,618	318	1,262	1,639	452	1,187
2022	312,423	26,995	377	1,248	1,248	452	796
2023	315,634	26,995	0	1,227	1,115	452	663

**** includes 169 (507/3) 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. TWPAG	PGDE apps								**PGDE intake**													Graduate		Start teaching			

Teacher workforce planning model