

## Tariff Scale Applied in Insight

### Background

Insight is an online tool for benchmarking, analysing and comparing the senior phase. It is a professional tool available to secondary schools and local authorities to allow them to look at specific cohorts of pupils and help identify areas of success and where improvements can be made. Insight replaced the previous STACs system in September 2014.

Designed to support Curriculum for Excellence, Insight focuses on the leavers cohort in any given year by measuring best achievement at point of exit. It has a dashboard providing data on four national benchmarking measures aimed at:

- increasing post-school participation
- improving attainment in literacy and numeracy
- improving attainment for all
- tackling disadvantage by improving the attainment of lower attainers relative to higher attainers.

Insight then allows users to drill down to other measures and cohorts, helping them to understand the outcomes for their school or local authority in support of improvement.

### Role of the Tariff Scale

One of the features in Insight is the tariff scale. The purpose of this is to aid the analyses of attainment data so that schools and local authorities can compare attainment between schools, local authorities, the virtual comparator or other breakdowns of cohorts in the senior phase. They provide a summary view of a wide range of achievement and different awards from a range of providers. This feature is useful for benchmarking purposes because it can help prompt questions about particular aspects of performance. These questions can then be investigated further using the rich and rounded information available within the tool. This rich view of attainment will continue to develop as CfE embeds in the senior phase.

**The Insight tariff scale and the tariff points accrued by particular schools, local authorities and cohorts should not be viewed as the only way of measuring performance and should be considered in the context of the other outcome measures included in the tool, for example, improving post-school participation and raising attainment in literacy and numeracy. In addition, the tariff scale should not be viewed as a reflection on the value of the qualifications achieved to the learner, nor should it be used to inform decisions about the particular courses that individual learners pursue.**

The tariff scale implemented in the tool will continue to be monitored as the new qualifications are embedded, with a full review of the scale in 2017 as agreed with the Project Board.

## **Insight Tariff Scale**

Each qualification (unit and course) included in the tool must be accredited to the [Scottish Credit and Qualifications Framework](#) (SCQF) and meet criteria related to the aims of Curriculum for Excellence and technical requirements. The qualification can then be awarded tariff points based on its SCQF level. This allows any qualification that is SCQF levelled to be included in the tariff score in an open and transparent way.

With the introduction of Curriculum for Excellence, it was agreed that it would be essential to implement a new tariff scale to ensure that it is capable of addressing the full range of possible journeys of learners in the senior phase whilst striving to avoid perverse incentives (e.g. quantity over quality).

The key principles underpinning the development of the new tariff scale are as follows:

- **Calculation** - Tariff points are calculated on the basis of SCQF credit points and a multiplier based on the SCQF level plus a weight for attaining the full course (0 if the award is a single unit or combination of units making up an ungraded course, or a variable weight if a course assessment element is involved i.e. added value unit at National 4 or course assessment at National 5 and above) and a weight differentiating between the grade achieved (A,B,C,D). Bands within grades are not differentiated in the tariff scale. A grade D achieves more points than units alone, recognising that a learner has achieved the course.
- **No gap** – the total of the units at a given SCQF level should be worth the same as an A at the level below. This recognises the high value of the overall course assessment – integration, challenge and application of learning – compared to achieving units alone.
- **Tariff points for Units and Courses** - Units attract tariff points as well as full courses. The achievement of a course (with a course assessment / added value unit) will get more credit than the achievement of the same number of standalone units at the same level. This reflects the additional application of learning that occurs across the course as a whole. Tariff points for a course award at the level below with units at the level above, attract fewer points than any grade at the level above.
- **Ungraded courses** - A pass (in a pass / fail course with its own course assessment / added value unit) is equivalent to a Grade C in a graded course at the same level. Ungraded courses without a course assessment / added value element will receive tariff points for the units alone with no additional weighting. A small number of courses which do not have an assessment or added value unit, such as Skills for Work, have been determined to contain an added value element delivered through the accumulation of units and are treated for tariff as having equivalence to a Grade C.

- **Existing qualifications** - Existing qualifications are mapped to the new tariff points based on their SCQF level and credit points. To avoid advantaging or disadvantaging any sector, as National courses at SCQF level 4 and below are ungraded, any courses at or below SCQF level 4 receive tariff points set at the pass level regardless of grade e.g. Intermediate 1 at A-D and Standard Grades 3 and 4 receive points equivalent to a National 4 pass.

### **Calculation of Points for each Qualification**

The tariff points for a unit or course are currently calculated as follows:

$$\text{Tariff points} = (\text{CP} * \text{multiplier}) + ((\text{CP} * (\text{course wt} + \text{result wt})) / \text{NCC})$$

Where:

- CP = SCQF credit points
- Multiplier. This is the multiplier for the SCQF level.
- Course wt = Course weight. This is the weight for attaining the full course at that SCQF level (0 for a single unit or combination of units making up an ungraded course, or a variable weight if a course assessment element is involved i.e. added value unit at National 4 or course assessment at National 5 and above).
- Result wt = Result weight. This is the weight which differentiates between the grade achieved (A, B, C, D) for the course at the SCQF level. The weight is such that a grade D receives more points than units alone, recognising that a learner has achieved the course.
- NCC = National course correction. This is the SCQF credit points for the SQA National Course at the same level (with the exception of the BAC IP)

The calculation has been amended once in September 2015 in order to allow us to accommodate a wider range of attainment. This amendment was designed to ensure no change to tariff points for qualifications already included in Insight.

## Multipliers

The multipliers being applied are as follows:

SCQF Level	Multiplier
1	1/6
2	1/3
3	2/3
4	1
5	11/6
6	14/3
7	17/2

## Course Weights

The course weights for qualifications with a course assessment / added value element are as follows:

SCQF Level	Course Weight
4	9
5	20
6	48
7 – Advanced Higher	128
7 – IP	64

If the qualification is a combination of units making up an ungraded course without a course assessment element, its course weight is 0.

## Result Weights

Result weights vary by SCQF level and type as follows:

SCQF Level	Grade	Result Weight
7	A	80
	B	40
	C	0
	D	-20
6	A	44
	B	22
	C	0
	D	-11
5	A	20
	B	10
	C	0
	D	-5

Result weights for Open University Young Applicants in Schools Scotland (YASS) awards are as follows:

SCQF Level	product type	Grade	Result Weight
7	YASS01 (ungraded)	Pass	0
		Aegrotat Pass	0
	YASS02 (abridged grading)	Distinction	80
		Pass	0
		Aegrotat Pass	0
	YASS03 (full grading)	Distinction	80
		Grade 2 Pass	54
		Grade 3 Pass	27
		Grade 4 Pass	0
		Aegrotat Pass	0

### National Course Correction

The National Course Corrections are applied as follows:

SCQF Level	National Course Correction
2	18
3	18
4	24
5	24
6	24
7	32
7 - IP	16

### Exceptional Cases

A small number of qualifications included in the tool have a structure which requires adjustments to their treatment in the tariff scale. These are:

- Baccalaureate – this award is built up from a number of Higher and Advanced Higher courses plus the completion of an Interdisciplinary Project. Since receiving points for the individual courses and the full baccalaureate award would be duplication, in these cases no points are received for the Baccalaureate award but the pupil receives points for the contributing courses as well as the Interdisciplinary Project which is treated as equivalent to half an Advanced Higher.
- Scottish Group Award and National Certificate Group Awards – similar to above, these awards are built up from a combination of courses and / or units. To avoid duplication, no points are included for these awards but each of the constituent courses and units will be counted within the methodology described.
- Skills for Work, National Progression awards, National Certificates and Scottish Vocational Qualifications (SVQs) – following Project Board discussion in May 2016, these courses have been determined to contain an added value element delivered through the accumulation of units. and Achievement of the award is

treated in the tariff as equivalent to a Grade C in a graded course at the same SCQF level (or a pass if at SCQF level 4 ).

Please note that, in the current implementation of the tariff scale, a course assessment undertaken without the completion of the units and the attainment of the full course will receive the same points as any other unit at that SCQF level and will not receive additional weight.

### Examples

- Youth Scotland's Youth Achievement Award at SCQF level 7 is an ungraded course without a course assessment / added value unit attracting 16 SCQF credit points. It therefore receives,

$$16 * 17/2 \\ = 136 \text{ tariff points}$$

- A Science Baccalaureate built up from Advanced Higher Mathematics at Grade B (32 SCQF credit points), Advanced Higher Physics at Grade A (32 SCQF credit points) and an Interdisciplinary Project at Grade B (16 SCQF credit points) would receive,

$$(32 * 17/2 + 128 + 40) + (32 * 17/2 + 128 + 80) + (16 * 17/2 + 64 + 20) \\ = 440 + 480 + 220 \\ = 1140 \text{ tariff points.}$$

- National 5 English at Grade B would receive,

$$(24 * 11/6 + 20 + 10) \\ = 74 \text{ tariff points.}$$

### Calculation of Tariff Point Measures

The Project Board has agreed that, as a default, measures based on tariff points will be built up from total pupil tariff points based on 'latest and best achievements' in each subject. The national dashboard measures using tariff points are measured at exit from secondary school. This means that all subjects studied by the pupil in the senior phase will be included but higher level qualifications and better grades will receive more points. In this way both breadth and depth of attainment are promoted in line with the CfE aims.

### Latest and Best Achievement in a Subject

The purpose of basing a pupil's tariff points on latest and best qualifications in a subject is to ensure that there is no incentive or dis-incentive to go through every level. For example, someone undertaking a National 5 in Maths and then a Higher in Maths will receive the same points as someone who has only taken the Higher Maths (assuming they receive the same grade at Higher).

The latest and best achievement in a subject is calculated as the sum of the tariff points for their best course result in the subject plus any extra points because of unit attainment at level(s) above.

“Extra points” is intended to be defined as the difference between the unit values at the two levels. Insight handles this as follows:

- Units which are fully standalone (i.e. cannot contribute to a course) are directly linked to subject and can therefore be compared with the highest course attainment in that subject. If they are the only unit in that subject the full points are counted and if they are at a lower level then the unit will not contribute points to the tariff score. However, if the unit is at a higher level then points are added according to the difference between the points for the unit and the points which a similar sized unit at the level of the lower course would achieve.
- Other units are assigned a subject according to ‘popularity reference data’. Attainment information is used to determine the range of courses which the unit can contribute to, and to rank these according to the frequency with which the unit is a contributor. If the candidate has other attainment in one of these subjects, the unit is assumed to also be relevant to that subject. If the candidate has no attainment in any of the subjects then the ‘most popular’ subject is used.
- If a unit cannot be assigned to either the standalone or popularity reference data, then it is treated as though it belongs to its own subject area and its full points would be counted.

Handling of unit attainment is a best estimation approach which will continue to be revisited in future.

The points to be added for a unit at a higher level than the best course in a subject are demonstrated as follows. For a best course result of B at National 5 and one higher level unit at level 6, where units at both levels are worth 6 SCQF credit points, the difference between the two units is therefore  $(6 \times 14/3) - (6 \times 11/6) = 17$ . The result of grade B at National 5 attracts 74 tariff point, as shown in the [following table](#), therefore the tariff points for the subject are  $74 + 17 = 91$ .

### **Total tariff score**

All attainment in the senior phase, up to and including the year in question, is considered in the calculation regardless of the centre at which attainment was originally achieved or the centre at which the candidate was based at the time of the attainment e.g. in the case of school-college partnerships or candidates moving schools.

The total tariff points for the candidate across all of their subjects is calculated as a cumulative measure of their latest and best attainment in each subject to the given point in time plus points for any standalone units which are un-related to any other subject qualification.

## **Example A: Calculating total tariff point scores**

Suppose a school leaver attained the following in the senior phase:

- 5 National 5s in English (A), Maths(C), French (A), German (A), History (B)
- 2 Highers in English (A) and French (B), 2 Higher units in German (but did not complete the course).
- 1 Advanced Higher in English (C).
- 1 Youth Scotland Youth Achievement Award at level 5.

It is necessary to first calculate the latest and best result in each subject:

- English – Advanced Higher C = 400 points.
- Maths – National 5 C = 64 points.
- French – Higher B = 182 points.
- German – National 5 A = 84 points. But they have achieved 2 units at Higher so we deduct 2 National 5 units (22 points) and add on 2 Higher units (56). So, a total of 118 points.
- History – National 5 B = 74 points.
- Youth Scotland Youth Achievement Award at level 5 = 20 points.

The total tariff points for this school leaver is therefore:

$$400+64+182+118+74+20 = 858.$$

## **School and local authority level measures**

When tariff points are presented in the tool the default measure is an average of the total tariff points for the relevant candidates in the cohort, for example, in the 'improving attainment for all' and 'attainment versus deprivation' measures.

## **Complementary tariff score**

For the February 2016 version of insight, a pilot complementary tariff measure was offered as an option for changing the basis of the 'Attainment versus Deprivation' and 'Improving Attainment for All' dashboard measures (national and local). The complementary tariff measure was introduced to give an additional perspective on achievement within schools/local authorities although the total tariff remains the key measure. When this option is selected the title and y axis label will change to reflect this.

The number of tariff points for each individual course or award is the same for both the total tariff and complementary tariff measures. Additionally, the best attainment (number of tariff points) for each subject is calculated as per the total tariff measure i.e. taking account of latest and best achievements. The way the complementary tariff measure differs from the total tariff measure relates to the number of SCQF credit points which are counted for each learner;

- The total tariff measure is the sum of tariff points accumulated across the latest and best achievement in all subjects in which a learner has achievement.
- The complementary tariff measure is the sum of tariff points accumulated across the latest and best achievement in subjects which a learner has achievement, up to a maximum of 120 SCQF credit points.



- The subjects which contribute to the 120 SCQF credit points in the complementary tariff measure are those in which the learner has achieved the highest tariff points relative to the amount of learning in that subject (subject tariff points / SCQF credit points for that subject).

### **Example B: Calculation of complementary tariff point scores**

Suppose we take a school leaver whose latest and best achievement (as defined for total tariff measures) was:

- French - National 5 = 64 tariff points
- English - Higher B = 182 tariff points
- Personal development and employability award – level 5 = 38.5 tariff points
- Maths – Advanced Higher A = 480 tariff points
- Physics – Advanced Higher B = 440 tariff points
- Geography - Advanced Higher C = 400 tariff points
- Chemistry - Advanced Higher A = 204 tariff points

The **total** tariff points for this school leaver would therefore be:

French (tariff points = 64) + English (tariff points = 182) + Personal development and employability (tariff points = 38.5) + Maths (tariff points = 480) + Physics (tariff points = 440) + Geography (tariff points = 400) + Chemistry (tariff points = 204)  
**= 1808.5 (total tariff points)**

In order to calculate the same school leaver's complementary tariff points we also need to know the SCQF credit points for these subjects. In order to decide which subjects will be counted in the complementary tariff, the tariff points for a subject are divided by the SCQF credit points for the same subject. This gives a measure of achievement relative to the amount of learning. The subjects are then listed in order of this value, from highest to lowest.

- Maths: 480 tariff points / 32 SCQF credit points = 15
- Physics: 440 tariff points / 32 SCQF credit points = 13.75
- Geography: 400 tariff points / 32 SCQF credit points = 12.5
- Chemistry: 204 tariff points / 24 SCQF credit points = 8.5
- English: 182 tariff points / 24 SCQF credit points = 7.58
- French: 64 tariff points / 24 SCQF credit points = 2.67
- Personal development & employability award: 38.5 tariff points / 21 SCQF credit points = 1.83

We then sum SCQF credit points down the list until we reach 120\*. So in our example we would take

Maths (SCQF credit points = 32) + Physics (SCQF credit points = 32) +  
 Geography (SCQF credit points = 32) + Chemistry (SCQF credit points = 24)  
 = 120 SCQF credit points

The tariff points for only these subjects then count in the calculation of complementary tariff points. So in our example the complementary tariff points would be

$$\begin{aligned} & \text{Maths (tariff points = 480) + Physics (tariff points = 440) + Geography (tariff} \\ & \text{points = 400) + Chemistry (tariff points = 204)} \\ & \mathbf{= 1524 \text{ complementary tariff points.}} \end{aligned}$$

If the first 120 SCQF credit points of achievement is not made up from complete subjects then the complimentary tariff will be calculated as the sum of tariff points up to the last subject under the cut-off and then the correct proportion of the subject lying across the threshold. For example, if a learners latest and best achievement came from the following subjects (ordered by highest tariff points relative to the amount of learning) was:

- Maths: 480 tariff points / 32 SCQF credit points = 15
- Physics: 440 tariff points / 32 SCQF credit points = 13.75
- Chemistry: 204 tariff points / 24 SCQF credit points = 8.5
- English: 182 tariff points / 24 SCQF credit points = 7.58
- French: 64 tariff points / 24 SCQF credit points = 2.67

Then the 120 SCQF credit points would be made up from

$$\begin{aligned} & \text{Maths (SCQF credit points = 32) + Physics (SCQF credit points = 32) +} \\ & \text{Chemistry (SCQF credit points = 24) + English (SCQF credit points = 24)} \\ & = 112 \text{ SCQF credit points} \\ & + 1/3 \text{ of the SCQF credit points for French (24/3 = 8)} \\ & = 120 \text{ SCQF credit points} \end{aligned}$$

The calculation of the tariff points follows the same principle so in our example the complementary tariff points would be

$$\begin{aligned} & \text{Maths (tariff points = 480) + Physics (tariff points = 440) +} \\ & \text{Chemistry (tariff points = 204) + English (tariff points = 180)} \\ & + \text{French (tariff points = 64/3 = 21.3)} \\ & \mathbf{= 1325.3 \text{ complementary tariff points}} \end{aligned}$$

### **Units in the calculation of complementary tariff**

Pupil achievement from individual units can count towards the complementary tariff points in a similar manner to total tariff points e.g. achievement from individual units which are at the same level (or lower) than a course in the same subject are discounted and units which are the highest level achievement in that subject, can contribute towards the tariff.

### **Further Information**

As noted above, the tariff implemented in the Tool will continue to be monitored as the new qualifications are embedded, with a full review of the scale in 2017 as agreed with the Project Board.

For more information about the Insight project please visit [www.scotland.gov.uk/insightbenchmarking](http://www.scotland.gov.uk/insightbenchmarking) or email [insight@scotland.gsi.gov.uk](mailto:insight@scotland.gsi.gov.uk)

### Examples of tariff points for National Qualifications

SCQF Level	Grade	SCQF Point	Tariff Score
7	A	32	480
	B	32	440
	C	32	400
	D	32	380
	Individual units	Varies	17/2*SCQF Points
6	A	24	204
	B	24	182
	C	24	160
	D	24	149
	Individual units	Varies	14/3*SCQF Points
5	A	24	84
	B	24	74
	C	24	64
	D	24	59
	Individual units	Varies	11/6*SCQF Points
4	Course – Pass	24	33
	Added value unit	6	15
	Individual units	Varies	1*SCQF Points
3	Total units	18	12
	Individual units	Varies	2/3*SCQF Points
2	Total units	18	6
	Individual units	Varies	1/3*SCQF Points
1	Individual units	6	1

Please note that:

- Skills for Work and Ungraded National Courses receive points equivalent to a C in a graded course at the same SCQF level. This reflects the fact that added value has been demonstrated to the Project Board.
- All other ungraded courses included in the tool are treated as collections of units without a course assessment / added value element and therefore receive tariff points equivalent to their SCQF credit points \* SCQF multiplier.
- Standard Grade 7 does not receive tariff points under since it is not SCQF levelled.
- SCQF credit points received for an award are included in the data submitted by award providers.