Glasgow City Council

**Education, Skills and Early Years
City Policy Committee**

Report by Executive Director of Education

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ATTAINMENT : NATIONAL QUALIFICATIONS 2017/18

Purpose of Report:

To provide the Committee with information on the performance of pupils in national qualifications in the senior phase.

Recommendations:

The Committee is asked to consider the content of the report, note the positive outcomes for young people across the city and the focus on improving further.

Ward No(s):   Citywide: ✓

Local member(s) advised: Yes ☐ No ☐   consulted: Yes ☐ No ☐

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1.   Background

1.1   Insight is the analytical tool available for all schools across Scotland. A number of new indicators have been included which allows attainment data at school level and at city level to be viewed in different ways.

1.2   Most of the data presented on Insight is single year data. Further work on the presentation of the data is needed to be able to show year-on-year progression which is critical for performance analysis.

1.3   This report has used data taken from Insight, but presented in ways which show year-on-year progression.

1.4   The analysis offered in the paper has been based on cumulative data by the end of S5, and by the end of S6, over the last three years. Data on S4 has not been included at city level because some schools have chosen not to present groups of young people for national qualifications in S4 and instead focus on qualifications by the end of S5. One school does not present the entire year group for national qualifications in S4. This affects the meaningful relevance of the data as the percentages are based on the total number of pupils in the year group. Analysis of individual school's performance has taken place through Heads of Service meeting with groups of headteachers through the Local Improvement Groups.

1.5   Insight allows the comparison of the performance of the authority or individual schools with their virtual comparator. Virtual comparators are created using data from pupils with similar characteristics such as SIMD[1] postcodes, additional support needs and gender.

1.6   The awards are gathered in terms of SCQF[2] levels, Appendix 1 shows the full SCQF framework.


Breadth and Depth Indicator

2   By the end of S5

2.1   This indicator looks at the number of awards that young people have achieved by the end of a year. Insight allows you to compare performance with the local authority's virtual comparator authority as well as against national figures. It also allows the user to use a range of filters such as gender, EAL, additional support needs or minority ethnic.

2.2   The data in Insight is pre-appeal for 2018 and includes all awards including those achieved in other schools, colleges and the Advanced Higher hub.

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[1] Scottish Index of Multiple Deprivation
[2] Scottish Credit and Qualifications Framework, further information available on http://scqf.org.uk/

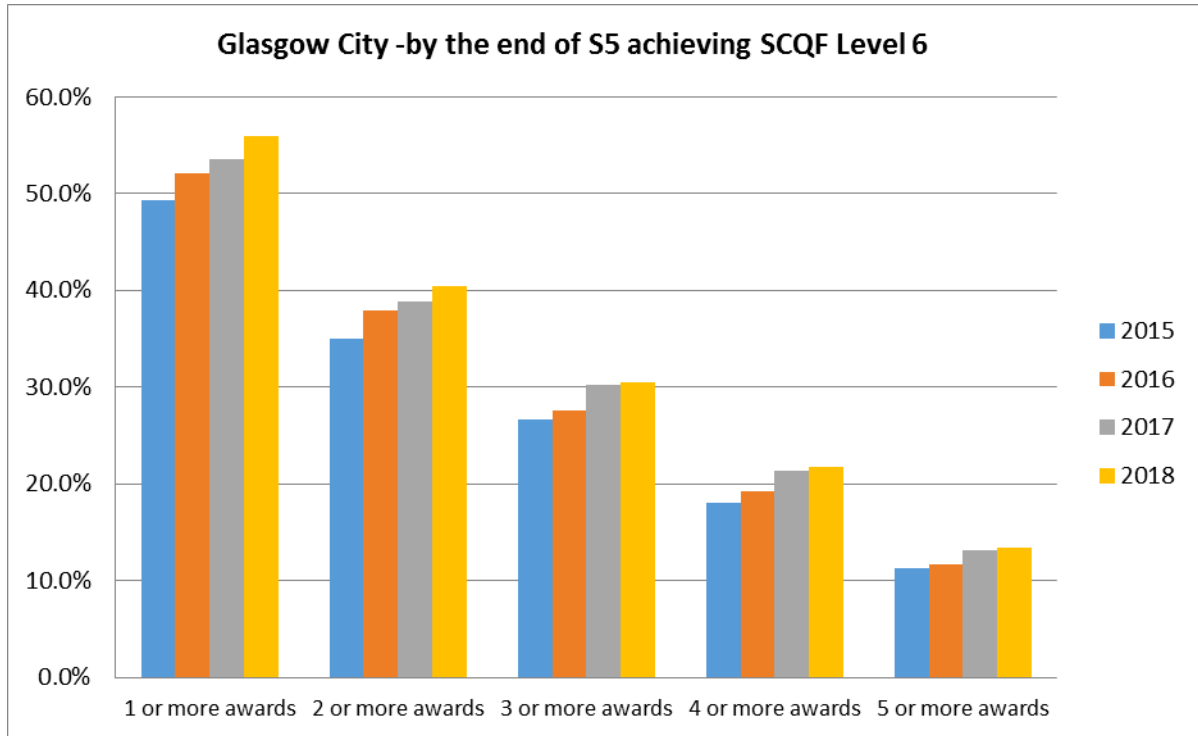Glasgow City - By the end of S5 achieving SCQF Level 5
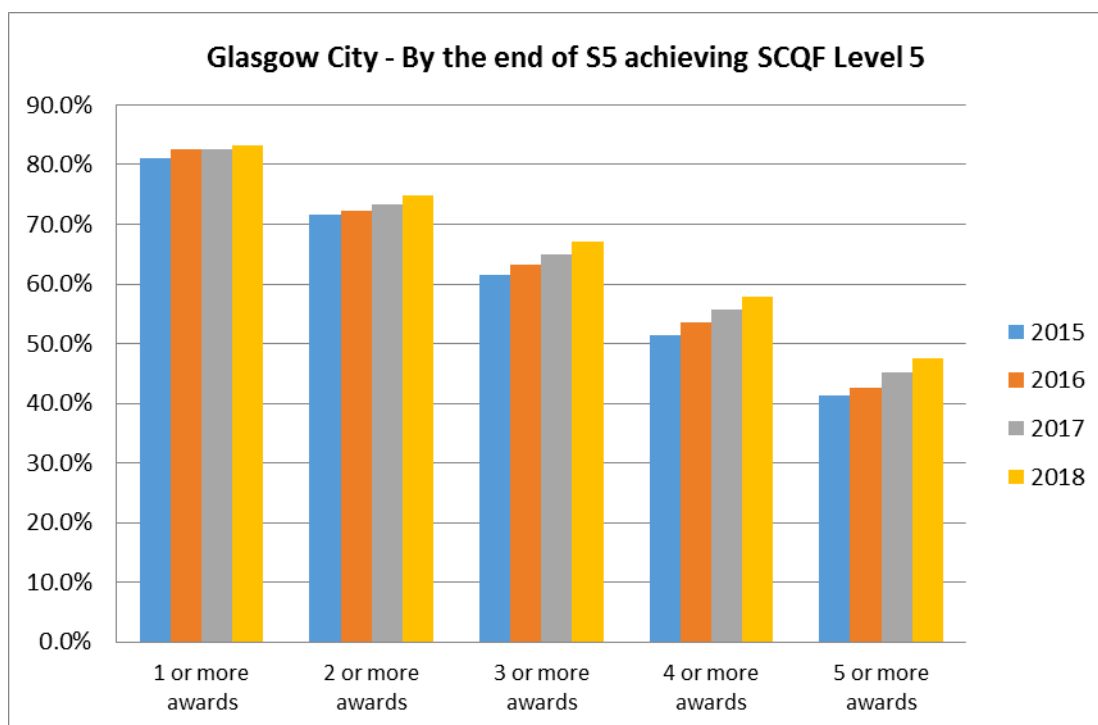
Data from 2018 is pre-appeal, data from 2015 to 2017 is post-appeal.

SCQF level 5 by the end of S5 Glasgow and Virtual Comparator	2015	2016	2017	2018	2015 VC	2016 VC	2017 VC	2018 VC
1 or more awards	80.2%	81.8%	82.5%	83.2%	74.2%	75.8%	77.9%	78.3%
2 or more awards	68.5%	69.7%	73.3%	74.8%	63.1%	65.8%	68.9%	69.6%
3 or more awards	59.6%	60.4%	64.9%	67.1%	54.3%	57.3%	60.9%	62.0%
4 or more awards	49.9%	51.4%	55.8%	57.8%	46.0%	49.0%	52.8%	54.3%
5 or more awards	42.4%	43.4%	45.2%	47.6%	37.3%	39.9%	44.3%	45.3%

SCQF level 5 by the end of S5 National	2015	2016	2017	2018
1 or more awards	84.6%	85.3%	85.8%	86.5%
2 or more awards	77.0%	78.1%	79.0%	79.9%
3 or more awards	69.9%	71.5%	72.7%	73.8%
4 or more awards	62.4%	64.5%	65.7%	67.0%
5 or more awards	53.5%	55.6%	57.2%	58.6%

2.3 As can be seen from the tables above, Glasgow performs consistently better than its virtual comparator but remains below the national figures. It can also be seen that Glasgow is closing the gap with the national figures.

2.4 In 2007, the percentage achieving five or more awards at SCQF level 5 by the end of S5 was 33% which represents a 44% increase.

Glasgow City -by the end of S5 achieving SCQF Level 6

Data from 2018 is pre-appeal, data from 2015 to 2017 is post-appeal.

SCQF level 6 by the end of S5 Glasgow and Virtual Comparator	2015	2016	2017	2018	2015 VC	2016 VC	2017 VC	2018 VC
1 or more awards	49.4%	52.1%	53.5%	55.9%	41.7%	43.7%	46.7%	47.3%
2 or more awards	35.0%	38.0%	38.8%	40.5%	30.3%	32.6%	35.4%	36.3%
3 or more awards	26.7%	27.6%	30.2%	30.5%	22.7%	24.4%	26.7%	27.9%
4 or more awards	18.0%	19.3%	21.1%	21.8%	15.8%	17.2%	19.2%	19.6%
5 or more awards	11.3%	11.7%	12.9%	13.4%	9.3%	10.2%	11.6%	12.0%

SCQF level 6 by the end of S5 National	2015	2016	2017	2018
1 or more awards	57.5%	59.1%	59.7%	60.4%
2 or more awards	45.9%	48.1%	48.5%	49.5%
3 or more awards	37.0%	38.8%	39.5%	40.4%
4 or more awards	27.8%	29.2%	30.1%	30.7%
5 or more awards	18.0%	18.8%	19.4%	20.1%

2.5 By the end of S5, Glasgow has continued to improve and performs consistently better than its virtual comparator authority. While the figures remain below the national figures the gap has closed across the four years.

2.6   In 2007, only 28% achieved one or more Higher – in 2018 the figure was 55.9% representing an increase of 100%. In 2007, only 5% achieved five or more Highers – in 2018 the figure was 13.4% which represents an increase of 168%. Nationally, in the same period the increase is 55% for one or more Higher and 101% for five or more Highers. Therefore, Glasgow is improving at a faster rate than nationally.

3   By the end of S6
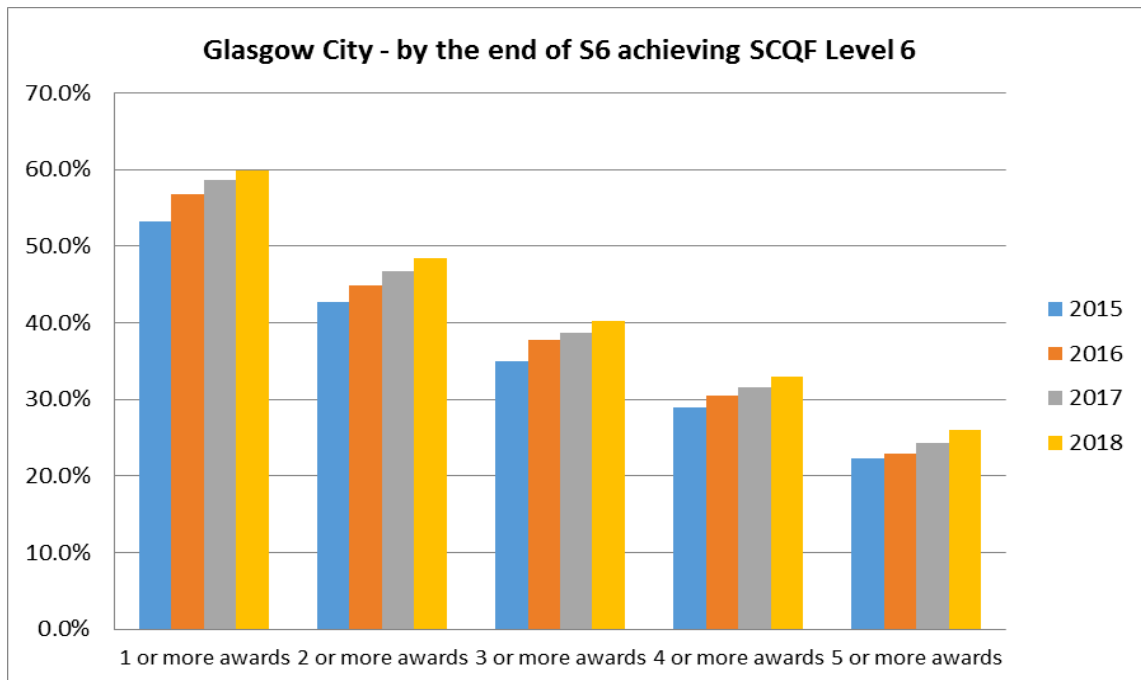
SCQF level 6 by the end of S6 Glasgow and Virtual Comparator	2015	2016	2017	2015 VC	2016 VC	2017 VC
1 or more awards	53.2%	56.7%	58.7%	42.6%	47.1%	48.8%
2 or more awards	42.7%	44.8%	46.7%	34.0%	37.8%	39.2%
3 or more awards	35.0%	37.8%	38.6%	27.7%	31.1%	32.6%
4 or more awards	28.9%	30.5%	31.4%	22.8%	25.6%	26.7%
5 or more awards	22.3%	23.0%	24.3%	17.7%	19.8%	20.7%

SCQF level 6 by the end of S6 National	2015	2016	2017
1 or more awards	59.3%	62.6%	63.4%
2 or more awards	50.7%	53.6%	54.7%
3 or more awards	44.0%	46.8%	47.7%
4 or more awards	37.7%	40.1%	40.8%
5 or more awards	30.8%	32.6%	33.5%

3.1 By the end of S6, Glasgow continues to perform better than its virtual comparator for Higher awards and below the national figure. The gap has closed with the national figure for one or more award but not for the other measures.

3.2 In 2007, by the end of S6, 18% achieved three or more Highers, in 2017 it was 38.6% which represents an increase of 114%. Nationally, in the same period the increase is 61%.
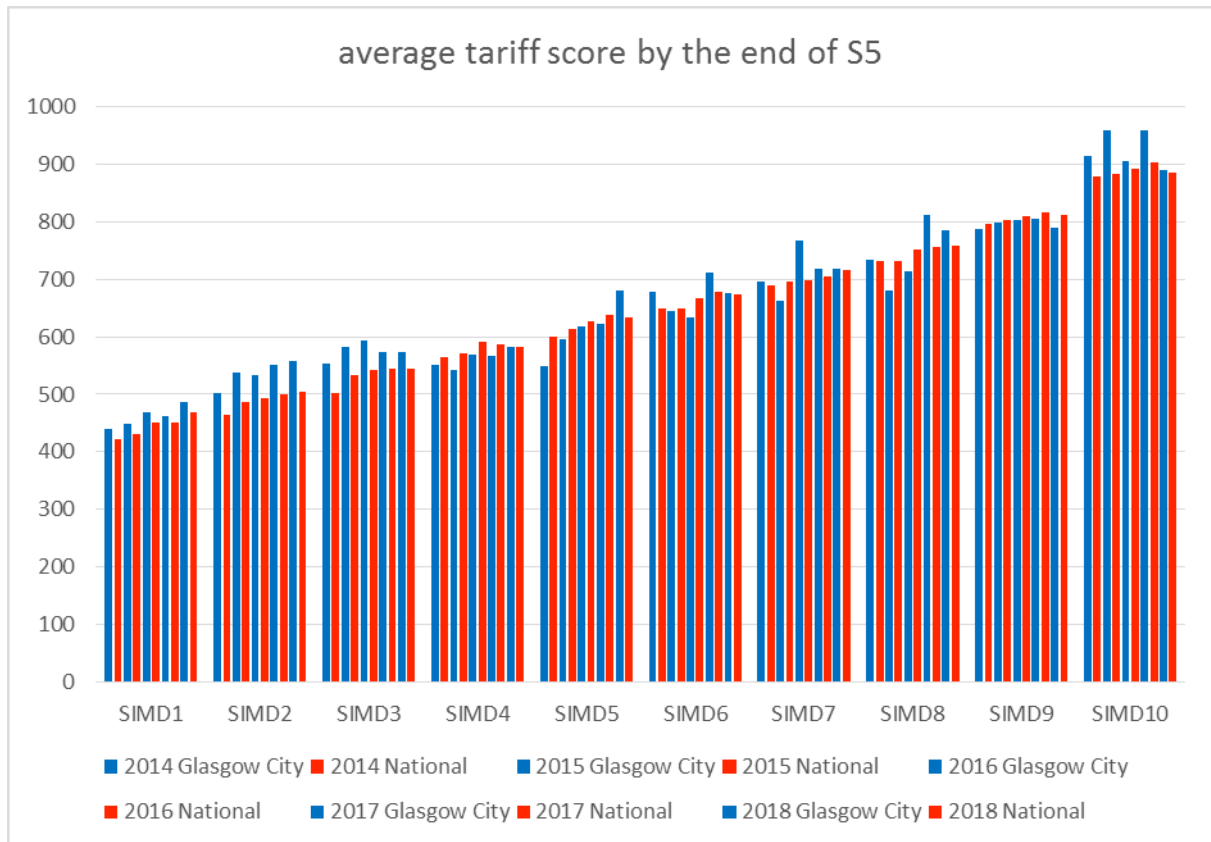
Attainment versus deprivation

4   By the end of S5

4.1 This statistic allows us to take into account pupils' postcodes and allows us to consider the impact of deprivation on attainment. The Scottish Index of Multiple Deprivation (SIMD) is used. The attainment measure being used is 'average tariff score'.

4.2 Glasgow has the highest percentage of children living in poverty in Scotland and the SIMD profile of the city is quite different from other local authorities, with notably high percentages living in SIMD1 (10% most deprived postcodes) compared to SIMD10 (10% least deprived postcodes).

4.3 The graph below shows that around 40% of S5 pupils in Glasgow live in the 10% most deprived postcodes with only 3% living in the 10% least deprived postcodes.
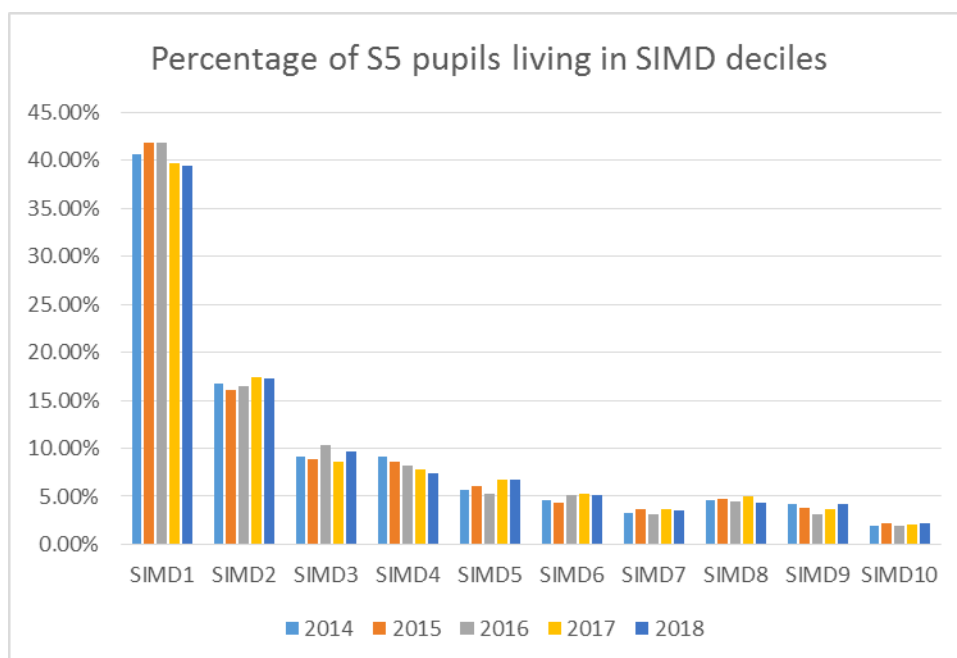
4.4 The graph below shows that attainment continues to be linked to deprivation with pupils in SIMD10 having a higher average tariff score than those in SIMD1.

Positively, for SIMD1 and SIMD2, which represents over 55% of S5 pupils the average tariff score is increasing overall.


average tariff score by the end of S5

Legend: 2014 Glasgow City, 2014 National, 2015 Glasgow City, 2015 National, 2016 Glasgow City, 2016 National, 2017 Glasgow City, 2017 National, 2018 Glasgow City, 2018 National

4.5 The above graph compares Glasgow's performance to the national one taking into account deprivation. It can be seen that for SIMD1, SIMD2, SIMD3 that Glasgow consistently performs better than the national figures.

5   By the end of S6

5.1 The graph below shows that similar to S5, more than 40% of S6 pupils live in the 10% most deprived postcodes. Positively, the proportion is increasing which shows that more young people from the most deprived postcodes are recognising the value of staying on at school to gain better qualifications.

Percentage of S6 cohort in SIMD deciles
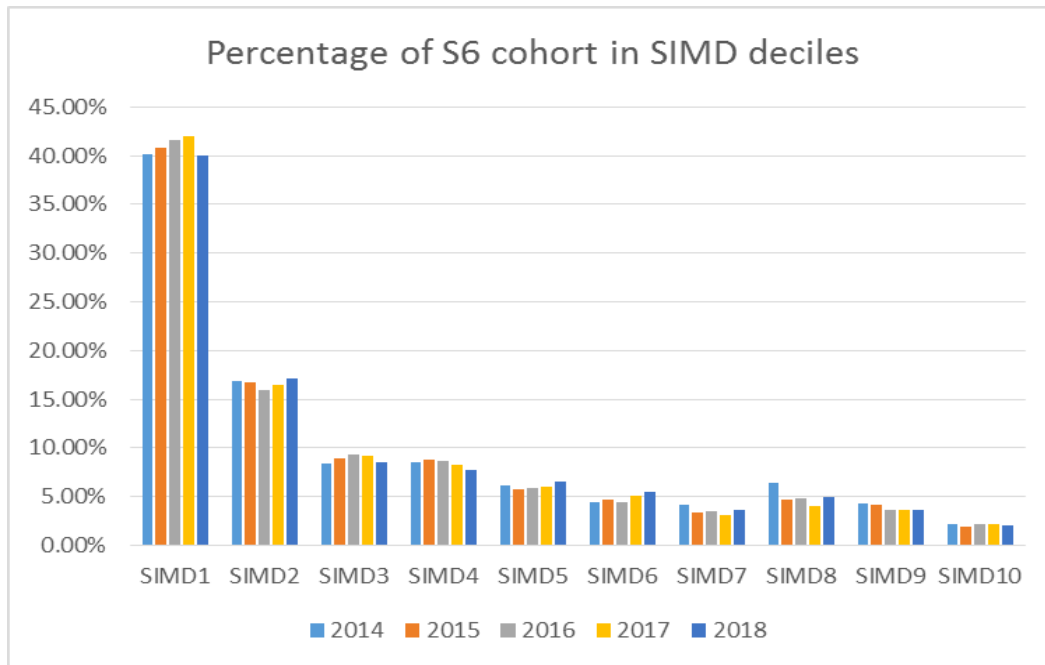
5.2 The graph below shows as similar pattern to S5. The average tariff score has continued to increase over the last five years for SIMD1, SIMD2, SIMD3 and SIMD10 and for these deciles which contain around 70% of S6 pupils Glasgow performs better than the national average tariff score.

**Average tariff score by the end of S6**
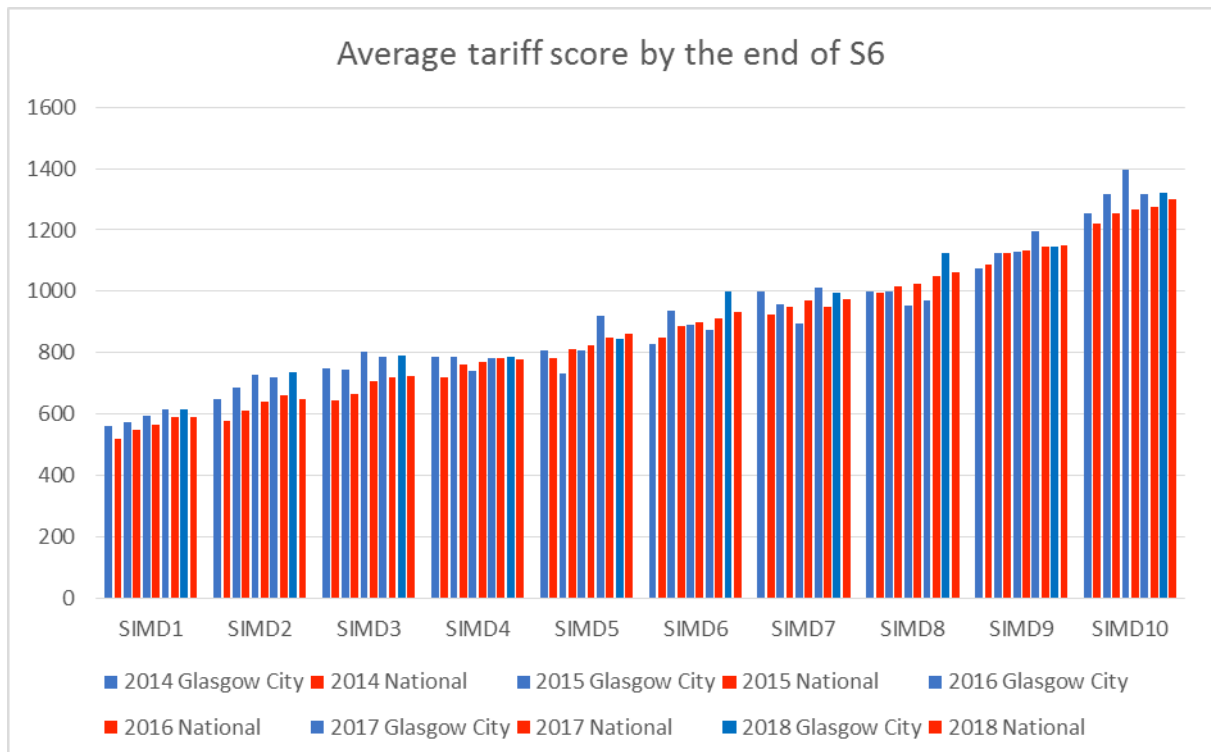
6   Breadth and depth attainment versus deprivation

6.1   The Insight tool allows comparisons to be made by using a filter on the least deprived 30%, the most deprived 30% and the middle 40%. As the focus nationally and locally is on closing the poverty-related attainment gap, the tables and graphs below consider Higher attainment by the end of S5 of the most deprived 30% and the least deprived 30%.

| Most deprived 30%	Higher by the end of S5					
	GCC	National	GCC	National	GCC	National
	2016	2016	2017	2017	2018	2018
1 or more	46.3%	42.3%	46.0%	43.1%	49.6%	44.7%
2 or more	31.3%	30.1%	30.6%	30.3%	33.5%	32.5%
3 or more	21.2%	21.4%	21.8%	21.7%	23.0%	23.6%
4 or more	14.1%	14.2%	14.7%	14.5%	15.2%	15.7%
5 or more	7.8%	7.5%	8.3%	8.0%	8.4%	8.7%
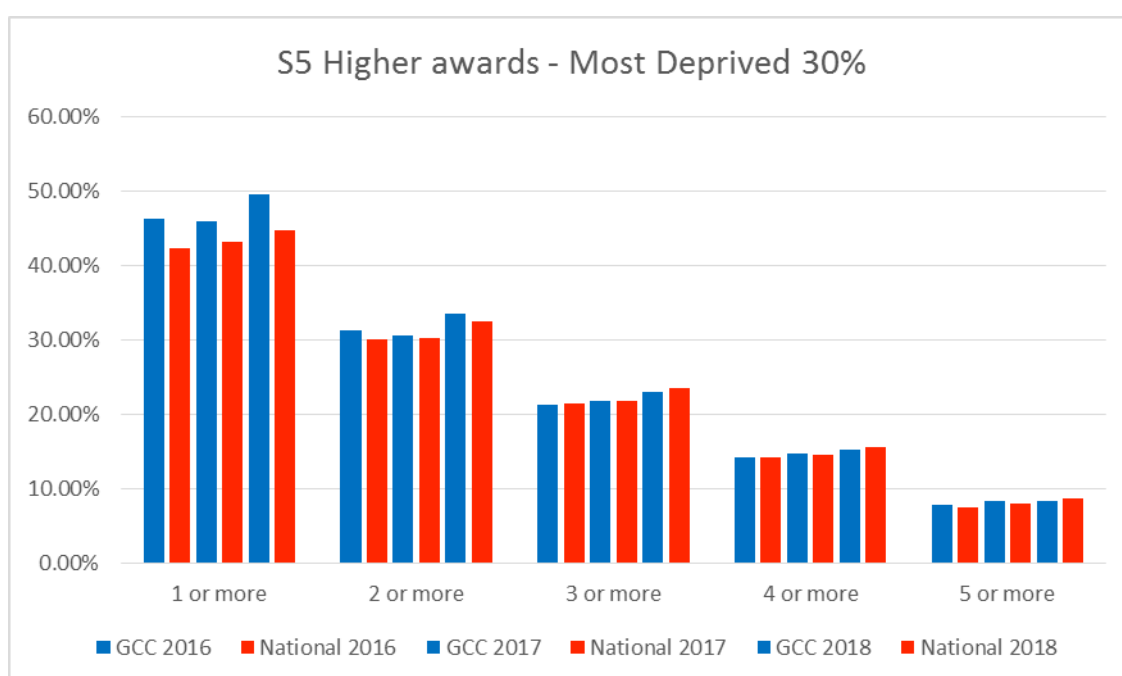
6.2   The table and graph show that Glasgow performs notably better than the national figure for one or more Higher. For three or more and five or more Highers, the figures are broadly in line with the national figures.

6.3   It is worth noting the numbers in each category. For 2018, there are 439 S5 pupils in the 30% least deprived category and 3033 S5 pupils in the 30% most deprived category. That is, equivalent to 11% of the S5 pupils in the least deprived 30% compared to 66% in the 30% most deprived.

Least deprived 30% — **Higher by the end of S5**

	GCC	National	GCC	National	GCC	National
	2016	2016	2017	2017	2018	2018
1 or more	75.06%	76.22%	80.12%	77.30%	77.30%	76.93%
2 or more	63.51%	66.89%	69.18%	68.19%	66.87%	68.00%
3 or more	54.50%	57.87%	62.23%	59.49%	58.90%	59.16%
4 or more	44.80%	47.02%	49.90%	48.71%	48.06%	48.55%
5 or more	32.56%	32.85%	35.19%	34.05%	34.76%	34.40%

S5 Higher awards - Least deprived 30%
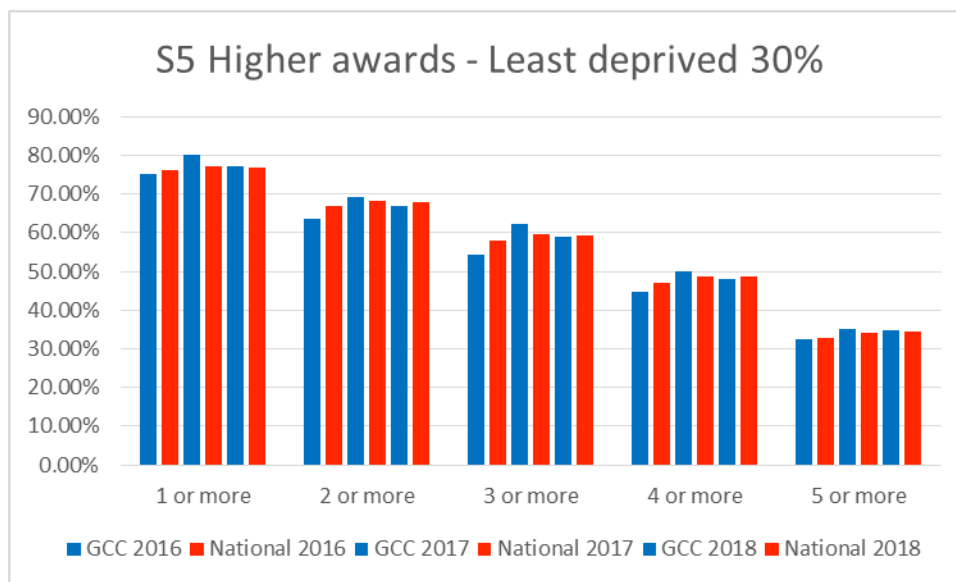
6.4 The table and graph above show that Glasgow performs broadly in line with that national figure for one or more, three or more and five or more Highers.

7 Policy and Resource Implications

Resource Implications:

Financial: Glasgow receives additional funding from the Scottish Attainment Fund as a Challenge Authority. Schools also receive Pupil equity Funding based on the numbers of children entitled to free school meals.

Legal: In line with the Standards in Scotland's Schools etc. Act 2000

Personnel: Additional staffing has been deployed in schools using the additional funding.

Procurement: Not applicable

Council Strategic Plan: Excellent and Inclusive Education

Equality Impacts:

Does the proposal support the Council's Equality Outcomes 2017-22	Yes, outcome 9 – barriers to participation in learning are reduced.
What are the potential equality impacts as a result of this report?	Limited impact

Sustainability Impacts:

Environmental:	Not applicable
Social:	If our young people achieve positive outcomes in their lives this will have a positive impact on the longer term social and community life of Glasgow.
Economic:	Young people who are better educated are able to contribute more positively to the growing economy of the city.
Privacy and Data Protection impacts:	Not applicable

8   Recommendations

8.1   The Committee is asked to consider the content of the report, note the positive outcomes for young people across the city and the focus on improving further.

Appendix 1

SCQF Levels	SQA Qualifications				Qualifications of Higher Education Institutions	Apprenticeships & SVQs
12					Doctoral Degree	Professional Apprenticeship
11					Masters Degree, Integrated Masters Degree, Post Graduate Diploma, Post Graduate Certificate	Graduate Apprenticeship Professional Apprenticeship SVQ
10					Honours Degree, Graduate Diploma, Graduate Certificate	Graduate Apprenticeship Professional Apprenticeship
9				Professional Development Award	Bachelors / Ordinary Degree, Graduate Diploma, Graduate Certificate	Graduate Apprenticeship Technical Apprenticeship SVQ
8		Higher National Diploma			Diploma Of Higher Education	Higher Apprenticeship Technical Apprenticeship SVQ
7	Advanced Higher, Awards, Scottish Baccalaureate	Higher National Certificate			Certificate Of Higher Education	Modern Apprenticeship SVQ
6	Higher, Awards, Skills for Work Higher					Modern Apprenticeship Foundation Apprenticeship SVQ
5	National 5, Awards, Skills for Work National 5					Modern Apprenticeship SVQ
4	National 4, Awards, Skills for Work National 4	National Certificate	National Progression Award			SVQ
3	National 3, Awards, Skills for Work National 3					
2	National 2, Awards					
1	National 1, Awards					

Appendix 2 From *Insight technical information*

Virtual Comparators

Insight allows schools to compare their performance to the performance of a virtual comparator. The virtual comparator is made up of pupils from schools in other local authorities who have similar characteristics to the pupils in your school. It allows you to see how the performance of your pupils compares to a similar group of pupils from across Scotland to help you undertake self-evaluation and improvement activities.

a) Methodology for leavers-based Virtual Comparators

For each pupil in the cohort of interest (e.g. S4 pupils in School A), 10 matching pupils are randomly selected without replacement from other local authorities based on the following characteristics:

- Gender

- Additional support needs:
  - No additional support needs
  - Additional support needs but spend 80% or more of their time in mainstream education
  - Additional support needs and spend less than 80% of their time in mainstream education

- Latest stage is defined as 'stage of leaving' for leavers and 'latest stage attained in current year' for August attainment. For leavers before 1st May in S5 (includes S4 leavers). After 1st May in S5, S6.

- Scottish Index of Multiple Deprivation vigintile.

This allows virtual comparators to be produced for the target cohort of interest. So, if school B has 20 school leavers all of which have the same characteristics, 200 different pupils with these same characteristics from schools in the other 31 local authorities will be selected to compare them to. The maximum cohort in a school for which a virtual comparator is produced is the senior phase (S4 to S6).

The leavers-based virtual comparator is created from all of the matched pupils meaning that it will have ten times as many pupils and that the characteristics of the virtual comparator will match its target group. Analysis revealed that four matches per target pupil would have been perfectly adequate but we have chosen to select ten matches for even greater precision.

The characteristics were selected due to their significance in explaining variation in the attainment and destinations of leavers. Independent advice concluded that these variables were highly statistically significant and that they seem to strike a reasonable balance between matching a pupil appropriately and not having so many variables that matching some individuals is hard to achieve. There are few instances of pupils having missing data for these characteristics. The most common characteristic to be missing is SIMD data zone (affecting less than 0.5% of records). Missing data zones are due to missing or invalid postcodes and in these cases, the data zone for the pupil's base centre is used as a proxy.

The latest stage is included even though it is a combination of an input and an output measure. For example, if a pupil does not stay on to S5 then they do not have the option of taking higher or advanced higher qualifications, so will have lower attainment. However by having lower attainment the pupil would be less likely to stay on. In addition, in some local authorities, college provision is widely available and preferred so many pupils leave at the end of S4 and continue their education at college instead of staying on to S5 and S6.

Note that filtering for characteristics which aren't used for Virtual Comparator matching (e.g. LAC) will still display the school filtered for that characteristic and the Virtual Comparator pupils which match those school pupils. However the Virtual Comparator pupils may not have the same LAC category.

Starting in the September 2017 update, Insight will use SIMD 2016 data as part of Virtual Comparator for the latest year of data (2017). Therefore this will start to be reflected as the measures in Insight are updated with the latest data. This means that for 2017 data included in the September update, the Virtual Comparator will be using SIMD 2016 as part of the matching process. No historic data will be re-calculated so all years prior to 2017 will continue to be based on SIMD 2012.

b) Methodology for stage-based Virtual Comparators

The virtual comparator for stage based measures is more complicated. When considering attainment within one stage (e.g. calculation stage = S5 and basis stage = S5), the VC will be based on 10 matches to each pupil in S5. For measures where

the calculation stage and basis stage are different (e.g. S6 based on S4) this is less straightforward. In defining the virtual comparator for these measures, consideration was given to whether the VC should be built from the matches for the pupils when they were in S4 or at their point of exit from school. Following consultation through the Statistics Working Group, it was felt that the leaver based measures already adequately capture a comparison at the point of exit. It was therefore agreed that these types of measure should be compared with the S4 virtual comparators to consider how both sets of pupils progress by the time of reaching S5 or S6. This means that the matched pupils can have left at different points in the senior phase when compared to your own pupils, offering a richer understanding of the situation in the school. However this also results in the situation where sometimes, within an SIMD decile, the number of candidates is not 10 times the number in the school. This happens because some pupils move between S4 and S6 and therefore change decile. As a result, whilst these pupils would have been matched to the same decile in S4, by the time we reach S6 some of their datazones and therefore deciles have changed. You will still find that the total number of VCs for the school is always 10 times the number of pupils.

c) Methodology where insufficient pupils match characteristics

For a very small number of pupils (most likely those with additional support needs that spend less than 80% of their time in mainstream education), we may run out of pupils to match to. Where this happens, we:

- Collapse by gender in the first instance (so that we are picking from both male and female pupils that match the other characteristics)
- Move into the neighbouring SIMD vigintiles.
- For pupils with ASN who are less than 80% mainstream it may also be necessary to collapse by stage.

Learning from the preview editions of the tool, we have strengthened the implementation of the selection methodology to reduce the number of instances in which the characteristics for matching need to be widened in this way resulting in many fewer inexact matches.

d) Difference between leavers and August attainment methods

It is not possible to carry forward August attainment virtual pupils picked on the latest stage in current year into the leavers' matches. This is because some of the virtual comparators will not have left school and so will have no destination (there will also be issues of bias as the comparators could have stayed on, so may have had better attainment to start with). It is also not possible to use stage of leaving when picking virtual comparators for August attainment as we do not have leaver information at that time. Virtual comparators for these two groups are therefore picked separately.

This means that stage of leaving is not controlled for in the stage-cohort analysis and therefore, in certain cases, a school could perform consistently above its VC on the leavers analysis and consistently below it on the cohort analysis. In the stage based measures when you are considering, for example, S6 of S4, the matched pupils in your virtual comparator may have left at different points in the senior phase when compared to your own pupils. The difference between the two offers a richer understanding of the situation in the school.

e) Development of the Methodology

The methodology implemented in the tool was developed by the Scottish Government in consultation with stakeholders, which includes independent advice from Professor John McColl at the University of Glasgow. Other options were considered and we have taken forward a methodology which was found to be both appropriate and easily accessible for end users.

Regular health checks on the virtual comparator methodology have been performed and have provided reassurance that it is performing as expected.